Updesh Kumar *Editor*

Handbook of Suicidal Behaviour

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To my wife, Anju, son, Kushal, and daughter,
Dakshi, the bastion of support
and understanding in my journey…

Foreword

Suicide is among the most tragic events in human life, causing a great deal of serious psychological distress among the relatives and friends of the victims as well as great economic burden for the whole society. The fact that around 800,000 people die by suicide throughout the world annually clearly shows the magnitude of this problem. Most suicides worldwide occur due to less developed or scarcely available health and social services, especially in low- and middle-income countries. While the national suicide rates of most European countries and China decreased markedly during the last few decades and especially sharply since the 1980s after the widespread availability of antidepressants, there has been no significant change in India, and in the USA, with the overall suicide rate increasing substantially, by 24% between 1999 and 2014.

Suicidal behaviour is a highly complex, multi-causal phenomenon, involving several psychiatric, biomedical, psychosocial, demographic and cultural components. The history of, mostly untreated, major psychiatric disorders constitutes the most important risk factor everywhere in the world. The importance of psychiatric disorders in suicidal behaviour is also reflected in the fact that actively suicidal patients are referred almost exclusively to psychiatric departments. However, the fact that majority of psychiatric patients never complete or attempt suicide indicates that several other (familial–genetic, personality, social, cultural and demographic) factors also play a significant contributory role. This shows that the approach to suicide prevention should also be complex and should go way beyond the mere recognition and treatment of the underlying mental disorder, which is absolutely necessary but far from enough. Suicide is one of the most easily preventable premature deaths in optimal situations, but in the majority of cases, its prediction and prevention is one of the greatest challenges for the clinician.

In spite of the recent progress in research concerning prediction and prevention of suicidal behaviour, the present situation is far from ideal. There is a big gap between our theoretical knowledge and technology, and implementation of these in everyday healthcare clinical practice. On the other hand, however, mental disorders most frequently associated with suicidal behaviour are still under referred, under diagnosed and under- or mistreated. The stigma associated with mental disorders

and suicidal behaviour is a major barrier to help-seeking behaviour, and many people feel unable to seek help or have no access to appropriate care, while others are noncompliant even with the most professional care. However, health and social care workers are not solely responsible for suicide prevention. Community leaders, civil organizations and ultimately every person have their own task with more or less competence, possibility and responsibility in this sort of work. Public education concerning the dynamics of the development of suicidal intent, signs of approaching suicidal behaviour, combined with decreasing the associated stigma would enable the suicidal individual to recognize the risk and take necessary action. Therefore, successful prevention of unnecessary suicidal deaths would not only require involvement of other professions and several levels of professionals, but would involve raising awareness among the general population as well.

An invigorating effort in compilation of chapters by Dr. Updesh Kumar, senior Indian defence scientist, makes an invigorating effort in compilation of chapters, in this excellent *Handbook of Suicidal Behaviour*. The Handbook widely discusses all important aspects of recognition, treatment and prevention of suicidal behaviour from the purview of biological, psychosocial and cultural factors, including the talking point within this area—suicide terrorism. The rich, scientific content of this Handbook collates theory and practice, supporting clinicians and researchers in percipience of suicidal behaviour and responding to the cry of pain of those in need.

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Preface

In the light of recent developments, with suicide emerging as major global health concern, the worth of an individual's life appears to be deprecating. In the current scenario, it has been estimated that every 40 seconds, one person in the world dies by committing suicide. By the year 2020, the WHO estimates that approximately 1.53 million deaths may occur by suicide with the rate for suicide attempts increasing by 10–20 times that leads to the inference of one death every 20 seconds and one attempt every 1–2 seconds on an average. Thus, the phenomenon emerges as an alarming affair that warrants greater attention.

The need to create awareness, greater understanding and prevention of this construct has congregated the interests of researchers and practitioners worldwide. Suicidology has driven the field of research and has diversified across the globe. The phenomenon has been viewed from the lens of various theoretical perspectives, cultural contexts, assessment measures and identification of people at-risk, prevention and intervention. However, with progressive advances within the field, the construct needs to be defined as it should be understood with the evolving times. *The Handbook of Suicidal Behaviour* strives towards providing state-of-the-art research and development within the field of suicidology. It endeavours to impart a holistic overview of the phenomena of suicidal behaviour, accounting for its underlying dynamics from various trajectories, vulnerable groups, applications and implications for management and prevention.

The Handbook of Suicidal Behaviour has been methodically classified into three parts. Part I, "Deconstructing the Phenomenon of Suicide", addresses suicidality from various theoretical standpoints and provides a contextual overview of the same. The Handbook is introduced with a chapter on *Theorizing Suicide: Multiple Perspectives and Implications for Prevention* (Chap. 1) by Mukherjee and Kumar, with an attempt towards elucidating upon the major theoretical underpinnings of the multidimensional phenomenon of suicide. Alongside, we have critically analysed the efficacy of the existing frameworks of suicidal behaviour, discussing the specificities and the generalities across research within this field. The following two chapters, *Suicide in Ancient Hindu Scriptures: Condemned or Glorified?* (Chap. 2) and *"To Life": Biblical Narratives, Positive Psychology and Suicide-Prevention*

(Chap. 3), provide a comprehensive discourse on understanding suicide from the viewpoint of ancient Hindu, Biblical and Graeco-Roman scriptures. Nrugham explores the complexity of suicide from the *Upnishads*, the *Brahma Sutras* and the *Bhagvad Gita*, juxtaposed against the backdrop of modern Indian culture and laws in the former. The discussion on ancient scriptures is taken forward in the latter by Kaplan and Cantz who endeavour to draw a comparison between biblical and Graeco-Roman narratives regarding risk factors associated with suicide. The authors have suggested therapeutic ways in which biblical narratives could be employed for promoting health and well-being, thereby building upon the existing approaches to intervention for suicidal behaviour within the field.

Genetics of Suicidal Behaviour (Chap. 4) has been examined by Wang and Dwivedi, highlighting the recent developments in molecular genetic approaches to suicide prevention. Progressing further into understanding the conceptual basics of suicidal behaviour, *Impulsivity, Decision-Making and Their Role in Suicidal Behaviour* (Chap. 5) by Gvion and Apter, focuses upon the interaction of impulsivity and decision-making against the backdrop of suicidal behaviour. In the light of existing literature, the authors attempt towards drawing a distinction between the two constructs alongside other variables that mediate suicidal behaviour with emphasis upon high-lethal suicide attempts. *Gender Disparities, Mental Health Complexities and Social Connectedness: Exploring an Integrative Approach Towards Suicidal Behaviour* (Chap. 6) by Archana and Kumar deliberates upon gender differences and mental health issues across behaviours related to suicide. We attempt towards highlighting social connectedness as an instrumental protective factor against associated risks of suicide.

With reference to specific contexts, the next chapter by Salman, Camit and Bongar on *Suicide as a Response to Trauma* (Chap. 7) explores different types of trauma and its co-morbidity with suicidal behaviour. Furthermore, the authors delve into culturally influenced forms of trauma from the lens of suicidal behaviour. Emphasizing on the contextualized understanding, Dechesne and Bandt-Law provide a comprehensive synthesis of recent empirical evidence that facilitates towards understanding mechanisms influencing the path of suicide terrorism in their chapter *Suicide Terrorism* (Chap. 8). Furthering the deliberations on suicide terrorism, *The Communication of Suicide Terrorism* (Chap. 9) by Matusitz, illuminates five different ways of communication, namely the weapon of mass persuasion, non-verbal communication, the martyrdom video, the expression of social status and the culture of death. The author cites thorough explanation of these ways of communication, providing in-depth examples for the same.

Advancing towards exploring the *Risk Appraisal and Vulnerable Groups* in suicidology, Barnes, Nazem, Monteith and Bahraini introduce Part II of the Handbook in chapter on *Suicidal Crises: The Clinical and Research Implications of Overlooking the Role of Suicidal Reactivity* (Chap. 10) that examines suicidal reactivity as a trans-theoretical and trans-diagnostic construct relevant to the field as a whole citing important scholastically drawn evidence. The authors also attempt to review assessment measures relevant to suicidal reactivity, shedding light upon research on the objective assessment of reactivity and avenues for further research.

The chapter on *Lethal Means Restriction: Historical, International, and Professional Considerations* (Chap. 11) by Bongar, Lockwood, Spangler and Cowell provides an overview on current lethal means restriction data to better-inform risk assessment procedures for patients from diverse backgrounds. The authors also aim at equipping mental health professionals with improved risk assessment procedures for effective prevention.

Progressing towards understanding the factors involved in facilitating suicidal behaviour, the chapter by Shelef, Korem and Zalsman illustrates *Dissociation and Habituation as a Facilitating Processes Among Suicide Behaviours* (Chap. 12). With emphasis on the role of facilitating factors, namely dissociation and habituation and their relationship to suicidal behaviour, the authors also discuss underlying dynamics and its influence leading to increased probability of suicidal behaviour. Hosseini, Walsh and Brown extend the discourse further by deliberating upon *Indirect Self-destructive Behaviours Across the Lifespan* (Chap. 13). They conceptually delineate the indirect life-threatening behaviour and its role with suicidal behaviour. With the same line of thought, the authors also provide a critical appraisal of the existing body of literature on indirect self-destructive behaviours and its implications for research, clinical practice and policy-making.

From a contextual perspective, the chapter on *Suicidal Behaviour Among Black Males Differ from Recognized Behaviour in Other High Risk Groups: A Review* (Chap. 14) by Barnes and Godfrey emphasizes the role of specific cultures in understanding suicidal behaviour. She puts forth a comprehensive review on the prevalence of lacunae in the existing literature in the light of suicide prevention in high-risk communities. *Suicidal Ideation in Adolescents—A Transcultural Analysis* (Chap. 15) by Rozanov and Rakhimkulova attempts at understanding the phenomenon of suicide among adolescents across cultures and identifying the possible associated risk factors and peculiarities across societies. The authors briefly try to sum up various protective factors for adolescents with suicidal behaviour and suggest possible preventive measures and intervention strategies as well. Moving further in understanding this phenomenon across various vulnerable groups, Pandey, Prasad, Mishra, Garg and Mishra emphasize upon an often overlooked area of gerontology in order to discuss the risk factors and the causes that influences the decision of suicide, in their chapter *Geriatric Population: Suicide as a Road to Relief or to Release* (Chap. 16). They suggest effective preventive measures for management of suicidal behaviours among elderly people as well with regard to the factors, the conditions and the psyche of the elderly people who attempt suicide.

Veeraraghavan reviews and provides a comprehensive synthesis of empirical studies delineating the complexity of the relationship between suicidal behaviour and substance abuse in her chapter *Substance Abuse and Suicidal Behaviour* (Chap. 17). She summarizes the existing de-addiction and rehabilitation methods for drug addiction emphasizing on the importance of an interdisciplinary approach towards intervention to overcome and control the extent of the problem. In the light of understanding the associated risk factors of pharmacological intervention in treatment of depressed patients, Courtet, Nobile and Lopez-Castroman exemplify the increased risk of suicidal behaviour in their chapter *Antidepressants and Suicide*

Risk: Harmful or Useful? (Chap. 18). The authors review contemporary approaches for treatment that targets the biological systems involved in the pathophysiology of suicidal behaviour.

Moving ahead in understanding the intricacies in the relationship between personality and suicide, the chapter by Smith, Vidovic, Sherry and Saklofske on *Self-oriented Perfectionism and Socially Prescribed Perfectionism Add Incrementally to the Prediction of Suicide Ideation Beyond Hopelessness: A Meta-Analysis of 15 Studies* (Chap. 19) predicts perfectionism as one of the traits that increases vulnerability of suicidal behaviour from a meta-analytic viewpoint. Evolving from a similar perspective, the chapter on *Personality Profiles of Suicide Ideators, Attempters, Completers and Suicide Note Writers Versus Non-writers* (Chap. 20) by Misra and Ghanekar presents a comprehensive deduction of risk factors that predispose an individual towards attempting suicide and suicidal ideation. The authors attempt at exemplifying the personality profiles of Suicide Ideators, Attempters, Completers and Suicide Note Writers and Non-Writers for effective crises management. Moving further towards understanding suicide among vulnerable groups, the chapter on *Chronic Suicidality and Personality Disorders* (Chap. 21) by Khanna, Sinha, Khanna, Moyal and Jha elucidates upon the psychosocial correlates of chronic suicidal ideation from various trajectories. The authors also unveil newer approaches for management and intervention for chronic suicidal ideation in patients with personality disorders.

To a large extent, the act of suicide does not solely affect the individual engaging in the behaviour, but also the people around their environment. The following two chapters delve into understanding the impact of suicide upon survivors of suicide. Saha, Ahuja, Harsheeta and I attempt at addressing the issues associated with the phenomenon of suicide bereavement and plausible interventions for the same in our chapter *Those Left Behind…: The Process of Bereavement for Suicide Survivors and Postvention* (Chap. 22). We have propounded a model to explicate the various factors that influence the process and outcome of bereavement for suicide survivors and explicate effective postvention strategies for suicide bereaved families. In lines of this theme, the chapter by Gow on *Solidarity in Times of Existential Crises in a Quantum World: Mapping Concepts and Weaving Field Narratives of Tragic Loss to Guide Those Left Behind* (Chap. 23) discusses the multidisciplinary, multi-modal aspects of forced or free choices to end life in specific circumstances. The author explains the factors associated with suicide through life narratives and stories woven around normal life experience illuminating the annihilation of spirit that occurs in long droughts and the black hole experience of Internet bullying. The chapter explicates and concludes, a newer avenue for suicide survivors, as it paves a way for them to move ahead with their existence, when no others means of undoing the past is possible.

After a thorough reflection upon risk appraisal and the vulnerable groups in suicidology from various trajectories, Part III of the Handbook is dedicated towards *Prevention, Intervention and Beyond*". Apart from the pursuit of enlightening the readers on prevention of suicidal behaviour, approaches to intervention strategies, this part aims at providing a fresh outlook towards management of suicidal

tendencies through a multidimensional perspective, set in various scenarios and contexts. The chapter on *Spirituality, Religion and Suicide: French Findings* (Chap. 24) by Mandhouj explores spirituality and religiousness as important resources of coping against suicidal tendencies. The author cites current research evidences that exemplify the link between spirituality and mental diseases and addictions, highlighting the need to consider spirituality in the treatment of patients in severe conditions. Bringing in the importance of crises intervention in the suicide prevention, the chapter on *Crisis Theory and Intervention Strategies as a Way to Mitigate Suicide Risk* (Chap. 25) by Séguin and Chawky emphasizes the efficacy of existing models of crises intervention in prevention of suicide. The authors also provide a critical appraisal using empirical evidence of the existing models of interventions and preventive measures from a meta-theoretical perspective. Barnes, Smith, Monteith, Gerber and Bahraini explicate the efficacy of acceptance and commitment therapy for suicide risk assessment and management in their chapter *ACT for Life: Using Acceptance and Commitment Therapy to Understand and Prevent Suicide* (Chap. 26). The authors try to illustrate ACT as an intervention through case examples, delineating the aetiology of suicidal thoughts and behaviours according to the ACT model of psychological (in)flexibility. Furthermore, they attempt at reviewing and synthesizing the extant literature relevant to this etiological model and discuss implications for suicide risk assessment and key considerations for using ACT to manage suicide risk. In line with existing approaches to intervention, Ibrahim, Russon and Diamond extend the horizons of intervention in their chapter *Attachment-Based Family Therapy for Depressed and Suicidal Adolescents: Development, Research and Clinical Practice* (Chap. 27) that focuses on attachment-based family therapy as an approach aimed at improving the capacity for problem-solving, affect regulation and organization while considering associated biological factors for families of adolescents with depression and suicidal behaviours. The authors bring in effective strategies that build upon and strengthen familial relationships between adolescents through the lens of this therapeutic approach.

Deliberating upon a very significant but a diverse fraction of population, Bonger, Hausman and Agin-Liebes illustrate the Special Operation Forces as a vulnerable group manifesting suicidal behaviour in their chapter *Addressing Suicides in Special Operations Forces: Enhancing Resilience in a Unique Population* (Chap. 28). In a conventional assumption that SOF individuals are particularly resistant to physical and psychological strain, empirical research focused upon the psychological impact of deployment on this specific population with recent data suggesting a stark rise in suicide rates among its special force members over recent years. In this regard, the authors critically evaluate the efficacy of FBI's Hostage Rescue Team approach and Preservation of the Force and Family programme in building resilience. Summing up the Handbook, the last chapter by Maslowski, Vescera and Bonger discusses potential risk factors of suicide in active duty veterans in the USA. Their chapter *Innovations in Military and Veteran Suicide Prevention* (Chap. 29) also emphasizes the military context and provides tailored

suicide prevention strategies and identification of risk factors that could facilitate the reduction of veteran suicide.

The compendium of writings is intended to provide an insightful read on various facets and related constructs of suicidology by eminent scholars from diverse disciplines, enhancing the plethora of knowledge of the reader. The conceptual deliberations and the underlying dynamics brought forth in Part I of the Handbook focus on the changing trends in the field of suicidology, along with fresh perspectives regarding theoretical underpinnings supported by current empirical evidences. Part II on risk appraisal and vulnerable groups goes beyond the conventional account of assessment and at-risk population-related elucidations, engaging the reader into understanding the layers of suicide from a different lens, a different context and a different theoretical standpoint. It delves further into certain implicit issues associated with the multifaceted nature of suicidal behaviour and provides a comprehensive understanding of the same. This Handbook aims to address the void in the existing literature on suicidal behaviour since it brings to the foreground, intricacies of suicidal behaviour that traditionally have been given scant consideration but merit greater reflection. Application of various existing theoretical frameworks and approaches towards management of suicidal behaviour in a vast range of domains has been enumerated along with wide-ranging empirical research, paradigmatically established evidences in Part III of the Handbook. An essential source of reference for the reader, in the field of suicidology, with insightful perspectives on current issues, cultural contexts and relevant frameworks across the globe, Part III elucidates prevention, intervention and management of suicidal behaviour that facilitates prevention of suicidal behaviour and promote well-being of an individual.

This Handbook is a dedicated attempt towards bringing together aspects that are often overlooked and, thus, add to the existing core body of knowledge on suicidal behaviour. With dedicated contributions from eminent scholars, scientists and academicians worldwide, in exploring the multifaceted nature of suicidal behaviour, the proposed Handbook will be of interest to novices and experts alike in the field of psychology and a valuable resource for mental health professionals, educators and policy makers globally in building a happier community.

The making of a comprehensive Handbook is a gruelling task that unquestionably demands unyielding dedication given the vast area of knowledge in the field of suicidology. I would like to express my indebtedness to each and everyone who have devoted their time and effort towards the successful completion of this mammoth endeavour. My heartfelt appreciation to all the renowned authors for their exemplary writings, which have enormously enhanced the eminence of this Handbook. This enterprise would not be successful without the enormous support and efforts of Ms. Shinjini Chatterjee, Senior Editor at Springer Nature.

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Editor and Contributors

About the Editor

Updesh Kumar Ph.D., is Scientist "G" and in the chair of the Head, Mental Health Division at Defence Institute of Psychological Research (DIPR), R&D Organization (DRDO), Ministry of Defence, Delhi. After obtaining his doctorate degree in the area of *suicidal behaviour* from Punjab University, Chandigarh, India, he has more than 26 years of experience as a Scientist in an R&D Organization. He specializes in the area of suicidal behaviour, personality assessment and health psychology. He is also the project director of a megaproject titled "*Comprehensive Soldier Fitness Program: Resilience Building*" for the Indian Armed Forces. Dr. Kumar has been involved in the selection of officers as well as responsible for monitoring the selection system of the Indian Armed Forces for the last two decades. Dr. Kumar has edited nine quality volumes on "*Recent Developments of Psychology*" (DIPR, 2006), "*Counseling: A Practical Approach*" *(Academic Excellence, 2010)*, "*Suicidal Behaviour: Assessment of People-at-Risk*", (SAGE, 2010) "*Countering Terrorism: Psychosocial Strategies*" (Sage, 2012), "*Understanding Suicide Terrorism: Psychosocial Dynamics*" (Sage, 2014), "*Suicidal Behaviour: Underlying Dynamics*", (Routledge, UK and USA, 2015), "*Positive Psychology: Applications in Work, Health and Well-being*" (Pearson Education, 2015), "*The Wiley Handbook of Personality Assessment*" (John Wiley & Sons, UK and USA, 2016) and most recently "*The Routledge International Handbook of Psychosocial Resilience*" (Routledge, UK and USA, 2016). The highlighted books with Sage Publications, Routledge, Pearson Education and John Wiley & Sons have been completed in collaboration with internationally acclaimed academicians/researchers from *India, the USA, the UK, Australia, Singapore, Israel, France, Belarus, Germany, Italy, Hungary, Hong Kong, Norway, Ireland, Ukraine, the Netherlands, Canada, South Africa, Croatia and Spain.* He has authored more than 50 other academic publications in the form of research papers, journal articles and chapters and represented his institute at national and international level. Dr. Kumar has been a psychological assessor (Psychologist) in various Services Selection Boards for eight years for the selection of officers in Indian Armed Forces and also on the selection panel with the prestigious Union Public Service Commission (UPSC), Government of India. He is a certified psychologist by The British Psychological Society with level "A" and level "B" Certificate of Competence in Occupational Testing. He has to his credit many important research projects relating to the Indian Armed Forces. He was conferred with the *DRDO's Best Popular Science Communication Award-2009* by Hon'ble Defence Minister of India. He has also been the recipient of *DRDO Technology Group Award* in 2001 and 2009, *Professor Manju Thakur Memorial Award-2009 and 2012* by Indian Academy of Applied Psychology (IAAP) and *Professor N. N. Sen Best Paper Award* for the year 2010 by the Indian Association of Clinical Psychologist (IACP). Recently, he has been conferred with *Laboratory Scientist of the Year Award-2012–2013* and prestigious *DRDO's Scientist of the Year Award-2013* by the Government of India.

Contributors

Samridhi Ahuja is a RCI certified counselor trained in child and adolescent guidance and counseling from NIPCCD, New Delhi. She has pursued her Bachelors in Psychology and Masters in Psychology from University of Delhi. Having previously practiced at NIPCCD, she is passionate about working with children with developmental disorders and groups with special needs to improve their quality of life. Currently, she is pursuing her Ph.D. in the area of Clinical Psychology. Her areas of interest also include Indian Psychology, Developmental Psychology and Counseling. As a Research Scholar at the Defence Institute of Psychological Research, Defence R&D Organisation, Ministry of Defence, Government of India, she is associated with the major research project on "*Comprehensive Soldier Fitness Program: Resilience Building*", under the directions of Dr. Updesh Kumar, Scientist 'G' and Head, Mental Health Division at DIPR. Apart from this, she has presented papers in various National and International Conferences and has publications in peer reviewed journals.

Gabrielle Agin-Liebes is a first-year student in the clinical psychology Ph.D. program at Palo Alto University. She is also a research assistant at Stanford University in the Department of Psychiatry and Behavioural Sciences where she is conducting research into novel treatments for treatment-resistant depression. From 2012 to 2015, Ms. Agin-Liebes served as the research project manager for a number of studies at NYU School of Medicine (NYUSoM), Department of Psychiatry, under the tutelage of Stephen Ross, M.D., that examined novel treatments for anxiety, depressive, and substance use disorders. She is currently a lead investigator of three qualitative studies at NYUSoM, which explore the subjective experiences of participants undergoing treatment in these studies.

Alan Apter M.D., is a Professor of Psychiatry at the Sackler School of Medicine at the University of Tel Aviv, where he served as a chair of the department. He is also the director of the Feinberg Child Study Center at Schneider's Children's Medical Center of Israel, member of numerous professional societies and organizations and has published more than 300 articles and chapters as well as two books. He is a member of the Israel government inter-ministerial committee on suicide prevention and is also an advisor on suicide prevention to the Israel Defence Force and a recipient of the American Foundation for Suicide Prevention's Distinguished Investigator Award.

Archana Ph.D., is Scientist 'E' at Defence Institute of Psychological Research (DIPR) and is associated with R&D activities in the areas of organizational behaviour, mental health and well-being of soldiers in the peace as well as field locations. She has to the credit number of papers in the national journals of repute. She has authored two manuals on 'Stress Management' and 'Psychological Well-Being of Soldiers at High Altitude'. In addition, she has made valuable contributions in organizing many workshops and seminars for the soldiers in the area of military psychology. She has been the course coordinator in organizing training programs

for service officers in the area of counseling. She has also been actively involved in delivering lectures on stress management and other related areas in active field environment. She has been the associate editor of a volume on "Positive Psychology: Applications in Work, Health and Well-being". She has been a recipient of Defence Research and Development Organization (DRDO) National Technology Oration Award in the year 2014.

Nazanin H. Bahraini is a Clinical Research Psychologist and the Director of Education at the Rocky Mountain Mental Illness Research, Education and Clinical Center, which focuses on preventing suicide among military Veterans. Dr. Bahraini's research is broadly focused on rehabilitation and recovery of Veterans with mild traumatic brain injury and co-occurring posttraumatic stress disorders. In addition to her active research programme, she supplies training opportunities for new professionals, such as clinical supervision and other activities facilitating the growth of postdoctoral fellows, psychology interns, and practicum students. Dr. Bahraini is equally active in other educational activities, including the dissemination of suicide prevention resources, educational products and evidence-based practices to Veterans, providers and the community. Dr. Bahraini is also an Assistant Professor at the University of Colorado School of Medicine, Departments of Psychiatry as well as the Department of Physical Medicine and Rehabilitation.

Bryn Bandt-Law is a psychology student at Claremont McKenna College (CMC), California, USA. Her research is primarily focused on how humans' awareness of their own death influences legal decision-making and health-related behaviour. She worked with Dr. Mark Dechesne at Leiden University's Faculty of Governance and Global Affairs on projects involving political psychology, existential psychology, and suicide terrorism. She currently works in Dr. Jamie Arndt's Existential Motivation Laboratory at the University of Missouri and is examining how individuals' awareness of their own mortality influences disordered eating thoughts and behaviour.

Donna Holland Barnes Ph.D., is an Associate Professor at Howard University's Psychiatry Department in Washington, D.C. and an active advocate for suicide prevention and intervention. She has authored several journaled articles and chapters on suicide for books in the area of mental health and completed a book on the *Truth about Suicide* published by DWJ books for adolescents. Dr. Barnes is a master trainer for QPR Institute and trains groups and individuals on how to recognize the signs when someone is in a crisis and how to manage the situation. Certified in grief recovery, she also works with support groups suffering from a loss. Barnes is founder and President of the National Organization for People of Color against Suicide (NOPCAS) and a founding member of the National Council for Suicide Prevention (NCSP).

Sean M. Barnes is a Clinical Research Psychologist in the Department of Veterans Affairs and a Principal Investigator in the Rocky Mountain Mental Illness Research, Education and Clinical Center (MIRECC), which focuses on preventing suicide

among military Veterans. He is also an Assistant Professor in the Department of Psychiatry at the University of Colorado School of Medicine. His primary clinical and research interest is suicide risk assessment and prevention. His research is focused on validating objective measures of suicide risk with the hope of overcoming the limitations of patient self-report. Moreover, he seeks to develop methods to assess the likelihood that suicidal thoughts and urges will resurface if a patient experiences dysphoric emotions or stressors. He has ongoing projects aimed at developing, refining or increasing the uptake of empirically supported, brief and/or nontraditional therapies, ranging from mindfulness-based interventions to computerized cognitive behavioural therapies.

Bruce Bongar Ph.D., ABPP, FAPM is currently a Calvin Distinguished Professor of Psychology at Palo Alto University and is a Visiting Professor of Psychiatry and Behavioural Sciences at Stanford University's School of Medicine. Professor Bongar's past clinical appointments include service as a senior clinical psychologist with the Division of Psychiatry, Children's Hospital of Los Angeles, and work as a clinical/community mental health psychologist on the psychiatric emergency team of the Los Angeles County Department of Mental Health, past president of the Section on Clinical Crises and Emergencies of the Division of Clinical Psychology of the American Psychological Association, a diplomate of the American Board of Professional Psychology, a fellow of the Divisions of Clinical Psychology (Div 12), Psychology and the Law (Div 41), and Psychotherapy (Div 29) of the American Psychological Association, a fellow of the American Psychological Society and of the Academy of Psychosomatic Medicine, and a chartered psychologist of the British Psychological Society. Dr. Bongar has also been a winner of the Edwin Shneidman Award from the American Association of Suicidology for outstanding early career contributions to suicide research, and the Louis I. Dublin award for lifetime achievement in research on suicidology. In 2008, he was awarded the Florence Halpern award by the Division of Clinical Psychology of the American Psychological Association for distinguished contributions to the practice of clinical psychology. From 2002 to 2005, he was the founding director of the National Center on Psychology of Terrorism.

Lisa M. Brown Ph.D., ABPP is a Tenured Professor and Director of the Trauma Area of Emphasis at Palo Alto University. Her clinical and research focus is on trauma and resilience, suicide, global mental health, aging, and vulnerable populations and has worked towards developing measures to assess mood, cognition, and daily activities. She serves as a Consultant for multiple state and national mental health agencies and health provider organizations.

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Nadia Chawky is a Psychologist and a Clinical Research Coordinator, for the McGill Group for Suicide Studies. Ms. Chawky has collaborated in numerous research studies pertaining to suicide risk factors, bereavement after suicide and suicide trajectories. She collaborated as a coordinator, a clinical supervisor as well as a trainer in a number of suicide studies in different regions of Québec as well as in New Brunswick and Nunavut.

Philippe Courtet Ph.D., is Professor of Psychiatry at the University of Montpellier and Head of the Department of Emergency & Post acute care Psychiatry at the Academic Hospital, Montpellier, France. He leads a research group "vulnerability of suicidal behaviour" in the INSERM Unit 1061. Professor Courtet obtained his Ph.D. in neurosciences in "genetic of suicidal behaviour". His areas of interest and expertise involve vulnerability to suicidal behaviour, particularly focusing on brain imaging and the role of social pain in suicidal behaviours. Professor Courtet is chairman of the task force "suicide" of the World Federation of Societies of Biological Psychiatry, currently the President of the *French Association of Biological Psychiatry and Neuropsychopharmacology*, a member of the European Psychiatric Association, co-chairman of the Network "suicide" of the European College of Neuropsychopharmacology. He has published over 160 articles in peer-reviewed journals and numerous book chapters and edited three books on suicidal behaviour.

Whitney Cowell is a clinical psychology doctoral student at Palo Alto University and a law student at Golden Gate University School of Law. Her research interests are in the field of forensic psychology, and she is currently a research assistant in Dr. Wendy Packman's psychology and law research lab.

Mark Dechesne is Associate Professor at the Leiden University's Faculty of Governance and Global Affairs. He was awarded the praemium erasmianum studiorum (2002) for an exceptional dissertation in the social sciences and humanities and a VENI innovational incentive grant from NWO (2003) to expand his research. Dr. Dechesne explored themes related to terrorism at the DHS Center of Excellence NC-START (National Consortium for the Study of Terrorism and Responses to Terrorism) from 2006 to 2008 and at various NATO Centers of Excellence. He has served on the editorial boards of the Journal of Personality and Social Psychology, the European Journal of Social Psychology, Group Processes and Interpersonal Relations, and Advances in Political Psychology.

Guy Diamond Ph.D., is Professor Emeritus at the Pennsylvania School of Medicine and Associate Professor at Drexel University in the College of Nursing and Health Profession, with over 75 publications on psychotherapy outcome, process and dissemination research. At Drexel, he is the Director of Family Intervention Science (FIS). FIS was founded in 1996 and has received funding from National Institute of Mental Health (NIMH), Substance Abuse and Mental Health Services Administration (SAMSHA), Centers for Disease Control and Prevention (CDC), Center for Substance Abuse Treatment (CSAT) and several private foundations. At FIS, he has developed, tested and disseminated Attachment-Based Family Therapy (ABFT) for depressed and suicidal youth. ABFT now enjoys the distinction of being an empirically supported treatment on SAMHSA's NREPP web site. Based on this work, Dr Diamond recently received the distinguished research career award from the American Foundation for Suicide Prevention. Dr Diamond is also the lead developer of the Behavioural Health Screening tool, a comprehensive yet brief, web based tool for early identification of youth struggling with suicide and other behavioural health problems.

Yogesh Dwivedi received Ph.D. from Central Drug Research Institute, India. He did his postdoctoral training at the Illinois State Psychiatric Research Institute. He then joined University of Illinois at Chicago as Assistant Professor and reached to the rank of tenured Professor. He joined the Department of Psychiatry and Behavioural Neuroscience, University of Alabama at Birmingham in 2013 as Elesabeth Ridgely Shook Endowed Chair of Psychiatry. He directs Translational Research for UAB Mood Disorders Program. He is consistently funded by National Institute of Mental Health and American Foundation for Suicide Prevention. He has published more than 130 papers, several book chapters and has edited a book "The Neurobiological Basis of Suicide". He is in the editorial board of several scientific journals and has been invited worldwide for various talks and symposia.

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Yari Gvion Ph.D., is a Supervising Clinical Psychologist who has worked for many years in a psychiatric hospital and in private clinic and has an experience of 20 years with patients who engaged in suicide attempts. She teaches in the Clinical Division of the Psychology Departments at Bar-Ilan University and Tel Aviv–Yaffo College.

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Catherine Hausman is a second-year student in the clinical psychology Ph.D. program at Palo Alto University. She is a student in Dr. Bongar's Clinical Crises and Emergencies (CCER) Lab where she is the student lead on a project collaborating with the Stanford Emergency Department to develop strategies for implementing Dr. Bongar and colleagues' cultural model of suicide into suicide screening methods in the Emergency Department. Before beginning her Ph.D. studies, Catherine worked for two years as a research assistant under Herbert Hendin, M.D., at Suicide Prevention Initiatives (SPI) in Manhattan on a project developing a new psychotherapy approach for veterans with posttraumatic stress disorder (PTSD) at risk for suicide.

Charissa Hosseini Charissa Hosseini is in her 4th year of her Doctoral program at Palo Alto University, studying Clinical Psychology. Charissa's clinical experiences include facilitation of Seeking Safety support groups, Mentalizing Imagery Therapy support groups, administering assessment batteries at Stanford University, conducting psychotherapy at the Gronowski Center, the Institute on Aging, and Palo Alto VA Community Living Center. Charissa's current research interests include understanding the intersection of aging and trauma.

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Shailesh Jha worked as Senior Resident in the Department of Psychiatry at the Institute of Human Behaviour and Allied Sciences (IHBAS) in Delhi and has done his MD (Psychiatry) from All India Institute of Medical Sciences (AIIMS), Delhi. He is currently working as associate consultant at Indraprastha Apollo hospital and SMHS.

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Sarra Nazem is a Clinical Research Psychologist in the Department of Veterans Affairs and a Principal Investigator in the Rocky Mountain Mental Illness Research, Education and Clinical Center (MIRECC), which focuses on preventing suicide among military Veterans. Her research has focused on risk factors for suicidal behaviour, with a specific emphasis on factors associated with the acquired capability to enact lethal self-injury. In addition to her research, Dr. Nazem is a member of the Rocky Mountain MIRECC Suicide Prevention Consultation Service and provides supervision and mentorship to psychology interns and fellows. Dr. Nazem is an Assistant Professor in the Departments of Psychiatry and Physical Medicine and Rehabilitation at the University of Colorado School of Medicine.

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Jody Russon Ph.D., is the clinic and recruitment coordinator and a therapist for the Family Safety Net II (FSN II) project at Family Intervention Science (FIS). Jody is at a post-doc position in the College of Nursing and Health Professions at Drexel University. Jody's research interests are focused on intervention science—specifically adapting ABFT for adolescent girls with eating disorders and body image concerns. She has received advanced training in ABFT and Emotionally Focused Therapy (EFT) for couples.

Ayesha Saha is a graduate in Psychology from Lady Shri Ram College for Women (LSR), University of Delhi and has pursued her post-graduation in Psychology (Clinical) from Christ University, Bengaluru. With her keen interest in research, Ayesha has been a part of the project "Development of Multimedia Package for managing Children with Autism in Inclusive Classrooms" at NCERT, New Delhi. She is pursuing her Ph.D. in the area of Clinical Child Psychology. She is a Research Scholar at the Defence Institute of Psychological Research, Defence R&D Organization, Ministry of Defence, Government of India. With contributions in the major research project on "*Comprehensive Soldier Fitness Program: Resilience Building*", under the directions of Dr. Updesh Kumar, Scientist 'G', she has been able to extend her horizons in research related to Positive Psychology, Military Psychology and Suicidology. Nurturing her passion for research, Ayesha has presented papers on varied topics in national and international conferences and has publications in various peer reviewed journals.

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Martin M. Smith is a third-year doctoral candidate in the Department of Psychology at the University of Western Ontario. Since 2014, Martin has published 21 peer-reviewed journal article and three book chapters. Martin has also participated in six symposiums and presented over 20 posters. His research is nationally funded, and his work has garnered academic awards such as the Canadian Psychological Association's certificate of academic excellence and the Kenneth Deon Award for Best Master's Thesis. Martin is also an associate editor at *Personality and Individual Differences*.

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Kristen Vescera is a first-year graduate student at Palo Alto University. After traveling to Latin American countries for a year assisting high school and college students in volunteer projects across Costa Rica, Honduras, and Nicaragua, she developed an interest in working with adolescents. She moved to Denver, Colorado, and received a Masters of Arts degree from University of Colorado Denver in Counseling Psychology and Counselor Education with an emphasis in School Counseling. Following graduation, she enlisted in the United States Army Reserves as a Psychological Operations Specialist and immediately deployed to Afghanistan in support of a 9-month combat operation. Kristen is currently a reserve Psychological Operations Staff Sergeant and is interested in veteran studies.

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Jessica Walsh received her B.A. (Honors) in Social Studies from Harvard College in 2010 and her M.Sc. Psychology from the University of East London in 2013. In 2014 she began the Clinical Psychology Ph.D. Program at Palo Alto University, specializing in the Trauma Area of Emphasis. From 2010 to 2014, she was employed as a research assistant at the Tavistock Centre on the Child and Family Refugee Team, the London Veterans Assessment and Treatment Service, and at the Imperial College London's Neuroepidemiology and Aging Research Lab, London, England. Jessica is currently a psychology extern at the San Francisco Veterans Affair's Medical Center's PTSD team. Her research interests involve trauma, moral injury, and the psychology of terrorism amongst older adults.

Qingzhong Wang received his Ph.D. in Human Genetics in 2014 from the Bio-X, Shanghai Jiaotong University, China. At present, he is conducting his postdoctoral training under Dr. Yogesh Dwivedi in the Department of Psychiatry, University of Alabama at Birmingham, USA. He has published more than 20 peer-reviewed articles related to gene variants predisposing to schizophrenia and major depression disorder as well as treatment response.

Gil Zalsman is currently the CEO and Medical Director of Geha Mental Health Center near Tel Aviv in addition to being the director of the Adolescent Day Unit. He is also an Associate Professor in Psychiatry at Sackler School of Medicine and former director of psychiatry continuing education program. He also works as a counselor and chair of education at the executive committee of the European College of Neuropsychopharmacology (ECNP) and the president of the Israeli Society of Biological Psychiatry (ISBP). Graduating from the Hebrew University and Hadassah Medical School in Jerusalem, Israel, he also completed his psychiatry residency at the Geha Mental Health Center and Tel Aviv University and the Child Psychiatry residency at Geha and Yale Child Study Center in Yale University, Connecticut, USA with the late Professor Donald J Cohen. He completed a two years Post-Doctoral Fellowship with Professor J. John Mann, in the Division of Molecular Imaging and Neuropathology, Department of Psychiatry, Columbia University and New York State Psychiatric Institute, New York City, USA, where he holds an ongoing position as an Associate Research Scientist. He also holds a Master degree in health administration (MHA. summa cum laude) from Ben Gurion University, Israel. Professor Zalsman has published more than a 200 papers, of them more than 100 original papers, dozens of reviews, book chapters, two edited books and actively participated in more than a 200 scientific meetings. Professor Zalsman is the past board member and president of the child psychiatry section at the Association of European Psychiatry (EPA). He served as the deputy editor of the *Israel Journal of Psychiatry* and recently chaired the 14th European Symposium for Suicide and Suicidal Behaviour (ESSSB), held in Tel Aviv.

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Part I
Deconstructing the Phenomenon of Suicide

Chapter 1
Theorizing Suicide: Multiple Perspectives and Implications for Prevention

Swati Mukherjee and Updesh Kumar

Suicide is a universal human phenomenon and a universal cause of concern. According to an estimate, every year 5–12 lakh individuals die by suicide globally. There is a vast array of literature available on suicide, both scholarly and of the self-help kind, and researches abound in the area. Suicide as a phenomenon of scholarly interest is deeply intriguing as well as paradoxical, posing a challenge to conceptualizations that would lead to effective prevention and intervention strategies. Suicide is a personal act, yet the phenomenon of suicide is as pan-human as humanity itself. Scholars construe suicide not only as an act of individual annihilation, explained as a consequence of the personal anguish, perturbation, and pain, but also as a window that provides an opportunity to explain the phenomenon of suicide in humankind—as Shneidman (1993) puts it, "Suicidology, the study of human suicide, and a psychological autopsy (of a particular case) are identical in their goals: to nibble at the puzzle of human self-destruction". Any single theoretical conceptualization would prove insufficient to explain as multidimensional, multifaceted, and multidisciplinary phenomenon as suicide unless it is able to incorporate biological, sociological, psychological, epidemiological, and philosophical elements. Also, any theoretical understanding would prove futile unless it can be translated into effective prevention. This is not to negate the theoretical conceptualizations, but to emphasize that availability of multiple disciplinary perspectives on causal pathways adds on to the complexity of the field of suicidal

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studies. Present paper provides a conceptual overview of the scope and structure of suicide studies from a multidisciplinary perspective and discusses the implication for designing preventive strategies.

The chapter begins with an overview of epidemiology of suicide across the globe in order to bring out the ubiquity of the phenomenon across societies, across cultures and across time. Next it discusses about the need to acknowledge the complexities involved in defining the phenomenon of suicide beyond a simplistic notion of self-inflicted death, and highlights the pathways through which definitional issues determine the scope of prevention strategies and programmes. The next section describes multiple theoretical conceptualizations and perspectives explaining the phenomenon of suicide, and reflects upon the conceptualization of suicide in historical time-space utilizing it for building the case for situating suicide not merely as an individual act but as a complex behaviour reflecting prevalent socio-cultural norms in a given society at a particular point of time. The chapter ends with a reflection upon the need to evolve a broader and deeper conceptualization that would provide an overarching framework for basic as well as applied research in suicidal behaviour and its prevention, and allowing for incorporation of various specificities of individual behaviour at the same time acknowledging underlying generalities.

Suicide: Epidemiological Overview

Suicide is a major public health concern. Any effort towards designing effective prevention strategies needs to begin with a systematically organized knowledge base about prevalence of the phenomenon. Very few studies exist that have attempted to analyse worldwide epidemiological data on suicide (Varnik, 2012). The major reason for this deficiency is lack of availability of reliable data across nations, stemming from complexities involved in arriving at a universal definition of suicide to determining issues of intent, but also due to the fact that only a third of the world's nations have a reliable system of reporting cause-specific mortality data for health and policy-making purposes (Rao, Lopez, Yang, Begg, & Ma, 2005). The World Health Organisation has been maintaining suicide data across nations since 1950; however, the cross-national data is not consistent enough to allow suicide trend projections (Nock et al., 2008b). Though the number of countries reporting suicide statistics to the WHO has steadily increased over the years, there is a wide variation in the way different countries define and categorize suicide, with certain nations preferring to categorize it as a social or political issue rather than a health concern. Lack of worldwide data and variations in reporting make it a difficult task to estimate global trends in suicide and to make definitive predictions regarding future propensities. Yet, WHO reported an analysis of nationally reported mortality data for the year 2008 in 2011 (WHO, 2011) that put the estimated deaths resulting from self-inflicted intentional injury (i.e. suicide) to be 7 lakh 82 thousand, that constituted 1.4% of total world mortality. An analysis of region-wise trends

reflected lowest proportion of suicidal deaths within total mortality in the African region (0.5%) and the highest in the southeast region (1.9%) of the world. Worldwide suicide rate was estimated at 11.6 per lakh of population, with highest being 15.6 in southeast Asia and the lowest in the Eastern Mediterranean region at 5.6. The World Health Organisation also analysed the latest data available for different countries starting from the earliest data of 1978 for Honduras to the latest available for many European and American nations for the year 2009. Highest rate of suicide (34.1 per one lakh of population) was reported for Lithuania in the year 2009. Varnik (2012) reports that Switzerland was the country with highest suicide rates in the 1930s and 1940s, with Japan having the highest rates in the 1950, which was again displaced by Hungary for next two decades, before being taken over by Lithuania for next two decades. He also observes that Sri Lanka surpassed the rate of 47 suicides per lakh of population in the mid-1990s (Ratnayeke, 1998), though the WHO data does not reflect this. Also, the suicide rate in Sri Lanka has been observed to be falling steadily to come down to 24 per lakh of population in 2005 (Gunnell et al., 2007; Pearson, Anthony, & Buckley, 2010). Varnik (2012) also takes note of the falling suicide rates in the welfare states of the Western Europe and rise in suicide rates in the developing parts of the world, especially South Korea that has registered a major increase in suicide rates in the last decade. It has been suggested that this increase stems from the economic recession of 1997–1998 and population cohort effects (Kwon, Chun & Cho, 2009). Though comparing nations for suicide rates in different years may not be absolutely correct, yet such comparisons serve to highlight the impact of socio-historical circumstances and economic changes on suicide propensities among the affected populations. Also, such changes create opportunities for conducting epidemiological experiments based on comparison of suicide rates before and after certain changes occur in a society.

Another major focus area of epidemiological studies on suicide has been on gender-based comparisons across countries. Male–female ratio for suicide has always been skewed for the world as a whole with WHO reporting an overall ratio of 1.8 based on 2008 data. Eastern Europe has the highest ratio of 4.0, while the Eastern Mediterranean region has the lowest ratio of 1.1. Consistently higher rates of suicidal deaths have been reported for men as compared to women, with the exception of China which reports a higher rate of suicides among women to the ratio of 0.9:1. Similarly, the male–female ratio for suicidal deaths in India has also been on the lower side (1.3). The cause for the same has been speculated to be lower social status accorded to women in these countries and availability/use of means with higher lethality (Nock et al., 2008a).

Nock et al. (2008b) have also reviewed the prevalence of suicidal behaviours (suicide ideation, suicide plan and suicide attempt) cross-nationally and found a wide variation in rates. However, as they remark, the variability is also attributable to differences in measurement methods across studies. Three recent large-scale studies have tried to overcome this gap using consistent measurement methods cross-nationally. These are as follows—(1) the WHO/EURO Multicentre Study on Parasuicide in 15 European countries; (2) the WHO Multisite Intervention Study on Suicidal Behaviours in eight countries; and (3) the WHO World Mental Health

Survey, which provides data on the epidemiology of suicidal behaviours in 28 countries in the Americas, Europe, Asia, Africa, the Middle East, and the Pacific. Cross-national variations in suicidal behaviours were confirmed by all the three studies. However, the prevalence of suicidal behaviour was not found to mirror the prevalence of suicidal deaths, nor was any systematic difference found in prevalence of suicidal behaviour in developed and developing countries (Nock et al., 2008a). At the same, it was found that the timing and transition in suicidal behaviours (i.e. from ideation to plan to attempt) remained consistent cross-nationally with transition from ideation to attempt occurring during the first year more than sixty percent of the times (Kessler, Borges, & Walters, 1999; Nock et al., 2008b).

Suicide: Definitional Issues

More than three decades ago while initiating a deliberation on the need to review the 'definition of suicide' in his classic text bearing the same title Shneidman remarked upon the need for "radical reconceptualization of the phenomenon of suicide" (Shneidman, 1985, p. 4). The need persists even today. It is known and accepted that definition of suicide is more complex than the intuitively understood 'killing oneself' conveys, and at the same time it is also accepted that it is difficult to "construct universally unambiguous criteria to comprehensively characterize suicidal behaviours" (De Leo, Burgis, Bertolote, Kerkhof, & Bille-Brahe, 2006, p. 5). Suicide is a core societal issue and experts in varied domains within society are concerned with the phenomenon in their own right, whether in research, clinical practice, law enforcement or policy formulation. It is imperative to arrive at certain level of common understanding regarding the definition and terminology used in order to attain conceptual clarity regarding suicide and to make it possible to resolve real-world practical difficulties that stem from the ambiguity of definitions and conceptualizations. The need for a universal definition and a nomenclature generalizable across domains has been emphasized upon by many scholars (e.g. Silvermann, 2006). Advantages accrued by achieving this have also been expounded upon by many scholars. Rudd (2000) for example details about the benefits of having an unambiguous definition in the clinical settings, primarily reflecting in clarity, precision and consistency of assessment and treatment across time and across patients, improved communication and clarity in documentation, elimination of inappropriate terminology, and recognition of complexities involved in determining explicit or implicit suicide intent. In the context of research lack of a common definition makes comparison across populations an impossible task. In the absence of an agreed upon terminology even prevalence and epidemiology of suicidal behaviours cannot be compared across different research groups (De Leo et al., 2006).

Suicide is a social issue, a public health concern, or a major mental health issue from the perspective of those who are entrusted with the responsibility of preventing it. Even within the fraternity of helping professionals suicide may be

defined differently depending on the purpose of the definition—medical, legal, or administrative. Despite suicide being a universal cause of human concern, it is a matter of perspective that provides a particular definition to an act of self-inflicted violence. Silverman (2006) provides a succinct summary of fifteen frequently referred definitions of suicide, ranging from Durkheim's (1897/1951) classic definition of suicide as "All cases of death resulting directly or indirectly from a positive or negative act of the victim himself, which he knows will produce this result" to the more contemporary conceptualizations like the one provided by the World Health Organisation (1998) defining suicide as "The act of killing oneself deliberately initiated and performed by the person concerned in the full knowledge or expectation of its fatal outcome" or an elaborate description of suicide given by DeLeo and colleagues (De Leo, Burgis, Bertolote, Kerkhof, & Bille-Brahe, 2004) as "An act with a fatal outcome which the deceased, knowing or expecting a potentially fatal outcome, has initiated and carried out with the purpose of bringing about wanted changes."

The core of these definitions is essentially constructed by one of the three perspectives—(a) a deliberate act of self-destruction that results in death; (b) a conscious self-directed act with the intent to die; or (c) a wilful self-inflicted life-threatening act resulting in death (Marusic, 2004; Retterstol, 1993). Silverman (2006) posits the differences in perspective in these definitions stem from variations in disciplinary orientations, and differences in values and belief systems of the creators. Four key aspects inherent in any definition of suicide have been identified —outcome, agency, intention, and awareness (De Leo et al., 2004; Farberow, 1980; Maris, Berman, & Silverman, 2000)—and these are used to determine what constitutes suicide.

The most difficult to determine among these is the intention of the individual. Intent might be implicit in the behaviour or might have been expressed explicitly by the individual. However, perceptions of intent are often confounded by the individual's denial, minimization or inflation of their intent to die (Wagner, Wong, & Jobes, 2002). Many scholars recommend correlating the intent to die with the lethality of the methods used for causing self-harm, while others feel that intent is more important than lethality in determining if a particular behavioural incidence constituted suicide (e.g. Harriss, Hawton, & Zahl, 2005). On the whole, this leads to a lot of subjectivity and inferences on the part of the clinician or the medical staff responsible for classification based on their knowledge and previous experience.

As Silverman (2006) discusses, the issues of intent and lethality of methods are also important for determining the definition of attempted suicide, as for most cases of self-reported suicide attempt the lethality of methods used has not been found commensurate with an intent to die and hence it has been suggested that most such attempts are 'cry for help' rather than attempted suicide (Meehan, Lamb, Saltzman, & O'Carroll, 1992). The term suicide attempt has been considered inherently ambiguous (Silverman, 2006) not only when reported by the individual, but low agreement has been reported even among experts who were provided with case vignettes and asked whether the behaviour in question constituted suicide attempt or not (Wagner et al., 2002). The alternative terms being used in place of the term

'attempted suicide' are 'deliberate self-harm', 'non-fatal suicidal behaviour', or 'parasuicide'. These varied terms are used to denote non-fatal self-injurious behaviour without taking into consideration the question of intent, and end up as the core reason for introducing unaccounted heterogeneity in research data. Besides the variations in the definitions of these two core terms, Silverman (2006) enlists and discusses the variations prevalent in the use of synonyms and euphemisms for key terms like 'suicide ideation', 'suicide threat', 'suicidal attempt', 'suicidality', and 'suicide' itself; also enlisted are the moderators and qualifiers, the terms that are used to denote aspects of timing, duration, frequency, intensity, quality, dosage, context, and setting that further confound and add to the ambiguity of the key terms.

Besides causing problems in research and clinical practice the inconsistencies in definitions and terminology also lead to problems in public health (De Leo et al., 2006). Problems in public health evidently pertain to certification of cause of death and calculation of mortality rates, as suicide is often used as a residual category after ruling out natural, accidental, and homicidal causes. Yet when applied to the cases of non-fatal self-injury the inconsistencies of definition become a major cause of ambiguity in estimating prevalence and designing preventive strategies. In most countries and circumstances in the lack of specific guidelines for classification it is the emergency room medical staff that ends up classifying the cases of suicide, and such subjective judgements get translated into national data bases on suicide.

Whether a particular behaviour constitutes suicide or rather what are the essential components that lead to a particular behaviour being categorized as suicide is often influenced by the socio-cultural ethos and historical circumstances of the time in which the behaviour occurs.

Suicide: Contextual Factors

Effectiveness of theorizations ostensibly rests on an understanding of the etymology of the concept, as etymology not only describes the linguistic origins but also reflect upon the socio-historical circumstances that necessitated the evolution of the concept. First reference to the word suicide is said to have been made by Sir Thomas Browne (1605–1682) in the year 1642. The word 'suicide' is composed of two Latin terms 'sui' meaning self and 'caedes' meaning death. The term for intentionally killing oneself came into being at a time when Europe was in the throes of religious reforms, individual life belonged not to the individual but to the king and the God, and hence the individual had no right to extinguish his/her own life. Suicide was considered a sin and a crime, for which stringent punishments were prescribed including defilement of the individual's body and confiscation of property.

An interesting and convenient way to understand the variations in understanding of suicide through the ages was devised by Shneidman, the father of suicidology who traced the etymology of the word suicide and its evolution through 220 years by reviewing the way it was portrayed in the Encyclopaedia Britannica since the

publication of its second edition in 1777 (in which the word suicide appeared for the first time) till the year 1997. A brief overview of the article that was published in the Archives of Suicide Research in 1998 highlights not only the variations in definitions of the term suicide, but also brings to the fore variations of perspective brought in by socio-historical processes and disciplinary orientations of the respective authors. Shneidman (1998) summarizes the entry for 'suicide' in the second edition of encyclopaedia Britannica (1777–1784) entitled 'Self-murder' and brings out the moralistic tone with which the act of suicide was considered a 'pretended heroism, but real cowardice' and a 'double offence' against the God and the king, and ranked "among the highest crimes by the law making it a peculiar species of felony, a felony committed on one's self". Following this the third edition (1780–1797) through the seventh edition of the Encyclopaedia Britannica (1852) continued to treat suicide as a crime against king and the God, but also provided some reflections upon its prevalence among different populations and speculated upon possible causes. Yet, it showed some indications of changing times in the concluding statement that accepts suicide as 'a common and increasing evil' that cannot be effectively prevented through the use of punishments.

The eighth edition, as Shneidman remarks, is notable for the inclusion of two of the prominent intellectuals of the nineteenth-century England, whose comments on the issue of suicide show glimpses of current debates in the field. Henry Thomas Buckle (1821–1862), chess prodigy ,and English historian believed suicide to be "merely the product of the general condition of society, and that the individual only carries into effect what is a necessary consequence of preceding circumstance" and thus believed that it was possible to predict suicide with a small limit of error if social circumstances are known. The other quotation included in this edition is from John Stuart Mill (1806–1873) a major proponent of individual liberty who considered the individual fully accountable for all his actions and believed that any individual engaging in risky behaviour "unless he is a child, or delirious or in some state of excitement of absorption incompatible with the full use of the reflecting faculty, he ought, I conceive, be only warned of the danger, not forcibly prevented from exposing himself to it". Both the scholars set the tone for the coming editions that are much more statistically oriented, data based, and tolerant of the phenomenon of suicide. The ninth edition (1875–1889) demarcated the statistical and demographic approach to the study of suicide, and the forthcoming editions essentially maintained the trend till the fourteenth edition (1929–1940) that saw a discussion about the impact of war on suicide statistics. It was not until the fourteenth edition published in 1973 that a psychological perspective found a place in the Encyclopaedia Britannica. The 1973 article on suicide was written by Shneidman and provided a comprehensive analysis of factors and dynamics of suicide. The article included sections on definition, complexities and difficulties with definitions, the word itself, major threads of study, and psychological characteristics of suicide, attempted suicide, partial death and substitutes for suicide, suicide and religion, suicide and the law, some oddities of suicide, myths about suicide, romantic suicide and the artist, statistics on suicide, suicide notes, and prevention–intervention–postvention of suicide. In discussing the locus of blame

for suicide Shneidman traces the history beginning from early Christians who considered suicide a grievous sin; to the enlightenment era scholars like Rousseau (1712–1778), Hume (1711–1776), and Durkheim (1858–1917) who transferred the locus of blame from man to society and tried to decriminalize suicide by arguing that it was neither sin nor crime; to Freud (1856–1939) who put the locus of action in the unconscious mind; and finally leading to the modern understanding of suicide as caused by multiple factors and complex interplay of individual level aetiology with the societal context and a concern for the survivor–victim. Another major factor highlighted by Shneidman's article is the need to recognize and alleviate the 'psychache', the term coined by Shneidman to denote intolerable emotions, unbearable mental pain, and insufferable anguish experienced by individual that leads up to suicide. Any effort for alleviating the suicidal crisis needs to alleviate this psychache.

Besides the Western (predominantly European) conceptualization of suicide through the ages, it is also interesting to briefly trace the same in other cultural contexts. This also helps in highlighting the need to include and specify contextual factors while delineating the criteria for categorizing behaviours as suicide, and incorporate the understanding thus gained into designing prevention strategies.

Perspectives and opinions towards the act of self-killing are determined to a large extent by the specific socio-historic circumstances of a culture, values expounded by it, religious and spiritual systems of organizing life of its members, and perceptions about meaning of human life. Dilemmas regarding the issue of taking one's own life have centred upon the core questions of morality and rationality of suicide, i.e. upon the two core questions—first if suicide would be a rational act if ever and under what circumstances; and second, if suicide would be a morally legitimate or a morally acceptable thing to do, and under what circumstances (Kagan, 2007). Different cultural conceptualizations have existed regarding the two questions and accordingly suicide has been proscribed or prescribed under specific circumstances and during specific time periods.

Most of the ancient cultures while prohibiting suicide on moral and religious grounds also allowed or even prescribed suicide under certain specific conditions and after fulfilling certain specified norms. Hindu scriptures, for example, especially of the later Vedic period allow for taking one's own life and prescribe conditions and methods for the same. However, the right was given only to those persons who had attained old age and acquired high ascetic power (Thakur, 1963). Similar position is taken by the Jain religious scriptures that allow for 'sallekhana' (gradual extinguishing of life through giving up of food and water) for the individuals who have attained high spiritual knowledge (Tukol, 1976). Besides giving up of life for religious reasons, many ancient societies also explicitly or implicitly encouraged suicide as a punishment for moral wrongdoings or for preserving one's honour in the face of imminent defeat or disgrace. Instances of suicide also find mention in Indian epics of Ramayana and Mahabharata. Instances of 'Sati' (the wife immolating herself on the funeral pyre of the deceased husband) and 'Jauhar' (women choosing to kill themselves by jumping into fire rather than falling into the hands of invading armies) find mention in history till recent years. It appears that the

collectivist cultural ethos of the Indian society permitted and extolled the virtues of 'self-sacrifice' for attaining group goals or in pursuance of social norms, however, condemned and prohibited suicide committed for individualistic reasons.

Suicide: Disciplinary Variations

The issue of comprehension and prevention of suicide concerns multiple actors in the society, and accordingly there are multiple perspectives involved. As Shneidman (1993) remarks, "Suicide is a complex malaise" and has engrossed the interest of multiple disciplines. It is useful to dwell upon the varied approaches as "no one approach holds the answer: It's all that and much more" (Shneidman, 1993). Present section provides an overview of the sociological and psychological theoretical perspectives on suicide.

Sociological perspectives As an object of sociological analysis suicide has held research interest for long, especially until the last decades of the twentieth century (Wray, Colen, & Pescosolido, 2011), when the focus shifted to more individualistic explanations emerging from biomedical, psychiatric, and psychological perspectives. A major landmark in sociological work on suicide has been Durkheim's (2006 [1897]) 'On suicide' and Wray, Colen, and Pescosolido (2011) utilize it for demarcating three genres of sociological theorizing on suicide, i.e. Pre-Durkheimian, Durkheimian, and Post-Durkheimian. Wray et al. (2011) put forth that Durkheim built his work on the analytical premises provided by many late nineteenth-century thinkers like Quetelet and Morselli, who were engaged in identifying the reasons behind the apparent increase in suicide rates with the disintegration of the agrarian society in the wake of modernity based upon inductive analysis of large body of suicide statistics. The regularity and stability of nationwide suicide rates across time and the rising rate of suicides in modern era convinced these scholars to look beyond the prevalent conceptualizations of suicide as a decision made by a free-willed individual and find systemic causes for it. Scholars like Masaryk (1970 [1881]) and other moral statisticians focused on attributing the cause of rising suicides to the advent of modern ways of living. Durkheim even while accepting the influence of modernity on rising suicide rates emphasized on the need for deeper analysis and rejecting many scientific and lay explanations prevalent at the time (imitation, climate, temperature, and even mental illness) came up with a fourfold typology of suicide derived from the intersection of two axes—integration and regulation. Describing the nature and influence of social integration, Durkheim concluded that the suicide rates vary inversely in proportion to the degree of integration a social group offers to its members, and also that too strong an integration with the group leads to a rise in group suicide rates as the individuals value the group goals more than they value their individual lives. Similarly, Durkheim opined that it is essential that the individual desires and expectations are regulated and monitored by the social ties in order to keep them under check, and that both under- and over-regulations result in increase in suicide rates. It is in the

'U'-shaped interaction of the social forces of integration and regulation that Durkheim placed four types of suicide—Egoistic suicide (occurring when integration is low), Altruistic suicide (occurring when integration is high), Anomic suicide (occurring when regulation is low), and Fatalistic suicide (occurring when regulation is high). Suicide rates diminish only when the forces of regulation and integration are in balance.

The post-Durkheimian era continued to consider social integration as a core concept for explaining suicide. Statistical data was blended with social observations of the geography of communities and neighbourhoods for understanding how individuals were influenced by their social environments (Cavan, 1928; Porterfield, 1949; Sainsbury, 1955; Schmid, 1928). Wray et al. (2011) enlist three major stances on the sociological understanding of suicide that emerged in the second half of the twentieth century. The first was the frustration-aggression model proposed by Henry and Short (1954) that construed homicide and suicide as two sides of the same coin. According to them aggression is a direct outcome of frustration, and whom it is attributed to depends on the social status of the individual. With high-status groups blaming themselves and the low-status groups blaming others for their misery, they hypothesized a higher rate of suicide in high-status groups and a high rate of homicide in low-status groups. The second theoretical approach to understanding suicide was propagated by Gibbs and Martin (1964) by focusing on status integration, wherein status was defined in terms of age, sex, occupation, and marital status. They proposed that higher rates of irresolvable role conflicts in a society translated into higher rates of suicide. The third major stance was taken by Douglas (1967) based upon a stringent theoretical critique of Durkheim and other researches on suicide in general, that they failed to take into consideration the social and cultural meanings of suicide, and also that they failed to take into consideration the variations in the definition of suicide by the people who are responsible for categorizing a particular instance of death as suicide. Douglas essentially critiqued the quantitative approach to suicide, rejected the Durkheimian typologies, and emphasized upon understanding the social meaning of suicide. Besides these three perspectives other approaches to suicide pursued diverse paths (e.g. Breault, 1986; Maris, 1981; Phillips, 1974, 1979; Stack, 1983) with a few continuing to follow the Durkheimian paradigm and others amending and critiquing the same.

As a discipline sociology is more concerned with the social structure and processes rather than the behaviour per se, and in doing so it diverges sharply from other disciplines in their theoretical conceptualizations of suicide, which in comparison are focused on individual level variables in the form of emotional, genetic, or neurological factors responsible for suicidal behaviours.

Psychological theories It has been said that suicide is the cause of death most directly affected by psychological factors (O'Connor & Nock, 2014). The claim might be a contested one, yet the professionals within the discipline of psychology have put in enormous research efforts for gaining an understanding of the dynamics of suicide and for devising effective prevention strategies. There is an abundance of

theoretical positions and perspectives regarding the aetiology of suicide, and an almost exhaustive enlisting of risk and protective factors has been accomplished over the years. Psychological approaches to suicide include clinical and psychiatric perspectives and neuro-psychological perspectives. Though all these approaches vary in the factors they emphasize, they are unanimous about placing emphasis upon individual case histories and individual level factors over macro-statistical approaches. An overview of some major psychological approaches would be apt here.

The nascent science of psychology in early twentieth century brought forward the first individual level theories of suicide. Attributing the internal psychic process of the individual for his suicidal behaviours, Freud (1920) postulated that the inherent 'Death instinct' within an individual is responsible for violent behaviours that are either externalized as anger or internalized as suicidal behaviours, depression, melancholy, etc. The motivation for suicide, according to Freud, is rooted in the unconscious processes giving rise to guilt and self-punishment. The basic conceptualization of suicide by Freud was relied upon and expanded by Menninger (1938) and Zilboorg (1936). Dismissive of efficacy of statistical approaches and trained in the psychoanalytic tradition the two scholars emphasized upon the need to expand the definition of suicide to include a wide array of behaviours ranging from suicide attempts, suicidal thoughts, and self-harm behaviours. Menninger, for example, provided a categorization of suicidal behaviours that included behaviours like self-starvation, dehydration and the refusal of medical treatment (organic), accidents, dangerous sports and smoking (chronic suicide), and self-mutilation (partial and focal suicide). Menninger also distinguished three elements underlying suicide—the wish to kill, the wish to be killed, and the wish to die. He postulated that suicide is a manifestation of these three self-destructive tendencies, with the wish to kill stemming from the aggressive element, and the wish to be killed stemming from the submissive element.

Zilboorg (1936), though a psychoanalyst, was opposed to the idea of death instinct as having the power to explain suicide. Chairing a committee mandated to study suicide among children and primitive tribes immediately before the United States of America joined the Second World War, he explained the phenomenon of suicide in terms of a biological instinct that is universal across species and across levels of civilization. He emphasized the need for gaining an understanding of the dynamic motivational factors at play behind suicidal behaviour. Using the analogy of bodily death in response to grievous injury, he posited that the mind, when in pain upon the inability to master the reality projects delusions that lead to the paradoxical act of self-imposed death in order to save itself. The psychological understanding of suicide in the era was primarily based upon the psychoanalytic approach, though the scholars (e.g. Zilboorg, 1939, 1941) called for a synthesis of psychological motivations for suicide with social conditions conducive of suicide, and also for closer cooperation between psychoanalysis and biology for arriving at a better understanding of suicide. Though criticized for limited empirical validity,

especially of the core psychoanalytic concept of the innate death instinct, the early psychodynamic approaches to suicide served the important purpose of bringing in a shift of perspective about suicide as a moral, spiritual, philosophical, or legal problem to suicide as a clinical concern (Ellis, 2001).

Beginning with the earlier psychological approaches that exclusively focused on the individual's intra-psychic factors the current research and theorization has progressively involved a broader framework that includes sociogenic and ecological factors as well as an increasingly refined focus on the cognitive process of the individual that lead to suicide vulnerability. There are multiplicity of approaches and theorizations to understanding the aetiology and prevention of suicide today. Within these the pioneering work by the renowned suicidologist Edwin Shneidman (1918–2009) deserves special attention. Leenars (2010) divides Shneidman's voluminous work on suicide into five categories—Definitional and Theoretical, Suicide Notes, Administrative and Programmatic, Clinical and Community, and Psychological Autopsy and Postvention—and emphasizes that at the core of Shneidman's conceptualization of suicide is psychological pain or as he neologized it 'Psychache'. All affective states like rage, depression, hostility, shame, guilt, hopelessness, etc. gain their potency to lead an individual towards suicide only if they cause psychache. Since individuals differ in their pain endurance thresholds not everyone experiences suicidality. Shneidman defines suicide using ten assertions or commonalities. Leenars (1999, p. 225) has listed these commonalities that define the essence of suicidal behaviour in terms of its purpose, goal, stimulus, stressor, underlying emotion, cognitive state, perceptual state, action, interpersonal act, and consistency.

Shneidman's extensive work on various dimensions of suicide has influenced many contemporary theories of suicide, for example, the escape theory (Baumeister, 1990) and the cry of pain model (Williams, 1997).

There have been many theoretical perspectives that conceptualize suicide as escape (e.g. Menninger's (1938) wish to die, Henderson and Williams's (1978) avoidance factor, Baechler's (1979) escapist type of suicide, Shneidman's (1968) harm avoidance type of suicide, and Mintz's (1968) desire to escape from real or anticipated pain type). Among these Baumeister's theorization is considered the most comprehensive. He theorized suicide as an escape from self, i.e. as an escape from an aversive situation and unbearable state of mind and described six steps leading to suicidality, as follows:

1. Discrepancy between expected and perceived standards,
2. Internal attribution and self-blame,
3. Distorted self-awareness and inability to forgive oneself for failing to meet the idealistic standards,
4. Acute negative emotionality,
5. Attempted cognitive deconstruction by focusing only on the concrete and targeting immediate goals, and
6. Reduced behavioural inhibitions that make suicide and suicidal behaviours possible.

Baumeister's conceptualizations were expanded by Williams (1997) who combined evolutionary approaches with psychological approaches asserting that suicide among humans is akin to the 'arrested flight' reported among certain animal species and serves as an escape from a humiliation or rejection that the individual feels insurmountable otherwise. Another escape model has been given by Chandler (Ball & Chandler, 1989; Chandler, 1994; Chandler & Proulx, 2006) propounding that suicide can occur as a result of loss of sense of self, especially in the adolescence. According to him suicide becomes a probability when the individuals lose sense of connectedness to their future selves, and are confronted with intolerable hardships when in this state (Lester, 2013).

Another important genre of theorization is provided by the cognitive psychologists. Cognitive theories propose it is not only the belief about self, but disruption in all the three components of cognitive triad, viz. Beliefs about self, other, and future that makes an individual suicidal. The disruption is caused by faulty and restricted cognitive processes and maladaptive cognitive schemas (Wenzel, Brown, & Beck, 2009) consisting of biases in attention, information processing, and memory, that lead to hopelessness and depression (Beck, Brown, Berchick, Stewart, & Steer, 1990). A comprehensive cognitive model proposed by Wenzel and Beck (2008) postulates that suicide is a result of interaction between dispositional vulnerability factors (such as impulsivity and aggression, problem-solving deficits, an over-general memory style, maladaptive cognitive style, and other personality vulnerabilities), cognitive processes associated with psychiatric disturbance, and cognitive processes associated with suicidal acts. Cognitive theories emphasize that suicide is a result of the interaction between vulnerability factors and life stressors.

On similar lines the stress–diathesis theories of suicide propose that suicidal behaviour is a result of stress factors acting as a trigger on vulnerability factors that have predisposed an individual for suicide. Diathesis–stress models are comprehensive models that take into account the genetic and biological factors that define individual predispositions along with psychological and social factors that act as stressors upon the vulnerable individual. There have been many theories based upon the stress diathesis model that suggest different contexts for suicidal vulnerability. Schotte and Clum (1982, 1987), for example, suggested that cognitive rigidity or the inability to contemplate about alternative solutions to a problem make an individual predisposed for hopelessness, which in turn increases his vulnerability for suicidal behaviour. Voros (2010) integrates various predisposing factors and stressors into a comprehensive stress diathesis model. He postulates that biological, psychological, and social factors function on dual axis—both as diatheses and as stressor. The matrix emerging out of the interaction of these factors interacting along the two axes determines suicide vulnerability of an individual. Biological factors such as depression in the family, family history of suicide, history of mental disorders, serotonin system dysfunction; psychological factors such as family environment, personality disorders, developmental disorders, childhood abuse; and social factors like the larger socio-cultural environment, social learning make the individual vulnerable. Stressors also act on these three levels. Biological

stressors such as onset of major illnesses, episodes of mental disorders, medication, drug and alcohol abuse; psychological stressors like negative life events, loss of loved ones, grief; and social factors like gross change in social environment, migration, immigration, war and war like crises, loss of livelihood or financial losses when faced by a vulnerable individual enhance the probability of suicidal behaviour.

Most of the contemporary models conceptualize suicide as a complex and multidimensional behaviour and in addition to theorizing about suicide as a construct also aim at predicting suicide vulnerability. The interpersonal theory of suicide (IPTS-Joiner, 2005), for example, postulates that probability of engaging in serious suicidal behaviour can be predicted by gauging an individual's desire to die and the capability to act on that desire. It proposes that the desire to die stems from a combination of 'perceived burdensomeness' and 'thwarted belongingness'—two components that lead to the belief that one's life is not valued by others and one should better die. At the same time, this wish to die is not translated into suicidal behaviour unless the individual acquires fearlessness for pain, injury, and death, or what Joiner calls 'acquired capability for suicide'. Though the theory provides a useful framework for theorizing suicide and determining suicidal vulnerability, it falls short in incorporating many influencing factors. Another more recent and more comprehensive theorization has been propounded by O'Connor (2011)—the Integrated Motivational-Volitional Model of Suicide Behaviour (IMV) that describes three stages of suicidality. First stage is the pre-motivational stage marked by background factors and triggering events (diathesis and stressors); the second stage is the motivational stage marked by suicidal thoughts and formation of intent; and the third stage is the volitional stage marked by behavioural action and engaging in serious suicidal behaviours. The model enlists multiple factors within each stage based upon the research insights and clinical experiences gained through earlier theoretical models. It posits that suicidal ideation and intent arise in the motivational stage when individual is faced with defeat and humiliation and feels entrapped in a stressful situation from which no escape is foreseeable. The progress from pre-motivational to motivational stage (and within motivational stage from feelings of humiliation and entrapment to suicidal ideation) and further towards volitional stage is moderated by motivational and volitional moderators that can influence the progression of suicidal behaviour.

It is evident that the psychological theories have become increasingly complex and multidimensional in theorizing suicide. Important implications for suicide prevention have been derived from these conceptualizations. Also, the psychological theorizations have tended to gain from advancements in genetics and neurological sciences that have added on to the understanding of biological predispositions and enhanced the probability of nuanced clinical predictions and interventions.

Managing Suicide: Prevention and Intervention Strategies

A progressive enhancement of knowledge of the dynamics of suicidal behaviour is of no use unless it gets translated into effective prevention and intervention strategies. As Silverman (1996) says, "Inasmuch as most behavioural disorders are multi-causal in aetiology, so must preventive interventions be multifocal in terms of the behaviours and etiological agents they are designed to target", a multifocal and multi-pronged approach attuned to the socio-cultural environment is absolutely essential for designing a preventive strategy. Different models for suicide prevention have been suggested by different scholars in different environments based upon an assessment of protective and risk factors.

Nordentoft (2007) suggests that the model of primary, secondary, and tertiary prevention often utilized for disease prevention can be used for prevention of suicidal behaviours. Primary prevention includes general prevention strategies targeted at populations who are not at risk of suicidal behaviours and aims at improving the capabilities of the individual in dealing with stress and crisis. Secondary prevention focuses on screening the vulnerable and at-risk individuals and groups. Based on such screening it provides for interventions in the early stages of suicidal behaviour. Tertiary prevention is focused on providing specific and targeted intervention to the individuals who have been identified as vulnerable, or have exhibited suicidal behaviours. Silverman (1996) considers tertiary prevention as intervention after first suicide attempt. Aim of tertiary prevention is monitoring, relapse prevention, and follow up. A similar prevention model proposed by Gordon (1983) classifies the three stages as universal, specific, and indicated preventive strategies, and provides progressively intense and specific strategies. Though it is appealing to simplify the suicidal process and make it fit within such linear conceptualizations, the dynamics of suicidal behaviour are multifocal and have multiple pathways.

Nordentoft (2007) provides another useful categorization that can be used towards designing preventive strategies. Besides the individual level preventive strategies focused on the vulnerable or at-risk individuals, situational preventions are also warranted for effective prevention of suicidal behaviours. Situational preventive strategies would include initiatives like restricting access to means of suicide, restricting ease of access to information regarding suicide methods, securing high risk places, etc. An effective use of situational preventive strategies demands and awareness and analysis of situations and events that are likely to increase vulnerability for specific populations at specific times. A situational approach requires making provision for focused support to vulnerable individuals/groups based upon analysis of risk and protective factors.

An important factor for any prevention strategies to be effective is cultural sensitivity of the approach. Developing a cultural theory and model of suicide Chu, Goldblum, Floyd, and Bongar (2010) identified four culturally relevant themes that are of significance in suicide assessment and prevention:

(i) *Cultural sanctions and meanings*, through which an individual imbibes specific values regarding acceptability of suicide, and which lead to development of attitudes towards certain life circumstances or situations as acceptable of shameful, thus precipitating risk. Cultural meaning determines how life stressors are perceived by an individual and whether suicidal thoughts and intent are likely to be converted into suicide attempt.
(ii) *Idioms of distress* prevalent in a particular culture that determines the probability of risk being communicated and the modalities of communication. Such cultural specificities also influence to whom suicidal intent is expressed and how, and the manner in which a suicide attempt is manifested.
(iii) *Minority stress* refers to the factors of distress that a member of a given community faces because of minority status, social inequality, or maltreatment.
(iv) *Social discord* in social and community support acts as a precipitating factor. Conflict and estrangement affect the individual and enhance vulnerability in proportion to the values attached to community and social support systems.

Any prevention strategy that fails to consider the cultural factors in addition to individual level risk and protective factors is not likely to result in effective prevention. It might be emphasized that a holistic approach to suicide prevention must follow a three-pronged approach of considering individual level factors, social and familial factors, and cultural factors. An effective suicide prevention programme, thus, is a result of a broadened perspective that utilizes multiple theoretical propositions in consonance with a realistic assessment of larger socio-cultural factors and provides for strategies that transcend disciplinary boundaries and limitations placed by narrowed vision.

Conclusion

Suicide has intrigued scholars and philosophers since time immemorial. There are a plethora of explanations and interventions available, including folk theories and traditional wisdom tales. Though killing oneself has rarely been approved by any community, historically there have been societies and cultures where suicide has been valorized, even glorified. Even in the modern times there are instances where suicide is valued as a desirable behaviour under certain circumstances. However, psychology as a behavioural science shuns value judgements and conceptualizes suicide as complex human behaviour that warrants a multi-pronged approach for understanding the dynamics involved, and focuses on translating these into preventive strategies. The varied disciplinary perspectives emphasizing on different aspects of the phenomenon need to be incorporated in arriving at a holistic understanding of aetiology and progression of suicidal behaviour. Also, it is important to arrive at a common platform regarding issues of definition and conceptualization across disciplines, across cultures, and across nations in order to arrive at a global standard for prevention.

References

Baechler, J. (1979). *Suicides*. New York: Basic books.

Ball, L., & Chandler, M. (1989). Identity formation in suicidal and non-suicidal youth: The role of self continuity. *Development and Psychopathology, 1*(3), 257–275.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review, 97*(1), 90–113.

Beck, A. T., Brown, G., Berchick, R. J., Stewart, B. L., & Steer, R. A. (1990). Relationship between hopelessness and ultimate suicide: A replication with psychiatric outpatients. *The American Journal of Psychiatry, 147*(2), 190–195.

Breault, K. D. (1986). Suicide in America: A test of Durkheim's theory of religious and family integration, 1933–1980. *American Journal of Sociology, 92*(3), 628–656.

Cavan, R. (1928). *Suicide*. Chicago: University of Chicago Press.

Chandler, M. (1994). Adolescent suicide and the loss of personal continuity. In D. Cicchettiattempts in the National Comorbidity & S. L. Toth (Eds.), *Disorders and dysfunctions of the self* (pp. 371–390). Rochester, NY: University of Rochester Press.

Chandler, M., & Proulx, T. (2006). Changing selves in changing worlds: Youth suicide on the fault-lines of colliding cultures. *Archives of Suicide Research, 10*(2), 125–140.

Chu, J. P., Goldblum, P., Floyd, R., & Bongar, B. (2010). The cultural theory and model of suicide. *Applied and Preventive Psychology, 14*(1–4), 25–40.

De Leo, D., Burgis, S., Bertolote, J. M., Kerkhof, A. J. F. M., & Bille-Brahe, U. (2004). Definitions of suicidal behaviour. In D. De Leo, U. Bille-Brahe, A. D. M. Kerkhof, & A. Schmidke (Eds.), *Suicidal behaviour: Theories and research findings* (pp. 17–39). Washington, DC: Hogrefe & Huber.

De Leo, D., Burgis, S., Bertolote, J. M., Kerkhof, A. J. F. M., & Bille-Brahe, U. (2006). Definitions of suicidal behavior: Lessons learned from the WHO/EURO multicentre study. *Crisis, 27*(1), 4–15.

Douglas, J. D. (1967). *The social meanings of suicide*. Princeton, NJ: Princeton University Press.

Durkheim, E. (1897/1951). *Suicide: A study in sociology* (J.A. Spaulding & G. Simpson, Trans.). Glencoe/London: The Free Press. (Original work published 1897).

Ellis, T. (2001). Psychotherapy with suicidal patients. In D. Lester (Ed.), *Suicide prevention: Resources for the millennium* (pp. 129–151). Philadelphia, PA: Brunner-Routledge.

Farberow, N. L. (1980). *The many faces of suicide: Indirect self destructive behavior*. New York: McGraw-Hill.

Freud, S. (1920). *Beyond the pleasure principle*. Leipzig, Vienna: International Psychoanalytic Publisher.

Gibbs, J. P., & Martin, W. T. (1964). *Status integration and suicide: A sociological study*. Eugene: University of Oregon Press.

Gordon, R. S. (1983). *An operational classification of disease prevention*. Geneva: WHO.

Gunnell, D., Fernando, R., Hewagama, M., Priyangika, W. D. D., Konradsen, F., & Eddleston, M. (2007). The impact of pesticide regulations on suicide in Sri Lanka. *International Journal of Epidemiology, 36*(6), 1235–1242.

Harriss, L., Hawton, K., & Zahl, D. (2005). Value of measuring suicidal intent in assessment of people attending hospital following self-poisoning or self-injury. *British Journal of Psychiatry, 186*(1), 60–66.

Henderson, S., & Williams, C. L. (1978). On the prevention of parasuicide. *Australian and New Zealand Journal of Psychiatry, 8*(4), 237–240.

Henry, A. F., & Short, J. F. (1954). *Suicide and homicide: Some economic, sociological and psychological aspects of aggression*. New York: Free Press.

Joiner, T. (2005). *Why people die by suicide*. Cambridge: Harvard University Press.

Kagan, S. (2007). *Death* (Yale University: Open Yale Courses). Retrieved from http://oyc.yale.edu. Lisence: Creative Commons BY-NC-SA.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry, 56*(7), 617–626.

Kwon, J. W., Chun, H., & Cho, S. (2009). A closer look at the increase in suicide rates in South Korea from 1986–2005. *BMC Public Health, 9,* 72.

Leenars, A. (2010). Edwin Shneidman on suicide. *Suicidology Online, 1,* 5–18.

Leenaars, A. (Ed.). (1999). *Lives and deaths: Selections from the works of Edwin S. Shneidman*. Philadelphia: Brunner/Mazel.

Lester, D. (2013). An essay on loss of self versus escape from self in suicide: Illustrative cases from diaries left by those who died by suicide. *Suicidology Online, 4,* 16–20.

Maris, R. W. (1981). *Pathways to suicide: A survey of self-destructive behaviors*. Baltimore: Johns Hopkins University Press.

Maris, R. W., Berman, A. L., & Silverman, M. M. (2000). The theoretical component in suicidology. In R. W. Maris, A. L. Berman, & M. M. Silverman (Eds.), *Comprehensive textbook of suicidology* (pp. 26–61). New York: Guilford.

Marusic, A. (2004). Toward a new definition of suicidality? Are we prone to Fregoli's illusion? *Crisis, 25*(4), 145–146.

Masaryk, T. G. (1970/1881). *Suicide and the meaning of civilization*. Chicago: University of Chicago Press.

Meehan, P. J., Lamb, J. A., Saltzman, L. E., & O'Carroll, P. W. (1992). Attempted suicide among young adults: Progress towards a meaningful estimate of prevalence. *American Journal of Psychiatry, 149*(1), 41–44.

Menninger, K. A. (1938). *Man against himself: Oxford*. England: Harcourt, Brace.

Mintz, R. S. (1968). Psychotherapy of the suicidal patient. In H. L. P. Resnik (Ed.), *Suicidal behaviors* (pp. 271–296). Boston, MA: Little Brown.

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., … Williams, D. (2008a). Cross national prevalence and risk factors for suicidal ideation, plans, and attempts in the WHO World Mental Health Surveys. *British Journal of Psychiatry*, *192*(2), 98–105.

Nock, M. K., Borges, G., Bromet, E. J., Cha, C. B., Kessler, R. C., & Lee, S. (2008b). Suicide and suicidal behaviour. *Epidemiologic Reviews, 30*(1), 133–154.

Nordentoft, M. (2007). Prevention of suicide and attempted suicide in Denmark. *Danish Medical Bulletin, 54*(4), 306–369.

O'Connor, R. C. (2011). Towards an integrated motivational–volitional model of suicidal behaviour. In R. C. O'Connor, S. Platt, & J. Gordon (Eds.), *International handbook of suicide prevention: Research, policy and practice* (pp. 98–181). Chichester: Wiley.

O'Connor, R. C., & Nock, M. K. (2014). The psychology of suicidal behaviour. *Lancet Psychiatry, 1*(1), 73–85.

Pearson, M., Anthony, Z. B., & Buckley, N. A. (2010). Research prospective policy analysis: How an epistemic community informed policymaking on intentional self poisoning in Sri Lanka. *Health Research Policy and Systems, 8,* 19–29.

Phillips, D. P. (1974). The influence of suggestion on suicide: Substantive and theoretical implications of the Werther effect. *American Sociological Review, 39*(3), 340–354.

Phillips, D. P. (1979). Suicide, motor vehicle fatalities, and the mass media: Evidence toward a theory of suggestion. *American Journal of Sociology, 84*(5), 1150–1174.

Porterfield, A. L. (1949). Indices of suicide and homicide by states and cities: Some Southern-non-Southern contrasts with implications for research. *American Sociological Review, 14*(4), 481–490.

Rao, C., Lopez, A. D., Yang, G., Begg, S., & Ma, J. (2005). Evaluating national cause-of-death statistics: Principles and application to the case of China. *Bulletin of the World Health Organisation, 83*(8), 618–625.

Ratnayeke, L. (1998). Suicide in Sri Lanka. In R. J. Kosky, H. S. Eshkevari, R. D. Goldney, & R. E. Hassan (Eds.), *Suicide prevention: The global context* (pp. 139–142). New York: Plenum Press.

Retterstol, N. (1993). *Suicide—A European perspective*. Cambridge: Cambridge University Press.

Rudd, M. D. (2000). Integrating science into the practice of clinical suicidology: A review of psychotherapy literature and an agenda for the future. In R. W. Maris, S. S. Canetto, J. L. McIntosh, & M. M. Silverman (Eds.), *Review of suicidology, 2000* (pp. 49–83). New York: Guilford.

Sainsbury, P. (1955). *Suicide in London: An ecological study*. Maudsley monograph no. 1. London: Chapman & Hall.

Schmid, C. (1928). *Suicide in seattle: 1914–1925*. Seattle: University of Washington Press.

Schotte, D. E., & Clum, G. A. (1982). Suicide ideation in a college population: A test of a model. *Journal of Consulting and Clinical Psychology, 50*(5), 690–696.

Schotte, D. E., & Clum, G. A. (1987). Problem-solving skills in suicidal psychiatric patients. *Journal of Consulting and Clinical Psychology, 55*(1), 49–54.

Shneidman, E. S. (1968). Classification of suicidal phenomenon. *Bulletin of Suicidology, 2,* 1–9.

Shneidman, E. S. (1985). *Definition of suicide*. Chichester: Wiley.

Shneidman, E. S. (1993). Suicide as psychache. *The Journal of Nervous and Mental Disease, 181* (3), 145–147.

Shneidman, E. S. (1998). "Suicide" in the *Encyclopaedia Britannica,* 1777–1997. *Archives of Suicide Research, 4*(2), 189–199.

Silverman, M. M. (1996). Approaches to suicide prevention: A focus on models. In R. F. Ramsay & B. L. Tanney (Eds.), *Global trends in suicide prevention: Toward the development of national strategies for suicide prevention* (pp. 25–94). Mumbai: Tata Institute of Social Sciences.

Silverman, M. M. (2006). The language of suicidology. *Suicide and Life-Threatening Behaviour, 36*(5), 519–532.

Stack, S. (1983). The effect of religious commitment on suicide: A cross-national analysis. *Journal of Health and Social Behaviour, 24*(4), 362–374.

Thakur, U. (1963). *History of suicide in India*. New Delhi: Munshiram Manoharlal Publishers Pvt. Ltd.

Tukol, T. K. (1976). *Sallekhana is not suicide*. Ahmedabad: L. D. Institute of Indology.

Varnik, P. (2012). Suicide in the world. *International Journal of Environment Research and Public Health, 9*(3), 760–771.

Voros, V. (2010). The stress-diathesis model of suicidal behaviour: Integrative perspectives in our clinical studies among patients with suicidal behaviour. Ph.D. Thesis, Department of Psychiatry and Psychotherapy, Faculty of Medicine, University of Pecs. Retrieved from http://www.aok.pte.hu/docs/phd/file/delgozatok/2010/Voros_Viktor_angol_tezisfuzet.pdf.

Wagner, B. M., Wong, S. A., & Jobes, D. A. (2002). Mental health professionals' determinations of adolescent suicide attempts. *Suicide and Life Threatening Behavior, 32*(3), 284–300.

Wenzel, A., & Beck, A. T. (2008). A cognitive model of suicidal behaviour: Theory and treatment. *Applied and Preventive Psychology, 12*(4), 189–201.

Wenzel, A., Brown, G. K., & Beck, A. T. (2009). *Cognitive therapy for suicidal patients: Scientific and clinical applications*. Washington, DC: American Psychological Association.

Williams, J. M. G. (1997). *Cry of pain: Understanding suicide and self-harm*. London: Penguin Books.

World Health Organisation. (1998). *Primary prevention of mental, neurological and psychosocial disorders.* Suicide. Geneva: Author.

World Health Organisation. (2011). *Causes of death 2008: Data sources and methods*. Retrieved from http://www.who.int/healthinfo/global_burden_disease/cod_2008_sources_methods.pdf.

Wray, M., Colen, C., & Pescosolido, B. (2011). Sociology of suicide. *Annual Review of Sociology, 37,* 505–528.

Zilboorg, G. (1936). Suicide among civilized and primitive races. *American Journal of Psychiatry, 92*(6), 1347–1369.
Zilboorg, G. (1939). Sociology and the psychoanalytic method. *American Journal of Sociology, 45*(3), 341–355.
Zilboorg, G. (1941). The sense of reality. *Psychoanalytic Quarterly, 10*(2), 183–210.

Chapter 2
Suicide in Ancient Hindu Scriptures: Condemned or Glorified?

Latha Nrugham

Since the time of Alexander of Macedonia, the land east of the river Sindhu (the anglicized name of which is Indus) was referred to as Indika or India by later European invaders and as Hindustan by Muslim invaders. Consequently, the people living to the east of river Sindhu were known as Indians or Hindus. Invasions transformed into conquests and empire building. As victors forced people to convert into Islam at the point of sword, a need was experienced by these invaders to refer to those who refused to convert into Islam preferring death to conversion. The word Hindu now included all those who were not Muslims, and later on, those who were not Christians. All religious philosophy, scriptures and practices which were neither Muslim nor Christian, became Hindu, by default use of those in political power for centuries. Another group of people, who came here, arrived by sea: the Parsis. This name also has its roots in geography: they were refugees fleeing the persecution of forced conversions to Islam in Persia and hence, the name of the land and language they spoke, Parsi, became their name and of their religion, by common usage. The name by which India was and is referred to, by the original inhabitants, is Bharat. The scriptures which have their origin in Bharat, are many, as are the religions such as Buddhism, Jainism and Sikhism. This chapter deals with ancient texts that are not Buddhist, Jain, Sikh or Parsi, yet have their origins in Bharat. These hoary texts have the removal of human suffering as one of its primary goals. The other goals of these scriptures are to understand and reveal the nature of oneself, denoted by I: of and with others, denoted by you; and the experiences of change, essentially those from birth to death, denoted by the world. Due to being in immediate proximity I and you are also referred to as 'this'. All else, to which a finger may be pointed to due to distance or needing to be referred to, is said to be 'that'. The relationships between 'this' and 'that' are recurring themes in our ancient scriptures. In other words, these scriptures seek and present answers to questions such as (1) Who am I? (2) Who are you? (3) What is this world, how and

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why does it change? (4) Where did we come from? (5) Where are we going? (6) Why are we here? (7) What is real? (8) What is the cause of suffering and how to remove it? (9) What is life? (10) What is death? (11) Why are we mortal and not immortal? (12) What is the purpose of life? (13) What happens after death? Suicide is one of the themes that are intimately related to many of these questions, most importantly as one of methods of removal of suffering.

The authors of these ancient scriptures studied not only visible phenomena objectively, but also delved deep into subjective experiences, especially while in meditative states. The scriptures record the revelations of these meditators as seeing and hearing, within. Hence, the persons are referred to as seers or Rishis and the content as heard or *Shruti*. The content of the *Shruti* is essentially abstract and pertains to inner experiences as in the ten major Upanishads and are often presented in symbolic language as in the four Vedas. The objective recordings are found in the *Smriti*, or remembered texts which also uses symbolic language, as in the eighteen *Puranas.* The two epics are both objective and subjective, authored by great seers or Maharishis, hence, the Ramayana of Valmiki and the Mahabharata of Vyasa are positioned in between the *Shruti* and *Smriti*. If grouping is needed, they are referred to as *Smriti,* with some portions being accepted almost equal to *Shruti*, for example, the Srimad Bhagavad Gita of Mahabharata. This chapter only examines the Upanishad component of *Shruti,* which is changeless and relevant regardless of time, place and situation. The *Smriti,* on the other hand, has changed much in keeping with societal changes according to time, place and situation. In case of a contradiction of content, *Smriti* acknowledges the superiority of *Shruti.* Due to these reasons, *Smriti* texts are excluded from this chapter. As the seers were many, their understanding of the above questions and answers also varied, as do their presentations. Life and death are consistent themes in the *Shruti,* as is immortality. The various schools of thought, opinion and reasoning on the above questions (and others) in ancient Bharat developed into six broad streams of philosophy, called the *shad darshan,* the last of which is known is Vedanta, meaning the end of the Vedas. This chapter examines only the position of Vedanta on suicide, which has been considered as the only serious philosophical question in the Western world (Camus, 1975). The attitudes, opinions, positions or stands of ancient Hindu scriptures are not well-documented academically as suicide among the Hindus is usually studied for its cultural dimensions for inexplicable reasons.

The three texts which together form the ultimate authority in Vedanta are the Upanishads (*Shruti*), the Bhagavad Gita (*Smriti*) and the Brahma Sutras, also known as the Vedanta Sutras. The last text aims to clear misconceptions of the philosophical systems and logically arrive at the clear message of the *Shruti*. Any school of thought must have a commentary on the Brahma Sutras in order to be accepted as an entity. Hence, there are several commentaries on these aphorisms of the Brahma Sutras. However, this chapter will only examine the commentary of Adi Shankaracharya, the greatest of all teachers, mystic and commentator par excellence, whom no one has managed to excel in any manner. Similarly, this chapter will limit itself to the earliest extant commentaries on the ten major Upanishads and the Bhagavad Gita, also by Adi Shankaracharya. The Yoga Sutras of Patanjali is a

practical manual accepted by Vedanta, and its earliest extant commentary by Vyasa will be used in this chapter to examine its position on suicidal behaviour.

The suicidal process includes a spectrum of human phenomena such as suicidal thoughts, suicidal acts and completed suicide. The World Health Organisation (WHO) defines suicide as the act of deliberately killing oneself (WHO, 2016). The Centres for Disease Control and Prevention (CDC) of the USA defines suicide as death caused by self-directed injurious behaviour with intent to die as a result of the behaviour (CDC, 2015). They define a suicide attempt as a non-fatal, self-directed, potentially injurious behaviour with intent to die as a result of the behaviour but which might not result in injury and suicidal ideation as either thinking about, considering, or planning a suicidal act. The Merriam-Webster Dictionary (2016) defines suicide as the act or an instance of taking one's own life voluntarily and intentionally. Shneidman (1973), the father of suicidology, wrote about suicide in the Encyclopaedia Britannica:

> Suicide is not a disease (although there are those who think so); it is not, in the view of the most detached observers, an immorality (although, as noted below, it has often been so treated in Western and other cultures); and, finally, it is unlikely that any one theory will ever explain phenomena as varied and as complicated as human self-destructive behaviours. In general, it is probably accurate to say that suicide always involves an individual's tortured and tunnelled logic in a state of inner-felt, intolerable emotion. In addition, this mixture of constricted thinking and unbearable anguish is infused with that individual's conscious and unconscious psychodynamics (of hate, dependency, hope, etc.), playing themselves out within a social and cultural context, which itself imposes various degrees of restraint on, or facilitations of, the suicidal act. (pp. 383–385)

The first methodological study of suicide as a social phenomenon was by Durkheim (1951), in which he identified four types of suicide depending on the strengths of and balances between the values placed on oneself as an individual and on others in the society in which one lives. *Egoistic* suicide is about low social integration and high individualism. *Altruistic* suicide is about high social integration existing simultaneously with low individualism. *Anomic* suicide is about both low social integration and low individualism. *Fatalistic* suicide occurs when high individualism and social integration are present together. As suicide was still within the realm of religion only at that time and psychiatry was in its infancy, he used the term moral regulation instead of individualism. However, psychiatry and psychology grew fast after the world wars, and as a result, the definitions of mental health and suicide, changed in the Western world. Shneidman has documented these changes over a period of more than two centuries of notes on suicide in the Encyclopaedia Britannica (Leenars, 2010). Suicide has moved from being a moral sin and religious crime to becoming the latest area of specialization in mental health, in most parts of the world. That suicide had a mental distress component to it provoking and sustaining the intent to stop the life of the body, alleviate pain and remove distress, is being increasingly recognized, despite several modern definitions excluding the mental distress part. If the mental distress constituent is absent or irrelevant, suicide prevention would not be a part of health ministries, the WHO would have nothing to do with it, and neither psychiatry nor psychology would have any role in the life of a suicidal person or in suicide prevention programs.

Today, in the Western world, a suicidal person would be immediately referred to the emergency departments of mental health clinics, not a priest or the police. This major change about the shifting of the location of the system that has to do with the suicidal person is the most important indicator of the acceptance of the mental distress component in the current understanding of suicidal behaviour, despite efforts to formulate definitions without it.

Leenars (2010) states that Shneidman, the founder of the American Association of Suicidology and its pioneering journal, Suicide and Life Threatening Behaviour, culled out the following ten commonalities on suicide:

I. The common purpose of suicide is to seek a solution.
II. The common goal of suicide is cessation of consciousness.
III. The common stimulus in suicide is intolerable psychological pain.
IV. The common stressor in suicide is frustrated psychological needs.
V. The common emotion in suicide is hopelessness–helplessness.
VI. The common cognitive state in suicide is ambivalence.
VII. The common perceptual state in suicide is constriction.
VIII. The common action in suicide is egression.
IX. The common interpersonal act in suicide is communication of intention.
X. The common consistency in suicide is with lifelong coping patterns.

Later in his life, Shneidman (1993) identified the primary motivation for suicide as psychache which he defined as intense, intolerable, emotional and psychological pain which cannot be decreased or removed by means that were previously successful.

Laws have changed in most Western countries, slowly but steadily de-criminalizing suicide. In the UK, this happened in 1961. However, The Indian Penal Code, which was brought into force in 1862 by the British rulers of India, positions suicide as a crime to date[1]. Section 309 of this Code places the punishment for the criminal offence of an unsuccessful suicide attempt at simple imprisonment for 1 year or with fine or both. It is useful to state here that Section 308 of this Code is about the criminal offence of attempt to commit culpable homicide. Indian thought on suicide was immaterial, then and now. This can be changed if Indian thought on suicide is at least presented systematically and examined for its attitudes towards suicide, the purpose of this chapter.

[1]In early 2017, the Parliament of India passed the Mental Health Care Bill, decriminalising suicide and making provisions, instead, for mental health care for suicidal behaviour.

Ancient Scriptures of Bharat Examined for Position on Suicide

Prasthanatrayi

Upanishads. The ten major Upanishads are not shy about death. The first on this list in all collections and listings is the Isha Upanishad (Gambhirananda, 2006a). Verse 3 of this Upanishad states:

> Those worlds of devils are covered by blinding darkness. Those people that kill the Self go to them after giving up this body.

This verse has been quoted as condemning suicide harshly (Battin, 2015). However, Adi Shankaracharya holds otherwise (Gambhirananda, 2006a). He starts his comments on this verse by stating: *Now begins this verse for decrying the man who is devoid of knowledge.* He explains *asuryah*; *as compared with the non-dual state of the supreme Self, even gods are asuras, devils; and the worlds belonging to them are asuryah.* He explains *tamasa as darkness in the form of ignorance* and *pretyaas after departing, giving up this body*. Immediately after explaining *aatmahanah* as those that kill the Self, he asks, *who are they?* The answer is the next word of the verse, *janah*, which he explains as *the common people, those that are ignorant.* Therefore, he asks the question: *How do they kill the eternal Self?* He himself explains: *By keeping concealed through the fault of ignorance the Self which exists. The experience of the Self as free from decrepitude, death, etc. (present in the realization, 'I am free from decrepitude and death'), that comes as a result of the existence of the Self, remains concealed, as is the consciousness of a person who is killed. So the ordinary ignorant persons are called the killers of the Self. Because of that very fault of slaying the Self, they are subject to birth and death.* Logically, he asks now: *What is the nature of the Self by slaying which the ignorant people transmigrate, and contrariwise, the men of knowledge, the non-killers of the Self, become freed?* He informs us that this is being answered in the next verses, verse 4 of Isha Upanishad:

> It is unmoving, one, and faster than the mind. The senses could not overtake It, since It had run ahead. Remaining stationary, It outruns all other runners. It being there, Matarisva allots (or supports) all activities.

Verse 5 of Isha Upanishad:

> That moves, That does not move; That is far off, That is very near; That is inside all this, and That is also outside all this.

Verse 6 of Isha Upanishad:

> He who sees all beings in the Self itself, and the Self in all beings, feels no hatred by virtue of that (realization).

Verse 7 of Isha Upanishad:

> When to the man of realization all beings become the very Self, then what delusion and what sorrow can there be for that seer of oneness? (Or – In the Self, of the man of realization, in which all beings become the Self, what delusion and what sorrow can remain for that seer of oneness?)

Verse 8 of Isha Upanishad:

> He is all-pervasive, pure, bodiless, without wound, without sinews, taintless, untouched by sin, omniscient, ruler of mind, transcendent, and self-existent; he has duly allotted the (respective) duties to the eternal years (i.e. to the eternal creators called by that name).

He comments here: *This verse indicates what the Self that was spoken of in the previous verse really is in Its own nature.*

Thus, it is very clear that the Self mentioned in verse 3 of Isha Upanishad is not the human personality with a name, relationships, likes and dislikes, experiencing joy and sorrow alternatively, and birth and death in cyclic succession.

Verse 2 of this Upanishad advises:

> By doing karma, indeed, should one wish to live here for a hundred years. For a man, such as you (who wants to live thus), there is no way other than this, whereby karma may not cling to you.

And verse 1 of Isha Upanishad states:

> Aum. All this – whatsoever moves on earth – should be covered by the Lord. Protect (your Self) through that detachment. Do not covet anybody's wealth. (Or – Do not covet, for whose is wealth?)

The invocation verse of Isha Upanishad declares:

> Aum. That (supreme Brahman) is infinite, and this (conditioned Brahman) is infinite. The infinite (conditioned Brahman) proceeds from the infinite (supreme Brahman). (Then through knowledge), realizing the infinitude of the infinite (conditioned Brahman), it remains as the infinite (unconditioned Brahman) alone.

In the Introduction itself of his commentary on the Isha Upanishad, Adi Shankaracharya mentions that the verses of this Upanishad serve to reveal the true nature of the Self and have not been utilized in *karma* (rituals etc.) and that all the Upanishads exhaust themselves simply by determining the true nature of the Self, and the Gita and the scriptures dealing with *moksha* (the emancipation of the soul) have only this end in view. He also states that it is that person who intensely desires emancipation who is the competent student for the study of these verses, not one who hankers after results of actions or identifies with the physical body or the social personality (Gambhirananda, 2006a).

This short Upanishad of 18 verses is at the top position among the Upanishads and hence, if the third verse had suicide as understood by IPC Section 309 as its content, ripples of such a harsh condemnation would have been found in other texts, as internal content consistency of the Upanishads with each other is important.

Kena Upanishad does not contain a word about suicide (Gambhirananda, 2006b). Katha Upanishad, in which Death is the teacher, answers the adolescent

Nachiketa's questions about existence after death (Gambhirananda, 2006b). In case the Isha Upanishad verse 3 was about suicide as we understand as a mental health issue, a corroboration of this verse should have been present in the Katha Upanishad. This is not the case. However, the Katha Upanishad does make a reference to joyless worlds in verse 1.3, not in any manner connected to suicide.

Prashna Upanishad, despite seeking answers to questions on death like the other Upanishads, does not mention suicide and neither does the Mandukya or Svetasvatara Upanishad or the Aitareya or Taittiriya or Chandogya Upanishads (Gambhirananda 2006b, c, 2003). Chapter 4 of the Fourth Brahmana of the Brihadaranyaka Upanishad is titled 'The Soul of the Unrealized after Death'. The Brihadaranyaka is the most voluminous of all the Upanishads and is said to contain all the concepts of Upanishads, in summary and detail. This is so much taken for granted that if one is unsure of specifically which Upanishad one needs to refer to regarding a concept from the Upanishad, one may safely say that it is in the Brihadaranyaka Upanishad. The same is said about Adi Shankaracharya's commentary on this Upanishad. Hence, whether the 3rd verse of Isha Upanishad is about suicide as defined by the WHO or not, a reference, a reflection or a ripple of such an understanding should be in this section. Verses 10, 11 and 12 of the fourth chapter of the fourth section of the Brihadaranyaka Upanishad are closely related to verses 9, 3 and 7 of the Isha Upanishad (Madhavananda, 2004). Of relevance for this chapter are verses 11 and 12 of Brihadaranyaka Upanishad.

Verse 11 of Brihadaranyaka Upanishad concurs with verse 3 of Isha Upanishad:

> Miserable are those worlds enveloped by (that) blinding darkness (ignorance). To them, after death, go those people who are ignorant and unwise.

Verse 12 of Brihadaranyaka Upanishad which is closely related to verse 7 of Isha Upanishad:

> If a man knows the Self as 'I am this,' then desiring what and for whose sake will he suffer in the wake of the body?

The words of verse 11 of the Brihadaranyaka Upanishad and verse 3 of the Isha Upanishad are almost the same. Only the first word and the last two words are different. In the Brihadaranyaka Upanishad, it is clarified beyond doubt as to who are they who 'kill' the Self: the ignorant and the unwise, just as explained by Adi Shankaracharya in his comments on verse 3 of Isha Upanishad. Verse 12 of the Brihadaranyaka Upanishad is brought into this chapter just to emphasize the internal consistencies of the Upanishads with each other, about the Self being the universal and supreme Self, not the human personality connected to a name and relationships with the world of a particular nature, limited to like and dislikes and who having been born, will also die.

The Bhagavad Gita does not mention suicide in any of its 700 verses, despite having a full chapter related to death, and nor does Adi Shankaracharya's commentary on it (Gambhirananda, 2006a). None of the 555 aphorisms of the Brahma Sutras mention suicide either (Gambhirananda, 2011). However, while commenting on sutras 41 and 43 of part four of Chap. 3, *Sadhana adhyaya*, Adi Shankaracharya refers to a *Smriti* verse: *For one who after being established in the norm of the*

lifelong celibate (Naisthika) falls from it, we cannot imagine any expiation by which that self-immolating man can be purified. Here, leaving celibacy after being established in it for pursuit of a spiritual goal is considered the same as setting oneself on fire, aimed at a painful, slow and publicly dramatic death.

The Yoga Sutras of Patanjali contain 196 aphorisms for practice grouped into four chapters on *yoga*, which is defined in the 2nd aphorism itself as being the restraint of the changes or movements or modifications of the mind (Prasada, 2005). Sutra 29 of the second chapter, *Sadhana adhyaya* informs about the eight accessories of *yoga*, beginning with restraint and ending with *Samadhi* (stable meditative state of union with the universe). The next *sutra*, 30, states that the first restraint, *yama*, is that of *Ahimsa*, non-violence. Maharishi Vyasa (Prasada, 2005) comments on Ahimsa: *Of these, abstinence from injury is the not causing of pain to any living creature in any way at any time. The restraints and observances that follow have their origin in it. They are meant to achieve it. They are taught with the object of teaching it. They are taken up with the object of rendering the light of its appearance purer.*

By requiring *ahimsa* as the first step on the path of *yoga*, and by Maharishi Vyasa's comments on *ahimsa*, it is clear that the suicidal process is to be abstained from. No exceptions are provided, hence the expectation is to restrain from self-harm and suicidal behaviour too.

Discussion

Suicide does not merit mention in the Upanishads or the Bhagavad Gita or the Brahma Sutras as a matter of philosophical discussion or contemplation although death has been deeply studied and human distress well examined. The Yoga Sutras do not mention suicide directly either, but Maharishi Vyasa's clear comments include the restraint on self-injurious behaviour by default. All these texts are to be taught by a Self-Realized teacher to a student who is eager to remove own suffering permanently by choosing to work for own liberation, *moksha*. Hence a mere reading of them or even excellent self-study is not enough to understand the contents and the linkages between the various concepts. Swami Krishnananda (2000), of our times at the Divine Life Society, Rishikesh, explains that suicide is an even stronger affirmation of the personality in death than in life, not its death. He also explains that progress on the spiritual path is not possible without annihilation of the individual's ego, an almost impossible achievement. This freeing of oneself from the grip of one's individual limitations and moving into cosmic or universal oneness is the permanent liberation from suffering. *Moksha* is one of four goals of life, according to these very scriptures, by going through the four phases of life within the four divisions of work according to one's qualities and aspirations:

Four Goals of Human Life

Dharma, in this context, resembles the ability to know the difference between right and wrong, and to know how to stay away from the wrong and be right or righteousness;

Artha is material prosperity which includes all that leads to and from economic improvement, to be pursued by those who have understood *dharma* and practice it accordingly;

Kama is the fulfilment of worldly (perishable and subject to change) desires by those who practice *dharma* properly and have acquired *artha* according to *dharma*; and

Moksha is liberation, the only spiritual goal to be pursued, by those who, having tried to reach the goal of *kama* have realized it to be a futile exercise because of the inner purification which follows when *dharma* is used to reach *artha* and *kama*.

Four Phases of Human Life

Learning about life. In order to know what is *dharma* and what is not *dharma*, male children were sent to *gurukuls* (the clan/family of the guru) to live with the *guru* (spiritual guide) along with other students of that particular *guru.* Such *gurukuls* were usually on the outskirts of a city/cluster of villages. This period was termed as '*brahmaacharya ashram*' (*brahman* = the in-dwelling, omnipotent, omnipresent and omniscient Lord; *acharya* = one who leads by own conduct, *achar* = righteous conduct as given in the scriptures, *ashram* = period/shelter): one who is making oneself qualified to know about *brahman*. Female children were taught the same at home, by their parents or an assigned *guru*.

Pursuing worldly goals. The next period in life was termed as '*grihastha ashram*' (*grh* = house/home, *stha* = situation/situated in): the householder's life, during which the person gets married and settles down to a householder's life. It is during this period that the person may, guided by the principles of *dharma* as learnt, pursue economic and social goals. Having reached the goal of *artha* according to *dharma*, individuals may, pursue the goal of *kama*, also according to *dharma*. A ceremony for any possible goal: *artha* or *kama* must have the presence of husband and wife together, as two individuals strengthening each other within one unit. The wife is known as *ardhangani* (*ardha* = half, *anga* = body, *ani* = indicative of female): she who is half the body of the husband, that is, the husband becomes completed only by his wife.

Withdrawal from worldly life to pursue spiritual goals. When the couple eventually find out that real satisfaction was not to be found in pursuing *artha* or *kama*, they could choose a *guru* and seek to pursue the goal of *moksha*, under that *guru*. This stage or period of life was termed '*vanaprastha ashram*' (*vana* = forest, *prasthan* = departure) as the couple would depart from city/village life, leaving behind all acquisitions and relationships, and enter the forest to live a life of

mediation and austerity in solitude. During this period, their sole social contact was with the *guru*, apart from each other. If the wife died during this period, the husband was free to accept the last stage of a man's life: *sannyasa ashram* (*sat* = true, *nyasa* = complete dedication to and identification with the Lord, leading to Unity by renunciation of all else). *Sannyasa* begins with civil death, the candidate being required to perform the death rituals of his earlier personhood.

Complete withdrawal from worldly life to pursue spiritual goals. The formal acceptance of *sannyasa* (monkhood) is equal to civil death of the man: he has no further relationship with the world. All that he encountered was a reflection of the Lord, in his vision. If the husband desired to enter *sannyasa* while his wife was alive, he could do so, with her free consent. A man could enter *sannyasa* directly after *brahmaacharya*, with the free consent of the mother. However, this kind of entry was not recommended but discouraged as it could be a short period with doubtful goals and returning from *sannyasa* to pursue *artha* and *kama* was not encouraged, as it was the going against the natural order of life stages. The goal of *sannyas* is moving up the different stages of *samadhi* (union with the Lord) through any *yoga* (union with the Lord) discipline into a steady state of universal consciousness wherein death and individual consciousness are transcended and eternal life is attained without having to be reborn. Fear of death being absent in such a one, he could choose to live or leave, both of which was for universal welfare as he no longer had individual interests, being without individual consciousness. This is also known as liberation or *moksha*.

Given this kind of community organization as described just now, it is perhaps possible to understand the absence of a condemning or glorifying position on suicidal phenomena in the *Shruti* and the *Prasthanatrayi.* Another reason could be the acceptance of monkhood as a stage of life and renunciation as a quality to be nourished and nurtured. The former provides freedom from societal structures while the latter provides freedom from mental knots. However, due to the rigours of monkhood, *sannyas*, it was not usual for women to adopt that path. A *sannyasin* (a man who had been given *sannyas* by his *guru*) was to give up fires, external (for use such as cooking, heating and light) and internal (such as hunger, desires, intellectual passions and emotions), not to spend time under the same tree for more than three days, not to ask for alms more than thrice from the same house, not to seek alms from more than seven houses in a day, not go to beg for alms more than once a day, have no possessions except the clothes he wore, a stick, a begging bowl and a water-pot. Such a one had no enemies, no expectations from or duties to anyone except the Lord and used his feet to carry himself. In return for the alms he received, he could impart spiritual knowledge in the way he deemed fit. In this manner, spiritual knowledge was made available to everyone at their doorstep, either as an individual at home or in groups in the evening, after the day's work was done and people could gather. *Sannyasa* in this form was meant only for males as a female's entry into marriage was considered akin to a male's entry into *sannyasa.* The husband was to function as her *guru* and facilitate her spiritual development.

It was considered wiser to make a no-holds-barred effort to pursue all of one's desires openly and according to *dharma* rather than enter *sannyasa* and re-track

back to pursue *artha* and *kama*. A person who came back thus was treated as one without a firm resolve and not respected. However, it was possible to live in the *brahmaacharya ashram* as a *brahmachari*, under a *guru*, without getting married and entering *grihastha ashram* or accepting renunciation and entering *sannyas*. While living in society and pursuing the goals of *artha* and *kama*, one could belong to any of the four groups: *brahmin, kshatriya, vaisya* or *shudra*. This grouping is known as the caste system. This grouping is not as per birth.

Four Divisions of Work

According to the Bhagavad Gita, this grouping is according to one's inherent qualities: one who was a pure intellectual would be considered a *brahmin* (one who has reached the state of unity with *brahman* or is on the way there, excluding all other goals), if such an intellectual had acquired knowledge of *brahman* (the Lord) and spent life in imparting that knowledge. As spiritual knowledge was considered superior to worldly knowledge, the imparter of spiritual knowledge was given the highest status, capable of guiding anyone, regardless of social status, on worldly and spiritual life. A *brahmin* would not pursue a worldly vocation to maintain the body or any other worldly interest towards acquisition, possession or maintenance, as the *brahmin's* individual goals were spiritual, not worldly. The *brahmin* was, therefore, under the protection of the other three groups, even as their *guru*, and dependent on their goodwill for daily existence, apparently. A *guru* who did not lead the disciples to *brahman*, could not, therefore, be a *brahmin*, even if respected as teacher.

One who had a combination of intellectualism, fondness for power and physical strength, shaped by training and exercises of the mind and body was considered best suited to rule persons or govern, administer and protect the land, under the guidance of a *guru*. Such persons were called *kshatriya* (those who protect from decay). Others who had a flair for trade, a fondness for wealth and considered themselves suitable for any kind of trading or to cultivate land were called *vaishyas* (those who trade). The *vaishya* was the main taxpayer and therefore had all worldly assets protected by the *kshatriya,* while the spiritual content of the *vaishya*'s life was under the guidance of the *brahmin*.

The rest of society, which could not shape itself into any of the three groups, would, necessarily, be serving these three groups physically, in some manner or the other. They were called *shudras* (those who are weak-willed and therefore, only serve). As the resolve to shape oneself to pursue a goal was lacking in these persons, spiritual knowledge was not meant for them: the potential for misunderstanding and misusing the content was greater than the potential for correct understanding and application, even if guided. *Shudras* had no individual spiritual goals and merely lived, unlike the other three groups, who had a purpose greater than mere existence and experience.

Service to others in society was unavoidable as *brahmins, kshatriyas* and *vaishyas* also clearly serve others in society. Group qualities could inhere in one by birth

(accepted as the result of cultivation in earlier lifetimes) or by cultivation in the present lifetime, even if difficult. Without *brahmin* qualities such as subtleness of intellect, non-covetousness, fearlessness and forgiveness or *kshatriya* qualities such as suppleness of intellect, willingness to risk one's life in all ways for the protection of others, courage and excellent physical health, even birth into a *brahmin* or *kshatriya* family respectively, was not of much use to the individual or society. It is the *brahmin* with the best of *brahmin* qualities who is most likely to seek and be given *sannyas,* after which he was considered above all the four groupings.

The mind is another subject of the scriptures which inform us that although difficult, controlling the mind is possible through dispassion and practice. The first chapter of the Bhagavad Gita is titled Arjuna's Distress. Modern mental health professionals will easily recognize the description of Arjuna's state as being a combination of severe depression and anxiety. Arjuna is not suicidal, but he does mention preferring the life of a begging mendicant rather than a warrior or a prince, just in order to escape mental distress. The mind and its connections with the body and life are explained in the Taittiriya Upanishad, which explains the five sheaths of human personality. The first one is the gross physical body, consisting of food and hence called the *Annamaya kosha*, or the food sheath. This most external sheath is pervaded by *prana,* the life force within the breath, is subtler, more powerful and called the *Pranamaya kosha* or the life-breath sheath. Pervading this second sheath is the mind, *manas*, a bundle of thoughts and feelings, doubts and memories, more subtle and powerful than the *Pranamaya kosha* and is called the *Manomaya kosha.* Pervading this third sheath is the intellect, the discriminative faculty with decision-making abilities, more subtle and powerful than the *Manomaya kosha* and is called the Vijnanamaya *kosha.* This fourth sheath is pervaded by the bliss sheath, called the *Anandamaya kosha*, subtlest among these five and most powerful, but ignorant. The Self, the *aatma* is within these five sheaths of a human personality. All the Upanishads examined above tirelessly proclaim the oneness of the individual Self with the universal Self. Hence, if under the duress of mental agony due to one or many situations, a person killing oneself is disconnecting the *pranamaya kosha* from the *annamaya kosha,* by damaging the latter, the physical body. The rest of the personality continues to exist and move along the paths determined by own actions and desires, for example, into a more suitable new body. The linkages between action, *karma* and reincarnation or the repetition of the carnal body are explained in the Brihadaranyaka Upanishad, Katha Upanishad and the Bhagavad Gita. Just because reincarnation is expected, the human body is not devalued. Many works composed by Adi Shankaracharya and other great teachers begin by stating the extremely difficult to obtain: a human birth, and its purpose: pursuit of moksha or liberation or Self-Realization, that is knowing by one's own stable experience that one is neither the body nor the mind, but the Self, the Supreme Universal Self. Their position is that using the human life for any other purpose is the real suicide, as seen in the unusual repetition of a clearly condemning Smriti verse (given above) in the comments on two almost sequential aphorisms of the Brahma Sutras.

Self-Realization, the becoming real of the true Self, requires the seeker of the Self, to transcend all other selves or sheaths. This very process can at times lead to

death, as the consciousness of identity travels deep into progressively subtler and more powerful areas within. This death is not suicide, due to the absence of mental distress, the presence of deep oneness with the universe and the absence of damage to the human body. This is the death that is aimed for in the ancient scriptures of Bharat, the letting go of the body instead of clinging on to it, which the Yoga Sutras state is an affliction called *abhinivesha*. This process of leaving the body is referred to as departure or passing away, not merely dying, and is described in the eighth chapter of the Bhagavad Gita and also at other places in it and the Upanishads, the Brahma Sutras. This conscious process is known as moving from mortality to immortality, finishing the cycle of births and deaths.

The manner in which the goals of life are accepted and pursued, in Bharat, means that for those who choose to follow the spiritual path, aid and support are available. The goal of life not being mere world dominion for a period of time or exclusive mastery over inexhaustible riches or never-ending fame or such, but a task more difficult, can create its own share of mental distress. However, accepting the knowledge about the world as being a place of constant change and therefore as unreliable decreases the tendency to seek or expect comfort and reassurance from it, resulting in fewer disappointments and frustrations.

On the other hand, forgetting the invaluable content of these ancient texts or not even knowing them, due to changes in community organization brought about by continuous invasions and alien victors, may result in the same suicidal processes in India today as described by Durkheim and Shneidman after studying suicides for decades in the Western world.

It is pertinent to note that it was in the Middle Ages that suicide began to be considered a criminal offence in Europe. These were tough times with frequent wars, epidemics and poverty there, leading to all European countries who could manage the resources making organized efforts to reach India, known for her fabulous wealth and wisdom for thousands of years across the world. During such trying times, the suicide of an adult meant both decrease in labour and taxes. Therefore, punishments were harsh, such as public and formal stigma, denial of burial places and confiscation of personal property by the government. The person who had chosen suicide was seen as one who had criminally offended his fellows in the community by not being willing to share the common burden of trying to make life better together and for all. The punishments were severe enough to have a deterring effect. Now that economies have changed in the European world, their attitudes towards suicide have also changed. Suicide now is a theme of the mental health profession, not the clergy or the police. The New Testament does not condemn suicide, neither does the Old Testament, except for the commandment brought down by Moses: Thou shalt not kill, which includes suicide by default just like *Ahimsa* in the Yoga Sutras does. Jesus did not retract his statement that he and his father were one to try to save his life. Incurable disease, intolerable pain, loss of honour, escape from shame and humiliation were seen as adequate reasons for suicide in ancient Europe and Asian countries, when their economies were doing well. The movement of suicide as a theme from the religious and penal arenas into mental health is also related to the well-being of the economies in which these

moves take place, not just changes in collective attitudes. Today, there are legal cases discussing the right to die and withdrawal of medical life-support systems, in several of these countries, including India.

Conclusion

Now that it is known that suicide is neither condemned nor glorified, and not considered as a crime in our most authoritative scriptures, now that more than 50 years have passed since the UK de-criminalized suicide, what reason does India have to keep Section 309 in its penal code? It certainly does not serve as a deterrent as one who completes suicide is not available for criminal or civil punishment. The Government of India should de-criminalize suicide and instead form a National Policy for Suicide Prevention, leading from a public debate on the topic and to national programmes implemented with vigour so that there is no doubt left in the collective Indian mind that suicidal behaviour has complex roots, is not a penal crime and precisely because mental distress is one of its main components, it can be addressed effectively. The suicidal person in India needs help and support, not criminal punishment. Suicidal behaviour should be prevented, with humanity and compassion, not the rod of criminal punishment.

References

Battin, M. P. (2015). *The ethics of suicide: Historical sources*. Oxford: Oxford University Press.

Camus, A. (1975). *The myth of Sisyphus* (J. O'Brien, Trans.) Harmondsworth, London: Penguin Books (Original work published in 1942).

CDC. (2015). *Definitions: Self-directed violence.* Atlanta, GA: Centres for Disease Control and Prevention. Retrieved from http://www.cdc.gov/violenceprevention/suicide/definitions.html.

Durkheim, E. (1951). *Suicide: A study in sociology* (J. A. Spaulding & G. Simpson, Trans.). New York: Free Press (Original work published in 1897).

Gambhirananda, S. (2003). *Chandogya Upanishads* (Vol. 1). With the Commentary of Shankaracharya. Kolkata: Advaita Ashram.

Gambhirananda, S. (2006a). *Eight Upanishads* (Vol. 1). With the Commentary of Shankaracharya. Kolkata: Advaita Ashram.

Gambhirananda, S. (2006b). *Eight Upanishads* (Vol. 2). With the Commentary of Shankaracharya. Kolkata: Advaita Ashram.

Gambhirananda, S. (2006c). *Bhagavad Gita*. With the Commentary of Shankaracharya. Kolkata: Advaita Ashram.

Gambhirananda, S. (2011). *Brahma Sutra Bhashya of Shankaracharya*. Champawat: Advaita Ashram.

Leenars, A. (2010). Edwin S Shneidman on Suicide. *Suicidology Online, 1,* 5–18.

Madhavananda, S. (2004). *The Brihadaranyaka Upanishad.* With the commentary of Shankaracharya. Kolkata: Advaita Ashram.

Merriam-Webster Dictionary. (2016). *Suicide*. Merriam-Webster. Retrieved from http://www.merriam-webster.com/dictionary/suicide.

Prasada, R. (2005). *Patanjali yoga sutras*. Allahabad, Munshiram: Manoharlal Publishers Pvt. Ltd.
Shneidman, E. (1973). *Suicide. Encyclopaedia Britannica* (Vol. 21, pp. 383–385). Chicago: William Benton.
Shneidman, E. (1993). Suicide as psychache. *Journal of Nervous and Mental Disease, 181,* 147–149.
Swami Krishnananda. (2000). *On reason and higher life*. Retrieved from http://www.swami-krishnananda.org/disc/disc_17.html.
WHO. (2016). Suicide. WHO. Retrieved from http://www.who.int/topics/suicide/en/.

Chapter 3
"To Life": Biblical Narratives, Positive Psychology, and Suicide-Prevention

Kalman J. Kaplan and Paul Cantz

In a highly original work, Faber (1970) points to the prevalence of suicide by Greek figures in the tragedies of Sophocles and Euripides. Some 16 suicides and self-mutilations can be found in the 26 surviving tragedies of Sophocles and Euripides. Only one suicide occurs in the 7 surviving plays of the third great Greek tragedian, Aeschylus.[1] There are approximately 236 characters that appear in the 26 plays of Sophocles and Euripides, many in more than one play.[2] Approximately 16 suicides (including one self-mutilation) can be found in the 26 surviving tragedies of Sophocles and Euripides, including 12 by female characters. Eight instances of suicidal behaviour (including one self-mutilation) can be found among the approximately 63 characters (exclusive of unspecified figures such as the Greek chorus) in the seven plays of Sophocles, yielding a suicide rate of 12.6%. Of these, four of the suicides occur among the 45 male characters depicted (8.8%) while the four remaining suicides occur among the 18 female characters depicted in Sophocles (22.2%). The gender difference in suicide is even more pronounced in the 19 surviving Euripidean plays. Here, approximately 173 characters are depicted, with no suicides occurring among the 123 male figures (0%) and eight among the 50 female characters (16%). Only one suicide, a male character, Eteocles, occurs in

[1]Only one semi-overt act of self-destruction occurs in the seven surviving plays of Aeschylus, the third great Greek tragedian; specifically, in *The Seven Against Thebes*, where Eteocles, son of Oedipus and Jocasta, rushes to the battlefield, insisting the Gods are eager for his death (ll. 692–719). Even here, he is killed by his brother Polyneices whom Eteocles also kills.
[2]Generally, we do not count Greek choruses as characters as they are not candidates for suicidal behaviour.

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the 7 surviving plays and 41 depicted characters, of the third great Greek tragedian, Aeschylus.[3] This yields, there are approximately 185 characters that appear in the 26 plays of Sophocles and Euripides, many in more than one play. Granted, these characters are fictional, but their depiction provides a portal into the way the Greek tragedians thought.

In addition, many famous historical figures took their lives in ancient Greece and Rome. The famous English poet John Donne lists three pages of such historical suicides in his iconic work *Biathanatos* (Donne, 1608/1984). The works of ancient biographers such as Plutarch and Diogenes Laertius recount many historical suicide tales: Pythagoras, Socrates, Zeno, Demosthenes, the statesman Marc Antony, the stoic philosopher Seneca, and his wife Paulina. In addition, Graeco-Roman literature provides a number of examples of collective suicide in the ancient world, in which men slaughtered their families and then themselves.

The great sociologist and founder of the discipline of suicidology, Durkheim (1897/1951) distinguished three distinctive types of suicides: (1) egoistic suicides resulting from an isolation of self from society; (2) altruistic suicides resulting from a lack of differentiation between self and society; and (3) anomic suicides, referring to a confusion in boundaries between self and society. Most of Sophocles' depicted suicides are egoistic, while most of the suicides depicted by Euripides' are altruistic. Several of each are anomic. Table 3.1 applies Durkheim's typology to suicides in Greek tragedy (see Oates & O'Neill, 1938; Aeschylus, 1938; Euripides, 1938; Sophocles, 1938a, b, c).

In Faber's view, Sophocles and Euripides differ in their dramatization of the suicidal act and the underlying motivation. Suicide in Sophocles is ordinarily an active, aggressive self-murderous act (Ajax, Oedipus, Jocasta, Haemon, Eurydice, Deianeira), an act which expresses anger towards significant others and guilt over the breakdown of the idealized self. The self-destructive behaviour of Heracles and Antigone are the only exceptions and tend to be more like the suicides depicted by Euripides. For Euripides, suicide (Alcestis, Polyxena, Evadne, Macaria, Iphigenia, and Menoeceus, all women except the last) is a more passive, acquiescing, self-sacrificial act, an act in which anticipation for and anxiety regarding the future is more conspicuous than anger over loss or guilt for past deeds (Faber, 1970, pp. 93, 94).

For Sophocles, suicide is a savagely aggressive act provoked by the need to expiate failure, to attack the significant other, to resurrect the good self by punishing the bad self, in short, an act that announces the terrible toll human beings are prone to exact for themselves for what they have *done*, or for what they believe others have *done*. Euripides, in contrast, is preoccupied with suicide as a phenomenon intimately bound up with the problem of *choice*, with the problem of allowing oneself to become a person who is unlike the person one imagines oneself to be by *doing* something "bad" or unacceptable, something that forces one to "face up to"

[3]Only one semi-overt act of self-destruction occurs in the seven surviving plays of Aeschylus, the third great Greek tragedian; specifically, in *The Seven Against Thebes*, where Eteocles, son of Oedipus and Jocasta, rushes to the battlefield, insisting the Gods are eager for his death (ll. 692–719).

Table 3.1 Suicides in Greek tragedy

Character	Gender	Source	Method	Type
Ajax	M	Ajax (Sophocles)	Sword	Egoistic
Deianeira	F	The Trachinae (Sophocles)	Sword	Egoistic
Eurydice	F	Antigone (Sophocles)	Knife	Egoistic
Haemon	M	Antigone (Sophocles)	Sword	Egoistic
Jocasta	F	Oedipus Rex (Sophocles)	Hanging	Egoistic
Oedipus	M	Oedipus Rex (Sophocles)	Self-Blinding	Egoistic
Antigone	F	Antigone (Sophocles)	Hanging	Anomic
Heracles	M	The Trachinae (Sophocles)	Burning	Anomic
Hermione	F	Andromache (Euripides)	Suicidal Threats	Anomic
Phaedra	F	Hippolytus (Euripides)	Hanging	Anomic
Alcestis	F	Alcestis (Euripides)	Poisoned	Altruistic
Evadne	F	The Suppliants (Euripides)	Burning	Altruistic
Iphigenia	F	Iphigenia in Aulis (Euripides)	Axe	Altruistic
Macaria	F	The Heracleiadae (Euripides)	Knife	Altruistic
Menoeceus	F	The Phoenissae (Euripides)	Jumped	Altruistic
Polyxena	F	Hecuba (Euripides)	Sword	Altruistic

Note *M* Male, *F* Female *Source* Author

the truth of one's character. As far as suicide is concerned, Sophocles is a playwright of guilt, Euripides of anxiety. Guilt is more of an interpersonal emotion, while anxiety is more intrapersonal in nature.

Table 3.2 applies Durkheim's terminology to the much smaller number in biblical narratives. Only 6 suicides can be found in the Hebrew Scriptures, all by men (The Holy Scriptures, Jewish Publication Society of America, 1985). Three can be classified as egoistic (Ahitophel, Zimri, and Abimelech) and three are altruistic (Saul, Saul's armour bearer, and Samson).[4] The important point here is the far fewer number of suicides in Hebrew Scriptures. Whatever their motivation, it is important to emphasize the 16 suicides in the 26 surviving plays of Sophocles and Euripides (or 17 if we include the 7 surviving plays of Aeschylus) in comparison with the much smaller number of 6 occurring in biblical narratives.

Let us now offer some comparative statistics based on the total number of characters in these two source documents. As we mentioned above, there are approximately 246 characters appearing in the 26 plays of Sophocles and Euripides, many in more than one play. This yields a suicidal behaviour rate of 16/236 or 6.8%. If we include the 41 characters depicted in the plays of Aeschylus as well, we tally 17 suicides out of 277 characters or a slightly lower suicidal behaviour rate of 6.1%.

[4]Only one suicide, Judas Iscariot appears in the Christian New Testament, either by hanging (Matthew 27: 5) or falling and bursting open (Acts 1: 18, NASB interlinear Greek-English New Testament, 1984).

Table 3.2 Suicides in the Hebrew Bible

Character	Gender	Source	Method	Type
Saul	M	1 Sam. 31:4	Sword	Altruistic
		2 Sam. 1:6		
		1 Chron. 10:4		
Saul's armour bearer	M	1 Sam. 31:5	Sword	Altruistic
		1 Chron. 10:5		
Ahitophel	M	2 Sam. 17:23	Strangling	Egoistic
Zimri	M	1 Kings 16:18	Burning	Egoistic
Abimelech	M	Judg. 9:54	Sword	Egoistic
Samson	M	Judg. 16:30	Crushing	Altruistic

Note M Male, *F* Female *Source* Author

Table 3.3 Suicide-preventions in the Hebrew Bible

Character	Gender	Source	Method
Rebecca	F	Genesis 27–28	Appropriate matchmaking
Moses	M	Numbers 11	Support and practical advice
Elijah	M	1 Kings 18–19	Protected withdrawal and nurturance
Jonah	M	Jonah	Protected withdrawal and guidance
David	M	Psalms 22	Renewal of faith in God
Job	M	Job	Renewal of relationship

Note M Male, *F* Female *Source* Author

In contrast, some 2855 different people (2730 men and 125 women) are mentioned in the 39 books of the Hebrew Scriptures spanning a period of some 3330 years. Only six are identified as completed suicides (see Table 3.2), yielding an overall suicide rate of 6/2855 or .02%, including none by women. If we limit our estimate of the total number of biblical characters to the 1778 identified by one title or another such as King, Queen, Prophet, Judge Military Commander etc. (Ziffer, 2006), the suicide rate increases slightly to 6/1778 or 0.03%. Both of these rates are extremely significantly lower than the suicide rates emerging in Greek tragedy, whether we compare them to the sixteen suicides (6.8% suicide rates) for the 236 characters who appear in the 26 plays of Sophocles and Euripides (chi-squares = 133.13 and 80.03, p's < 0.0001 in both cases) or to the 6.1% suicide rate for the 277 characters when we include the 7 plays of Aeschylus (chi-squares = 121.69 and 72.84, $p < 0.0001$ in both cases).

In addition, the Hebrew Scriptures present a number of suicide-prevention narratives largely absent in Greek writings. In other words, the Hebrew Scriptures seem to provide a psychological stopper for people in despair, which seems unavailable to figures in the writings of the great Greek tragedians (see Table 3.3).

This chapter examines the reasons for this and distils this information to develop a hands-on, practical, and positive psychological approach to both treating people in despair and crisis, and even preventing them from reaching such a state in the first

place. It is devoted to the idea that ancient biblical narratives properly used in a psychologically sophisticated way can provide an antitragic view of life which can be usefully employed by the modern therapist or counsellor in treating suicidal patients. It is important to emphasize that these hopeful narratives provide a buttress even against a history of helpless personal experiences.

We review the evidence regarding seven risk factors for suicide: (1) feeling isolated and ignored; (2) feeling one's life is without meaning; (3) feeling exiled from one's home or homeland (feeling as a refugee or an outcast); (4) feeling unable to be oneself with others; (5) being raised in an foster home, and later feeling alone in one's life mission; (6) feeling abandoned by one's child leaving the family nest and building his/her own life; and (7) feeling doomed by a dysfunctional (even incestuous) family of origin. We compare Greek and biblical narratives regarding each of these factors, demonstrating how Greek narratives lead to self-destructive behaviours while biblical narratives provide a safe way out these dilemmas.

1. Feeling Isolated and Ignored: Treating the *Ajax Syndrome* with the *Elijah Intervention*

Feeling isolated and ignored can leave one feeling helpless and hopeless which can lead to suicidal behaviour. Durkheim (1897/1951), Dublin and Bunzel (1933), Dublin (1963), Choron (1972), Pretzel (1972), and Moustakas (1961) summarize sociological literature highlighting the importance of social isolation as a suicide risk factor. Dorpat and Ripley (1967), Margolin and Teicher (1968), Schneer, Perlstein, and Brozovsky (1975), Barter, Swaback, and Todd (1968), and Dorpat (1973) report early loss associated with completed suicides is associated with early interpersonal loss and attempted suicides with later loss in this regard (Douglas, 1967; Giddens, 1971; Maris, 1969).

Feeling isolated seems to be a risk factor for suicide across the life span. Finch and Poznanski (1971) found that in younger patients a suicide or suicide attempt may represent an attempt to reunite with a lost person (Lee, 1978). Bock and Weber (1972) studied suicide among older adults. They reported: (1) the widowed exhibited higher suicide rates than the married, (2) the widowed/widowers are more socially isolated than the married, partially accounting for the above differential in suicide rates, (3) the widowed can find in other relationships, alternatives to marriage which help prevent suicide, (4) widowers (male survivors) have greater difficulty than widows (female survivors) in substituting for the loss of their spouse, and (5) there are limits to effective mitigation of these alternatives for the widowed, especially widowers.

In a review of the effects of the empirical literature, Trout (1980) emphasized the direct role that social isolation plays in suicide. First, suicide attempters are appealing for help through suicidal behaviours; secondly, the character of the response is crucial in determining whether or not suicide will take place (see Kobler & Stotland, 1964, p. 252). However, Trout emphasizes that caring on the part of the helping contact is not be enough. What is required is the right kind of interaction allowing an individual to function adequately in significant interpersonal relations.

Let us compare the Greek suicide story of Ajax with the biblical suicide-prevention story of Elijah with regard to the suicidal implications of being isolated.

The *Ajax Syndrome*. After the death of Achilles in the Trojan War, a contest was staged to determine which of the Greek heroes would inherit his arms. Ajax's leading competitor for this prize is Odysseus, whom the Greek leaders choose over Ajax to receive Achilles' arms. Ajax feels his honour is stained and sets out at night to murder Agamemnon, the leader of the Greek forces in Troy and his brother Menelaus, whom he thinks are responsible for his misfortune. The goddess Athena, angry that Ajax had exhibited excessive pride by not giving her sufficient credit for his military successes, and because he had planned violence against his leaders, makes him mad. In his frenzy, Ajax slaughters some of the sheep in the army's flocks and leads others to his tent, thinking that he is killing/torturing the Greek leaders themselves. As his madness passes, Ajax realizes what he has done and retreats humiliated and despondent into his tent, not disguising his suicidal thoughts.

Ajax is portrayed as crying, something he had always refused to do as he had believed it "befitted cowards only" (l. 320). "Ah me, the mockery", he cries, and continues "To what shame am I brought low?" (l. 365). He shudders at the thought that Odysseus will laugh over his plight. Ajax says he will kill himself because his "former glory" is gone (l. 406). He reveals that he has failed to live up to his father's "stern rugged code" that he be a hero and that he was "plucked early from his mother's warm embraces" (ll. 545–582). When Odysseus receives the prize of Achilles' armour, Ajax is crushed by the feeling that he is "second best": this feeling has been compounded by becoming an absolute fool and a laughing-stock, a "sheep-killer". Ajax is overwhelmed by what has happened to him and sees no way out other than suicide. He has not received positive support from others — unsuccessfully calling for his brother Teucer to come—and wanders outside, alone, in despair. Teucer only belatedly sends a message to the Greek chieftains ordering that Ajax not leave his tent alone—Ajax has already fallen on his sword (Sophocles, *Ajax*, ll. 748–755, 848–849, and 865).

The *Elijah Intervention*. The biblical prophet Elijah represents a contrasting example of how to treat a depressed and suicidal person. In the midst of an ongoing conflict with Jezebel who wants to kill him (*I Kings* 19: 1–2). Elijah is at the end of his rope and says he cannot go on and expresses a wish to die (*I Kings* 19: 3–4). God is portrayed as listening to his prophet Elijah and taking his statement to heart. Elijah's plea is listened to and God sends an angel to Elijah providing him with food and drink and allowing him to rest (*I Kings* 19: 5–8). As a result, Elijah recovers his strength and goes on to Mt. Horeb. God also raises up young Elisha to help Elijah in his work (*I Kings* 19: 15–18). A contrast of these two narratives is presented in Table 3.4.

2. Feeling One's Life is Without Meaning: Treating the *Zeno Syndrome* with the *Job Intervention*

Feeling that one's life is without meaning or purpose is a terrible problem in modern society, leading the eminent psychiatrist and thinker Frankl (1962) to comment that "There is nothing in the world… that would so effectively help one to survive even the worst conditions, as the knowledge that there is a meaning in one's life" (p. 126). Within the current cultural climate in America and in much of the West, a reduction in these materialistic benchmarks for what is considered

Table 3.4 Elijah against Ajax

Stage	Ajax	Elijah
1. Precipitating stressor	Ajax is humiliated by both Agamemnon and Athena	Elijah is overwhelmed and exhausted from his harassment by Queen Jezebel
2. Reaction	Ajax says he wants to die	Elijah says he wants to die
3. Response of others	Ajax is allowed to leave his tent alone	Elijah is sent an angel who bring him food, drink and companionship and lets him rest
4. Effect	Ajax kills himself by falling on his sword	Elijah recovers his strength and continues on his mission to Horeb. He is given the younger Elisha to help him

Source Author

"successful" can lead to a personal loss of meaning and trigger an existential spiral that can lead to suicidal ideations and behaviours. This is essentially the biblical worldview, which extends beyond one's immediate personal, social, and cultural context, permitting people the psychological latitude to appreciate that what problems exist today may not persist forever.

Kleiman and Bearver (2013) have recently found that presence of meaning in life accurately predicted decreased suicidal ideation as well as lower lifetime chances of attempted suicides. Further, this research concludes that even the *search*—not necessarily the *presence*—for meaning in life also predicted decreased suicidal ideation. This line of research has been supported by findings by Heisel, Neufeld, and Flett (2015), who likewise concluded that there is a growing body of knowledge suggesting that establishing a personal meaning in life, contributes not only to general mental wellness and, but also decreases future incidents of suicidal contemplations later in life. In an intriguing study, Peterson, Seligman, Yurko, Martin, and Friedman (1998) report that catastrophizing (attributing bad outcomes to global causes) predicted mortality, especially accidents and violent deaths, for males.

Let us compare the Greek suicide story of Zeno and the biblical suicide-prevention story of Job with regard to the importance of having an intrinsic meaning-structure.

The *Zeno Syndrome*. The inability to create meaning in one's life often leads to feelings of utter despair. It can drive a person to very extreme, often destructive, attitudes to try to artificially manufacture meaning and purpose in one's life through clinging to misguided "signs" or "omens". In a state of despair, people are susceptible to gross distortions in their experiencing their world. According to the account of the ancient Greek chronicler Diogenes Laertius, Zeno, founder of the stoic school of philosophy, wrenched his toe on the way home from lecturing at the *Stoa* (porch). He catastrophizes this objectively minor mishap as a "sign from the Gods that he should depart" and voluntarily holds his breath until he dies (Diogenes Laertius, 1972, *Lives of Eminent Philosophers*, 7.28).

The medically impossible depiction of his suicide begs further consideration. Zeno holding his breath until death negates the involuntary aspect of breathing and

the biblical conception that God breathes life into man and takes it away (Gen. 2: 7). Zeno, like other Greek and Roman stoics, needs to control the conditions around his death, equating this control with a tragically tinged sense of freedom (Seneca, De Ira, 3.15.34). Why should Zeno kill himself after so seemingly minor an annoyance as wrenching his toe while Job is able to withstand much greater stressors? Consider first Zeno. The leap from wrenching one's toe to killing oneself seems monumental.

Understanding Zeno's actions necessitates examining more closely the stoic school of thought regarding suicide. Suicide must not be undertaken frivolously, "but if he (God) gives the signal to retreat as he did to Socrates, I must obey him who gives the signal, as I would a general" (Epictetus, 1885, Discourses, 1.29). Understanding Zeno's actions necessitates examining more closely the stoic school of thought regarding suicide.

In this quote, the contemporary writers, Droge and Tabor (1992, pp. 29–39), find a precedent for "rational suicide", which has provided the justification for physician-assisted suicide (PAS). But this only begs the question: why did Zeno interpret stubbing his toe as a signal from the Gods to depart when Job did not interpret his objectively far greater misfortunes? If this was the case, then Droge and Tabor may be correct in citing Zeno's actions as a precedent for rational suicide. However, they may not be focusing on what is rational in Zeno's act. *Zeno's rationality lies not in his interpretation that stubbing his toe represents a sign from the Gods that he should depart, but rather in his need for the events in his life to have meaning*. Zeno is ageing, feels alone, and deludes himself into thinking that the act of stubbing his toe has cosmic meaning. Its inherent rationality is not that stubbing his toe is a sign to depart, but that it is better to have a world in which one's actions are given meaning—even destructive meaning—than one in which they are not. In the absence of a religious system, which gives life meaning, Zeno is cast adrift, over-interpreting events in an attempt to feel less adrift and isolated. Zeno's over-interpretation may represent his attempt to find meaning and purpose in an otherwise hopeless and meaningless world.

The *Job Intervention*. The biblical figure of Job, in contrast, does not commit suicide despite being assailed by far more serious misfortunes—the loss of his wealth, his family, and his health. His friends tell him to admit he deserves his punishment, but he refuses because he knows it is not true (Job 4-32). He certainly complains bitterly but does not break his relationship with God. On the opposite extreme, his wife tells him to "curse God and die" (Job 2: 9). But he refuses this response as well. Job is deeply grieved and indeed wrestles with suicide, indeed stressing the same method of death, *strangling*, as did Zeno. "So that my soul chooseth strangling, and death, rather than these bones" (Job 7: 15). Strikingly, however, he differs from Zeno in not seeing "holding his breath (strangling)" as a voluntary act. Further, he does not act on this feeling, while reaffirming his relationship with his Creator: "Though He slay me, yet will I trust in Him" (Job 13: 15). Exline, Kaplan, and Grubbs (2012) point to the importance of arguing within a relationship without leaving it.

Job is anchored in a sense of a personal Creator who is with him from the moment of his birth and will be with him into his death and beyond. Thus, he can withstand far greater misfortune than can Zeno without the need to attribute cosmic meaning to it. This does not make Job less rational, but simply anchors his interpretive structure in his desire to live. Job follows the biblical injunction that one is born against one's will, dies against one's will, and expresses his freedom in the way he lives his life (*Pirke Aboth* 4.29). He overcomes major losses in his life by deepening his faith in his Creator who provides him with an inherent meaning for his life.

In contradistinction to Zeno who is improbably described as "holding his breath until he dies", the book of Job stresses that it is God himself that has given Job the breath of life. "The spirit of God hath made me, and the breath of the Almighty giveth me life" (Job 33: 4). If He withdraws that breath, man returns to the dust from which he sprung (cf. Psalms 104: 29). And when God restores the breath, man rises again and renews the face of the earth. "Thou sendest forth Thy spirit, they are created; and Thou renews the face of the earth" (Psalms 104: 30).

Job does not need to continuously search for such meaning through catastrophizing and over-interpreting relatively minor misfortunes. Job's God gives and takes away life, but does not give signals that it is time for Job to depart. Job is not obsessed with death nor does he need to control it or to worry that it is timely. Job does not interpret each event as a signal to exit, but as a challenge to live the life that has been given to him in dignity (see Kaplan, 2007). Life for Job has inherent meaning and purpose, and this represents the best alternative and antidote to the obsession of death with dignity and rational suicide so endemic to Zeno the Stoic and contemporary culture. Job's God gives and takes away life, but does not give signals that it is time for Job to depart. Job thus does not interpret each event as a signal to exit, but as a challenge to live the life that has been given to him in dignity. Life for Job has inherent meaning and purpose, and this represents the best alternative and antidote to the obsession with "death with dignity" and rational suicide so endemic to Zeno the Stoic and contemporary culture. A contrast of these two narratives is presented in Table 3.5.

3. **Feeling Exiled from One's Home or Homeland (as a Refugee or Outcast): Treating the *Coriolanus Syndrome* with the *David Intervention***

Feeling exiled from one's home experiencing oneself as a refugee can deprive a person of ability to creatively deal with adverse, even life-threatening situations. The prevalence of suicidal behaviours among refugee populations is difficult to reliably ascertain since official statistics are often not readily available. Nevertheless, it is impossible to ignore the many unofficial reports found in newspapers, magazines, and personal accounts. What we do know is that refugees and other asylum seekers experience a significantly higher rate of mental health issues, often surviving or witnessing a variety of physical and psychological trauma (Silove, Austin, & Steel, 2007).

As a group, empirical research has consistently shown that homeless and runaway minors more frequently suffer from abuse and neglect at the hands of their family members or caretakers, which also leads to an array of additional mental

Table 3.5 Job against Zeno

Stage	Zeno	Job
1. Precipitating stressor	Zeno the Stoic trips and stubs/breaks a toe on the way back from giving a lecture at the Stoa	Job suddenly and unexpectedly loses his property, his children, and his health
2. Reaction	Zeno interprets this as a sign from the Gods he should depart	Though Job complains, he maintains his innocence faith in God despite his misfortunes. This despite the reaction of his friends that he must be guilty and that of his wife that "he should curse God and die"
3. Response of others	No mention made of reaction of others	Job's friends tell him that he must be guilty and his wife tells him to curse God and die
4. Effect	Zeno immediately holds his breath until he dies	Job steadfastly maintains his faith in God while proclaiming his innocence and he is restored

Source Author

health issues, including depression, anxiety, and PTSD. They have lost their home, family, and social supports that many children/adolescents take for granted and may act violently toward themselves (Martin, Rozanes, Pierce, & Allison, 1995)

Many of these trends seem exaggerated among people forced to become refugees for social-political reason. In 1946, the population of Hong Kong was just over 1,000,000; by 1955, it had doubled and a third of the residents were political refugees. Using public records, Yap (1958) showed that the annual suicide rate rose in this period from a figure of 3–12 per 100,000. Ponizovsky, Ritsner, and Modai (1999) reported a significantly higher 6-month prevalence rate of suicide ideation among Russian Jewish immigrant adolescents to Israel (10.9%) than among a comparable sample of Jews remaining in Russia (3.5%). However, the suicide ideation rate of indigenous Israeli Jews was not significantly lower (8.7%) than that of the immigrants from Russia.

Carballo and Nerukar (2001) report that the aims of settlement policies of European Union countries have been largely ineffective. Despite the psychosocial risk factors experienced by migrants, relatively little is known about the dynamics involved or about what should and can be done to prevent or manage mental health problems related to migration. Language plays an important role in mental health and barriers to good communication compound feelings of isolation and being "unwanted". Among rural Turkish workers in Amsterdam, only a few are able to speak Dutch, and the capacity to function and integrate into mainstream society has often been limited. Anxiety is common, and over half say they regret their decision to emigrate.

In Germany, an estimated 13% of immigrants seen for depressive disorders develop problems during their initial 12 months away from home. Another 25% tend to have problems within the following 2–5 years. The relatively high incidence of depression among immigrants and their children in many EU countries has been associated with high rates of suicide, possibly linked to unemployment. In the

Netherlands, where the unemployment rate among migrants in 1994 was 31% compared to 13% for Dutch nationals, the suicide rate among children of immigrants was five times as likely as Dutch children. Children, particularly girls, of Surinamese immigrants had a suicide rate 27.6 times higher than that of Dutch children. In the UK, suicide rates for women from the Indian subcontinent are markedly higher than for men and are highest among girls ages 15–24. Suicide and attempted suicide among this immigrant group is two times the national average and 60% higher in the 25–34 age group.

In a cross-cultural, national study of all immigrant groups in Sweden, Ferrada-Noli (1997) analysed over 10,000 suicides and undetermined cases occurring during the period 1987–1991. The results indicated an overrepresentation of immigrants in the Swedish suicide statistics. This overrepresentation was statistically significant among immigrants in Sweden from Russia, Finland, Germany, Denmark, and Norway. Other nationalities with an increased suicide incidence were from Poland, Hungary, Czechoslovakia, Austria, Korea, The Netherlands, France, Spain, and Uruguay—a 1.5% higher risk than that for a native Swede. Furthermore, the increased suicide rates observed among the immigrant groups in Sweden were found to be higher than in the respective countries of origin for 90% of the nationalities involved. In a follow-up paper, Ferrada-Noli (2014) reports suicide among immigrants had increased 10.3% in 2012.

Rahman and Hafeez (2003, p. 393) found that 91% of Afghan women who had been residing in a refugee camp in Pakistan who were screened positive as meeting criteria for common mental disorders (e.g. major depression, PTSD, etc.) experienced a notable frequency of suicidal thoughts in the previous month, with 8% rating suicidal feelings as representing their most prominent psychological stressor. Cohen (2008) has suggested that the lack of help-seeking behaviours among refugees is due to a reticence to trust official healthcare systems as well as cultural stigma around psychological disorders has posed challenges to providing preventive interventions, which is often compounded by social isolation, prior histories of mental health concerns, and lack of mental health services.

Ao et al. (2012), Ellis et al. (2015), and Hagaman et al. (2016) report an increase of suicides among Bhutanese refugees to the USA between 2009 and 2012. Results identify overall factors such as disappointment with current unemployment, lack of resettlement services and social supports, and separation from family as potential trigger factors for suicide.

In non-refugee populations, these aforementioned dynamics likewise exist, but become manifest in different ways. The importance of a robust social support system in close proximity to the suicidal individual perhaps represents the most potent protective factor (daCosta, 1994), as does increasing the quality of clinical and communications training among frontline healthcare workers (Wahoush, 2009). The need for meaningful culturally sensitive training around assessing for suicidality has increasingly garnered support in both clinical and research circles.

Let us compare the Roman story of Coriolanus and the biblical story of David with regard to constructively dealing with the experience of exile and/or being a refugee from one's homeland.

The *Coriolanus Syndrome*. Roman historians (see Plutarch, 1909 and Livy [Titus Livius], 1960) and Shakespeare (1967) tell of the legendary Roman commander Gnaeus Marcius whose military valour at Corioli against the Volsci, the enemies of Rome in the fifth century BCE, won him the honorary name of Coriolanus. Plutarch describes Marcius as a man of great energy and strength of purpose but combined with so violent a temper and self-assertion that he could not cooperate with people. Indifferent to hardship, pleasure, or money, he trained himself always for war. Honours in battle never satisfied him, fearful that he would fall short of what he had achieved before. After his heroism and brilliance in defeating the Volsci, Marcius becomes embroiled in angry arguments between the upper and lower classes of Rome, and his outspoken insults to the plebeian's leads to his banishment and almost his execution, despite his glorious military services.

Infuriated and obsessed with wreaking revenge on Rome, Marcius (Coriolanus) goes to the Volsci and persuades them to attack Rome. As Marcius' Volsci army sits camped before Rome, two delegations came from the city but cannot persuade him to desist. Roman women then came forth spontaneously to the camp, accompanied by Marcius's mother (Volumnia), his wife, and children. Volumnia breaks through Marcius's harshness by telling him, "You cannot attack Rome unless you trample on the body of the mother that bore you". Marcius breaks down and withdraws the Volsci army. Plutarch says he is murdered by the Volsci shortly after this withdrawal. Livy in his history of Rome tells of another report that Marcius in fact lived on for many years and endured the miseries of exile. Shakespeare brings down the Plutarch version.

Marcius, an intelligent, able man, was neither greedy nor petty, but his loyalty is focused to his own inhuman self-imposed code of behaviour. Yet his behaviour is rigid in the most self-destructive way. His actions show no love for Rome. He displays scars of his many battle wounds, but no sweetness in his manner or thought. Marcius is ultimately loyal neither to his Gods nor his nation, nor even his own children. Rome is for him largely a vehicle to act out his powerful inner drives. Though not a suicide story per se, there is no question that the rigidity of Coriolanus is a factor in his death.

The *David Intervention*. Like Coriolanus, the biblical David was a war hero, but of a very different sort. He is described as playing the lyre for King Saul and is loved by the people. He slays the Philistine giant Goliath not by brute strength but through agility and the use of a simple slingshot. Later, his life threatened because of the jealousy of King Saul, David flees his native Israel with a band of men to live under the Philistines, longtime foes of Israel (I Samuel 27). Yet here the similarity to Marcius ends. David leaves not because he hates his countrymen but to save his life from King Saul's anger against him. Perhaps. Most important, David is no perfectionist but remains deeply human. Even in exile, David does not turn from his love of his king, his people, and of God, despite the King Saul's murderous anger towards him. Love is an existential element of David's being, and his loyalties were founded on love, not merely on his own rigid personal disciplines. In the period that David and his troop live among the Philistines, he carefully avoids doing harm to Israel. Although he does lead his troops in war against common enemies of Israel

Table 3.6 David against Coriolanus

Stage	Coriolanus	David
1. Precipitating stressor	Coriolanus, a Roman military hero, antagonizes his countrymen and is exiled from Rome	David, a military hero in Israel, flees from Israel to escape Saul's murderous jealousy and wrath
2. Reaction	Coriolanus joins the Volsci, the enemy of Rome, in order to wreak vengeance against Rome	David joins the Philistines, the enemy of Israel, but maintains his love of Israel
3. Response of others	The Romans fear Coriolanus will lead the Volsci in battle against Rome, yet he is still not trusted by the Volsci. Coriolanus is dissuaded from leading the Volsci against Rome by the pleas of his mother, Volumnia, and his wife, and children	David is able to avoid fighting against his beloved Israelites, attacking instead common enemies of Israel and the Philistines
4. Effect	Coriolanus withdraws the Volsci from attacking Rome but remains condescending to the Volsci and is killed by them	David is spared fighting against the Israelites and is this able to be loyal both to King Achish of the Philistines and King Saul of Israel. David subsequently becomes King of Israel

Source Author

and the Philistines, he is spared the conflict of having to fight for King Achish of the Philistines in a decisive battle against Israel in which Saul and his son Johnathan are both killed (1 Samuel 29: 6–11). And as a result of this, David ultimately becomes King of Israel after Saul's death in battle at the hands of the Philistines. As king, David (2 Samuel 6: 12–23) does not show contempt toward the common people as Coriolanus did to the plebeians in Rome. Rather, David dances with the people when the ark is brought into Jerusalem, even though this earns him the contempt of his wife Michal. A contrast of these two narratives is presented in Table 3.6.

4. **Feeling One is Unable to be Oneself with Others: Treating the *Narcissus Syndrome* with the *Jonah Intervention***

The profound disillusionment that accompanies feeling unable to be oneself with others can lead to an endless cycling between plunging into a relationship because of loneliness and leaving that same relationship because of boredom, and a feeling that one cannot be oneself (Kaplan & Worth, 1993). Unsurprisingly, depression is the most common psychiatric disorder present among completed suicides, occurring in half to two-thirds of cases (Conwell, 1996; Harwood, Hawton, Hope, & Jacoby, 2001; Henriksson et al., 1993; Pearson & Conwell, 1996; Rich, Young, & Fowler, 1986).

A recent study and review article by Skodlar, Tomori, and Parnas (2008) points to two main sources for suicidal ideation in their sample of schizophrenia patients and in a number of studies (Inskip, Harris, & Barraclough, 1998; Nyman & Jonsson, 1986; Palmer, Pankratz, & Bostwick, 2005; Rossau, & Mortenson, 1997; Wiersma, Nienhuis, Slooff, & Giel, 1998). Solitude with inability to participate in human interactions and feelings of inferiority were found to be the main sources of suicidal

ideation. These experiences resemble ordinary depressive reactions, yet they may be reflective of a more basic self-alienation and incapacity for immersion in the shared world. In a follow-up study, Skodlar and Parnas (2010) reported that these two factors were associated with disturbances measured by the Examination of Anomalous Self-Experience Scale, that is, disorder of self-awareness and self-presence. The work of Kaplan and Harrow and their associates has examined the prospective course of suicidal behaviour for initially hospitalized psychiatric patients over twenty years delineated by diagnostic group, gender, and risk factors including positive and negative symptoms and overall functioning (Kaplan & Harrow, 1996, 1999; Kaplan, Harrow, & Clews, 2016; Kaplan, Harrow, & Faull, 2012).

Suicide is a significant problem among the older adult population (ages 60–75). An older adult of this age may report that many previous achievements have proved meaningless and many of his or her dreams are now out of grasp. Darbonne (1969) found that suicide notes of elderly individuals included more references to loneliness and isolation than those of any other age group. Miller (1979) found that older men who committed suicide were three times less likely to have a confidante than those who died of natural causes. Widowhood and social isolation have been shown to increase the risk of suicide, especially among elderly males during the first six months of bereavement (Benson & Brodie, 1975; Berardo, 1968, 1970; Bock & Webber, 1972; MacMahon & Pugh, 1965).

Among the oldest-old (76 plus), suicide may be triggered by physical decline and awareness of one's mortality and life-finiteness. One expression is that Cumming and Henry (1961) have labelled disengagement which is indicated by increased preoccupation with the self and decreasing emotional investments in persons and objects in their environment. While Lawton (1980) has reported that residents of institutions of the aged seek out areas of high activity, activity per se was not found to be significantly related to life satisfaction (Lemon, Bengston, & Peterson, 1972)

Let us compare the Greek suicide story of Narcissus with the biblical suicide-prevention story of Jonah with regard to the importance of being able to integrate self and other.

The *Narcissus Syndrome*. Greek thought sees self and other as fundamentally opposed. One wins at the expense of another losing. The Apollonian side of Greek culture represents a walled-off and disengaged intellect. The Dionysiac side portrays an enmeshment which destroys individual boundaries. The terms "narcissism" and "narcissistic" have become almost bromides in modern society to describe people who are extremely selfish and self-involved. The actual story of Narcissus provides a much richer and disturbing picture ending in his suicide. Strangely, the suicidal end of the story is largely ignored in modern psychology and psychiatry. Narcissus cannot successfully integrate self and other.

The earliest sources of the myth of Narcissus have long since been lost. Our most complete account from antiquity is in Ovid's *Metamorphoses*, 1989) (cs. 43 BCE to 17 CE). Narcissus is born out of a rape of his mother Lirope by a river God. When Lirope enquires from the Greek seer Tiresias about whether her son will live to a ripe old age she receives a strange answer: He [Narcissus]will live

a long life as long as he does not come to know himself (ibid, 3: 343–350). In reality, he is tragically self-empty.

Narcissus grows to be a vain young man, so physically beautiful that many fall in love with him by simply looking at him (ibid, 3: 359–378). Narcissus seems to be self-absorbed, treating his lovers of both sexes as mere mirrors of himself. Echo, the nymph who loves Narcissus in vain, is transformed, left merely repeating the words he says—as an echo (ibid, 3: 379–352). One would-be lover who feels scorned prays to the God of fate, Nemesis, and asks that Narcissus too fall hopelessly in love and be unable to achieve his desire (ibid, 3: 405–406). Soon, Narcissus sees a beautiful youth in a pond, not realizing it is his own reflection. Narcissus is obsessed with the image in the brook and looks at it night and day (ibid, 3: 414–454).

Ultimately, however, Narcissus recognizes the face in the brook is his (ibid, 3: 463–473). The reflection becomes simultaneously an ideal and a mirror. He is not self-invested, but self-empty, driven to grasp his self, which has now been projected onto the outside world. Such a psychotic juxtaposition rips Narcissus apart. As Ovid expressed it, "How I wish I could separate myself from my body". Narcissus finally becomes aware of the unobtainability of the figure he sees in the pond—it is his own reflection. He pines away until he dies, mourning the youth he loves in vain.

The suicidogenic element in the myth of Narcissus is the inability of Narcissus to successfully integrate his individuation and attachment behaviours. First he is individuated at the expense of attachment (egoistic); then, he is attached at the expense of individuation (i.e. altruistic). Finally, he is overwhelmed by the irreconcilable confusion between his individuation and attachment issues (i.e., anomic) and resolves the conflict through self-murder, described in Ovid (ibid, 3: 497–50) as pining away, and in Conon as actively stabbing himself in his chest (Conon, 1798, *Narrationes*, 24).

The *Jonah Intervention*. The story of Jonah begins with Jonah placed in an essentially similar individuation-attachment dilemma. God calls on Jonah to go to warn the people of Nineveh of their wickedness. Jonah does not want to go, but he is too God-fearing to defy the command and too strong-willed to submit. In desperation, he flees to Tarshish and boards a ship. However God sends a ferocious storm and Jonah attempts to hide in the bowels of the ship. When his identity as a Hebrew is discovered, Jonah tells his shipmates to throw him overboard (Jonah 1: 1–12). The story could thus end in Jonah's suicide, but it does not—God intervenes as a protective parent, swallowing Jonah in the protective stomach of a great fish until he overcomes his confusion. Jonah prays to God from the belly of the fish until he becomes stronger. Then, the fish vomits him out on dry land (Jonah 2).

This pattern repeats itself. God again commands Jonah to go to Nineveh. This time Jonah goes and gives the people God's message. They repent and are saved (Jonah 3: 1–10). Jonah becomes angry and again expresses the wish to die and sits on the outskirts of the city (Jonah 4: 1–3). Again, God intervenes, sheltering Jonah with a leafy bush from the burning sun (Jonah 4: 6). After a worm destroys the protective bush, Jonah again expresses suicidal thoughts (Jonah 4: 7–8). God intervenes, this time engaging Jonah in a dialogue to teach him the message of *teshuvah* (repentance) and divine mercy and that he can reach out to another

without losing himself (Jonah 4: 9–11). Biblical thinking sees self and other in harmony. Jonah avoids the polarities of disengagement and enmeshment. In the words of the biblical sage, Hillel, "If I am not for myself, who will be for me? If I am only for myself, what am I? If not now, when?" (*Pirke Aboth* 1: 14). A contrast of these two narratives is presented in Table 3.7.

5. **Feeling as an Adopted Child that one is Alone and Unsupported in One's Life Mission: Treating the *Oedipus Syndrome* with the *Moses Intervention***

Depression, impulsivity, and aggression during adolescence have been associated with both adoption and suicidal behaviour. In a landmark secondary analysis on data from the National Longitudinal Study of Adolescent Health, Slap, Goodman, and Huang (2001) report that attempted suicide is more common among adolescents who live with adoptive parents than among adolescents who live with biological parents. This association persists after adjusting for depression and aggression and is not explained by impulsivity as measured by a reported tendency

Table 3.7 Jonah against Narcissus

Stage	Narcissus	Jonah
1. Precipitating stressor	Narcissus born of a rape of his mother. Prophesied to have a long life as long as "He does not come to know himself"	God asks Jonah to go and warn the wicked people of Nineveh to repent lest they avoid great punishment. Jonah does not want to go and runs away to Tarshish to avoid the conflict and boards a ship.
2. Reaction	The beautiful Narcissus heartlessly exhibits *hubris* by rejecting would-be lovers of both genders	God sends a great storm and Jonah tries to hide in the bowels of the ship. When his identity as a Hebrew is discovered, Jonah instructs his shipmates to throw him overboard. However, rather than let him drown, God sends a big fish to swallow Jonah and protect him, and allowing him to recover his strength
3. Response of others	Narcissus is brought down by *Nemesis* and becomes completely infatuated with a face he encounters in a brook	After the fish vomits out the restored Jonah unto dry land, God again asks him to go to Nineveh to warm its inhabitants to repent and change their ways
4. Effect	Narcissus realizes the face in the brook is his, and thus unobtainable. He commits suicide, either in a passive (pining away) or active (stabbing himself) manner, depending on the source	Jonah warns the people of Nineveh but becomes suicidal again and sits outside the city walls under a hot sun. God again protects Jonah through shielding him from the sun with a large gourd. Ultimately God removes the gourd and, in addressing Jonah's complaint, teaches him the lesson of mercy and compassion, and that he does not have to lose himself in reaching out to others

Source Author

to quickly make decisions. Yet another report finds no significant differences between the adopted and the non-adopted in attempting suicide (Feigleman, 2001).

Both the Slap et al. (2001) and Feigelman (2001) studies provide concise reviews on the conflicting conclusions about adoptee mental health (see Feigleman, 2005). Slap et al. (2001) argue that although a few studies find adoptees, showing better adjustment than the non-adopted on some criteria, a somewhat larger number find no differences between the adopted and the non-adopted, and the greatest number of past studies shows adoptees less well-adjusted than the non-adopted. One of the few factors most analysts agree on is that adoptees are overrepresented among counselling patients (Miller, Fan, Christensen, Grotevant & van Dulmen 2000).

In a more recent study, Anderson (2011) reports that child youth who enter the child welfare system and are put in an out-of-home placement can aggravate the existing health problems and may be at an increased risk for developing depressive symptoms, which has been shown to increase the risk for suicidal ideation. Being put in an out-of-home placement can aggravate and even compound existing psychological maladies (Harden, 2004; Newton, Litrownik, and Landsverk (2000). Elevated risk of mental health outcomes such as depression continues due to the unusual stresses inherent in their situation, namely frequent relocations and temporary to prolonged separation from family of origin (Rubin et al., 2004, 2007; Taussig, Clyman, & Landsverk, 2001.)

A penetrating demographic study by Berlin (1987) points to the deleterious effects of deculturation on increasingly suicidal native-American adolescents in the previous decade. Berlin identifies a number of factors characterizing tribes with high suicide rates, involving lack of cultural supports, including failure to adhere to traditional ways of living, to traditional religion, to clans and societies and the resulting chaotic family structure and adult alcoholism.

An excellent review article by Heikkinen, Aro, and Lonnqvist (1993) highlights the role of social support in modifying the effects of adverse life evens with regard to suicidal behaviour. They conclude that social support was weaker among suicides, as measured by living alone, number of close friends, residence changes, and interaction between family members. Losses that significantly affect the social support system appear to function as a long-term risk factor for suicide, probably by causing social isolation and depression among the bereaved. Eisenberg, Gollust, Golberstein, and Hefiner (2007) proposed that an individual's emotions are related to negative feelings and emotional intensity and that emotional regulation is the way an individual manages emotions. The researchers found that high emotional in intensity in the subjects was associated with aggression and avoidance coping mechanisms and increased tendency toward anger. Children who were viewed as highly socially competent were found to cope with anger in non-aggressive ways.

According to Joiner, Van Orden, Witte, and Rudd (2009)'s interpersonal theory of suicide, stresses related to feeling rejected from others—what Joiner refers to as "thwarted belongingness", which amounts to a visceral sense that one is utterly unable to form meaningful connections with others—often increases an individual's desire and risk for suicide. Feeling disconnected from others, particularly those who most people rely upon for emotional support can result in loneliness and isolation

and a deep sense of personal lack of meaning in one's life. Joiner also emphasizes the role that feeling one is a burden plays into suicidal thoughts and actions. This attitude is dangerous since it is based on the fundamental misperception that a suicidal individual's family and friends would be better off if they were dead. DeCatanzaro (1995), for example, concluded that perceived burdensomeness directed towards family correlated with suicidal ideation among community participants and high-suicide-risk groups, such as military veterans and those with chronic mental health issues.

In a series of novel studies aimed at providing direct support for this theory, Joiner, Pettit, Walker, and Voelz (2002) showed that trained raters reliably detected a substantial number of expressions of burdensomeness in suicide notes. More specifically, these studies confirmed that the notes of people who had died by suicide revealed a greater sense of being a burden to others compared to those that survived suicide attempts as well as those who died by violent means and those who died by less violent mean. This feeling of being a burden may be an underlying issue in the higher suicide rates among some adopted children. Even when controlling for dominant suicide-related covariates like hopelessness, Van Orden, Lynam, Hollar, and Joiner (2006) found that a degree of perceived burdensomeness acted as robust predictor of suicide attempt status and of current suicidal ideations among those engaged in outpatient treatment.

Let us compare the Greek suicide/self-mutilation story of Oedipus with the biblical suicide-prevention story of Moses with regard to addressing the suicidal implications of feeling one is alone in one's life mission.

The *Oedipus Syndrome*. Laius, King of Thebes, hears from an oracle that his newborn son Oedipus will murder him and marry his wife when/if he grows up. He unsuccessfully attempts to have him killed but Oedipus is saved by a kindly shepherd and raised by the King and Queen of Corinth and grows up thinking that they are his natural parents. Hearing from an Oracle that he is destined to kill his father and marry his mother, Oedipus flees to Thebes, trying to avoid his fate and he unknowingly fulfils it, thinking they are his natural parents. As a young man, he hears his identity questioned at a dinner party. Oedipus goes to the Oracle of Delphi to try to understand his identity.

The Oracle does not answer him but warns him that he is destined to kill his father Laius and marry his mother. However, the oracle withholds the critical information that Oedipus's biological parents were not the King and Queen of Corinth. To avoid this "fate", Oedipus runs back to Thebes, bringing about what he is trying desperately to avoid: he kills his biological father and marries his mother and begets four children with her. Oedipus, basically a kind and concerned ruler, is concerned about the plague infesting Thebes and tries vigorously to find its cause, not realizing it was his own act. However, he does this largely alone, his questions answered by riddles from the Oracle of Delphi, convoluted responses from the prophet Teiresias, and some attempts of help from his brother-in-law Creon.

However, he does not really trust Creon, so he is basically alone in his quest for the source of the plague. Despite warnings from both Teiresias and his wife-mother Jocasta to desist in his quest, Oedipus plunges blindly ahead. His quest ends in the

most dreadful destruction for Oedipus and his family. Jocasta hangs herself, Oedipus blinds himself, curses their two sons, Eteocles and Polyneices who kill each other at the Seventh Gate of Thebe, and his daughter Antigone hangs herself before the state could execute her by sealing her into a cave. Nowhere does Oedipus receive any real help he can fully trust. He is acting largely alone in his quest to uncover the truth (Sophocles, *Oedipus Rex*; Aeschylus, *the Seven against Thebes*).

Oedipus is a rather solitary figure when he reemerges in Thebes. When he is faced with the daunting tasks of first, solving the riddle of the Sphinx, and subsequently, of uncovering the source of the plague devastating Thebes, Oedipus basically acts alone. He is surrounded by Sphinxes and oracles he must outwit and interpret. The people around him do not help, answering his requests for help in ambiguous riddles and incomplete information. He does not know whom to believe and pursues a path that ultimately leads to his self-blinding and the death of others close to him.

The *Moses Intervention*. For Moses also, birth brought danger of death, but from different sources. Moses' life is threatened by Pharaoh's decree to throw all males born among the Israelites into the Nile. Oedipus' life is threatened by his own father, Laius, who perceives his son's life as a threat to his own and therefore orders Oedipus to be killed at birth. Whereas Oedipus is sent out from his natural home in order to be killed, Moses is sent away by his natural family to be saved.

As infants, both Moses and Oedipus end up in the house of a king. But the differences are more telling: King Polybus is a good man, who takes in the baby Oedipus, whereas Pharaoh is the "villain of the piece". In fact, were it not for Pharaoh's decree, Moses would never have had to be sent away from his parents' home. In the Oedipus narrative, it is Laius himself who is responsible for his son's exile. Significantly, Moses' biological parents are aware of his whereabouts, Moses' mother and sister conspire to save the boy's life, and he is raised in the house of Pharaoh himself.

Moses is portrayed in a quite different manner. He seems guided by his conscience and circumstances and does not consciously attempt to seek clues about his destiny. From the account of Moses going among his Hebrew "brethren", one can see his latent identification: he kills an Egyptian attacking a Hebrew (Exodus 2: 11–12). Moses subsequently chances upon the burning bush and encounters the Hebrew God, who informs him of his mission to save the Children of Israel from Pharaoh. Yet Moses has a speech impediment—he stutters—and is genuinely helped in his mission by his older brother Aaron who does the public speaking for him (Exodus 7). Despite Moses' misgivings as to his own abilities, he does ultimately agree to God's call and leads the Children of Israel out of slavery.

Yet he subsequently does feel overwhelmed by his task and unable to go on, crying to God in his despair:

> … Wherefore hast Thou dealt ill with Thy servant? And wherefore have I not found favor in Thy sight, that they layest the burden of all this people on me? Have I conceived all this people? Have I brought them forth, that Thou shouldest say unto me: Carry them in thy bosom, as a nursing-father carrieth the suckling child, unto the land which thou did swear unto their fathers (Numbers 11:12)….

Table 3.8 Moses against Oedipus

Stage	Oedipus	Moses
1. Precipitating stressor	Oedipus's mother sends the infant Oedipus away to be exposed on mountain top and die	Moses' mother sends the infant Moses away to save him from being killed by Pharaoh
2. Reaction	Oedipus is rescued and raised by the king of a neighbouring state, Corinth. He had no knowledge of his biological parents	Moses is rescued and raised by the daughter of Pharaoh. She brings his natural mother to serve as his nursemaid, though he presumably does not know who she is
3. Response of others	Oedipus's identity is questioned and he has no one to talk to. He attempts unsuccessfully to gain usable information from the Oracle of Delphi, who speaks in riddles and entraps Oedipus into patricide and incest	Moses sees an Egyptian mistreating an Israelite and kills him with a rock. He flees Egypt but God appears to Moses and chooses him to lead the Israelites against Egypt
4. Effect	Oedipus attempts to save Thebes form a plague but is undone by misinformation and riddles from others and results in Oedipus's self-blinding as well as many killings and suicides	Moses receives necessary help at various times in his mission (Aaron, a Sanhedrin, etc.) and is able to carry out his mission

Source Author

The demands are too great and Moses feels inadequate to the task. He doubts all the people can be provided for. "Whence should I have flesh to give unto all this people?" (Numbers 11:13, 21–23). Moses blames himself. "I am not able to bear all these people myself alone because it is too heavy for me" (Numbers 11:14). And then challenging, God to kill him, Moses cries out: "If thou deal thus with me, kill me, I pray Thee, out of hand, if I have found favor in Thy sight; and let me look upon my wretchedness" (Numbers 11:15; also see Selinger (1998)). God responds and provides him with the help of seventy people, a Sanhedrin, to share Moses' burden (Numbers 11:16–7).

Moses, in contrast to Oedipus, has significant help at various points in his life. First, Moses, being a stutterer, has Aaron as a mouthpiece. Secondly, he is presented with the recommendation to establish a hierarchal judiciary system to help him delegate the burden of leading a growing society based on a moral and legal system. A contrast of these two narratives is presented in Table 3.8.

6. **Feeling Abandoned by One's Child Leaving the Family Nest and Building His/Her Own Life: Treating the *Phaedra Syndrome* with the *Rebecca Intervention***

Clinicians have observed a "temporal though not necessarily causal, relationship between the termination of child rearing and clinical depression" (Deykin, et al., 1966). Bart (1971) reports that middle-age women in psychiatric hospitals stated that they had become depressed with their child leaving home, particularly those who had been overinvolved in the mother role and who were not employed outside

the house. Both suggest that depression is a function both of loss of the parental role and the lack of compensatory roles.

In contrast, household surveys using self-report mental health measures have found evidence inconsistent with the "empty nest syndrome". The presence of children in the home has frequently been associated with more symptoms of distress (Bernard, 1974a, b) and lower life satisfaction (Campbell, Converse, & Rodgers, 1976). Radloff (1980) conducted a large mental health interview of 3,000 adults in two communities. She reported that parents whose children were not living with them were significantly less depressed than those whose children were still living with them.

A factor that may moderate the experience of the empty nest period is whether engages in paid employment and indeed has a career. An innovative idea in this regard is the "crossover hypothesis" offered by Guttman (1975), Neugarten (1968), and Rossi (1980) which contends that women who focus on their nurturant needs early in adulthood, though active involvement in motherhood, by midlife may be motivated to satisfy their as yet unmet achievement needs.

A study by Hobdy et al. (2007) examined the relationship between a person's attachment style and both adjustment and coping processes in adults during two specific life events involving both the loss of and a renegotiation of an attachment relationship: the launching of children from the family of origin and job loss. The data support the notion that securely attached individuals may be more equipped to meet developmental life challenges in adulthood and extend previous work that was limited to women and the empty nest.

What can we conclude from all this? The parent, especially the mother, can indeed under some circumstances, experience depression and even possible suicidal impulses in reaction to her now grown-up child leaving the family nest. Yet parents, especially mothers, are not all the same. Those with insecure attachment styles are more prone to pathological responses to their offspring going out on their own to build their own lives than are those with secure attachment styles.

Let us compare the Greek suicide story of Phaedra with the biblical suicide-prevention story of Rebecca with regard to addressing the suicidal implications of feeling one's child is going on to live his/her own life.

The *Phaedra Syndrome*. In Euripides' *Hippolytus*, Phaedra, the wife of King Theseus of Athens, is caught in a miserable family situation and at the same time she has unrealistic expectations of herself. By the goddess Aphrodite's design, she falls madly in love with her stepson, Hippolytus. Though she resists her passion, with great misery to herself, her servant betrays her secret to Hippolytus. Phaedra then hangs herself (ll. 776–779), leaving behind a note that falsely accuses Hippolytus of raping her (ll. 882–898). Theseus believes the note and pronounces a curse of death on his son. The curse is soon fulfilled, and the truth of Hippolytus's innocence is revealed too late. According to this play, the Gods are selfish and cruel, utterly without compassion towards humans. Aphrodite plots to destroy

Hippolytus for living in chastity: she has filled his stepmother, Phaedra, with passion for him and has turned the heart of his father against him.

Phaedra mixes an exaggerated sense of honour and guilt with a tendency towards self-punishment: "My hands are pure, but on my soul there rests stain" (317). She must hide her passion to save her honour: "Alas for thee! My sorrows, shouldn't thou learn they would recoil on thee" (327)—even if it means suicide: "Out of shame I am planning an honorable escape" (331). The nurse accuses her of trying to be better than the Gods: "O cease, my darling child, from evil thoughts, let wanton pride be gone, for this is naught else, this wish to rival Gods in perfectness" (474–475). There is no stopper in Phaedra's rush towards suicide. She is too overwrought to remain silent, Aphrodite works against her, and her nurse betrays her by spilling the secret of her passion.

When discretion and good sense fail, death seems to be the only cure: "And last when I could not succeed in mastering love hereby, me thought it best to die; and none can gainsay my purpose" (397). As she expresses it with finality, "I know only one way, one cure for these my woes, and that is instant death" (599). Phaedra's punitive conscience is accompanied by low self-esteem engendered by her fears of misogyny and her unhappiness and helplessness at being a woman. This view is echoed by the chorus and by Hippolytus, who delivers a particularly sharp attack on women. Women are vile and filthy: "I can never satisfy my hate for women, no! Not even though some say this is ever my theme, for of a truth they always are evil. So either let someone prove them chaste, or let me still trample on them forever" (665–667).

Phaedra suffers under the burden of a family background that rivals that of Oedipus. Her mother had slept with a white bull, her sister had been raped by Dionysus, and she herself is the "third to suffer" (337–340): "That 'love' has been our curse from time long past" (343). She fears most that her passion for Hippolytus will become known and that she will be seen as a traitor to her husband and children. She would rather die: "This it is that calls on me to die, kind friends, that so I may ne'er be found to have disgraced my lord, or the children I have borne" (426–427). Phaedra struggles to free herself and her children from her family pattern, but she is too enmeshed to succeed and destroys both herself and Hippolytus.

The most common legend regarding Hippolytus states that he is killed after rejecting the advances of Phaedra, his stepmother, the second wife of Theseus. Spurned, Phaedra deceives Theseus saying that his son had raped her. Theseus, furious, used one of the three wishes given to him by Poseidon to curse Hippolytus. Poseidon sends a sea-monster—or, alternatively, Dionysus sends a wild bull—to terrorize Hippolytus's horses, who drag their rider to his death.

In his last breath, Hippolytus also laments that he is bound by a miserable family past that cannot be expiated: there is neither repentance nor forgiveness. Hippolytus is special to Artemis, but she cannot help him in his final pains. She leaves before his death, the sight of which would be pollution to her: "And now farewell! Tis not for me to gaze upon the dead, or pollute my sight with death scenes, and e'en now I see thee nigh that evil" (1432–1433).

Phaedra lives in a world in which her Gods and her family have been at best uncaring, in which her individuality and womanhood are despised, and in which error cannot be corrected. Caught in a conflict between the goddesses Aphrodite and Artemis, Phaedra sees no way out but suicide. The revealing of her forbidden passion for her stepson leads to her suicide.

The *Rebecca Intervention*. The story of the biblical matriarch Rebecca is very different. After participating in the deception by which they have obtained Isaac's blessing, Rebecca tells Jacob to go away to her brother Laban, so that he will not be killed by his brother Esau who feels that Jacob has stolen his father's blessing that rightly belongs to him (Gen. 27: 42–45). Immediately afterwards, Rebecca tells Isaac that her life has been made miserable by Esau's Hittite wives, and she worries that Jacob may similarly marry a daughter of Heth, the Cannanite: and Rebecca said to Isaac, "I am weary of my life because of the daughters of Heth. If Jacob takes a wife of the daughters of Heth, like these who are the daughters of the land, what good shall my life be to me?" (Gen. 27: 46).

Although this has been read as a "suicidal ideation" narrative, such an interpretation may be somewhat overdrawn. Rebecca's words seem more like a message to her husband: "Please fix this situation because I can't stand it!". In any case, the tactic works, and Isaac commands Jacob to not marry one of the daughters of Canaan, who are so offensive to Rebecca and instead tells him to go to Laban and marry one of his daughters. Rebecca is relieved, and there is no more mention of her "suicidal" musings (Gen. 28: 1–4). Rebecca is not being seductive toward her son, nor is she trying to block him from living his own life. What she wants is that Jacob marries a suitable partner. When Isaac listens to her, Rebecca's suicidal impulse is resolved. A contrast of these two narratives is presented in Table 3.9.

Table 3.9 Rebecca against Phaedra

Stage	Phaedra	Rebecca
1. Precipitating stressor	Phaedra falls passionately in love with her stepson Hippolytus, wanting him for herself	Rebecca is concerned that her son Jacob will marry a totally unsuitable Hittite woman
2. Reaction	Phaedra attempts to resist her passion but becomes very depressed	Rebecca tells her husband Isaac that "her life will not be worth living" if Jacob marries a Hittite woman, like his brother Esau did
3. Response of others	Phaedra's servant betrays the secret of her infatuation to Hippolytus	Isaac sends Jacob away to marry a daughter of Rebecca's brother Laban
4. Effect	Phaedra hangs herself and leaves a note to her husband Theseus falsely accusing Hippolytus of raping her. This leads to the death of Hippolytus	Rebecca is satisfied and does not speak of suicide again

Source Author

7. **Feeling Doomed by a Dysfunctional Family of Origin: Treating the *Antigone Syndrome* with the *Ruth Intervention***

Kaplan and Maldaver (1993) reported some 85 studies linking dysfunctional family structure variables to adolescent suicidal behaviour. In these studies, judgments of enmeshment and disengagement were inferred from self-report measures, behavioural descriptions, and/or individual psychiatric diagnoses obtained from the parents of completed adolescent suicides. Among dysfunctional parental psychological structures on the part of the parents, disengaged marital patterns were the most lethal pattern for psychiatric adolescents, enmeshed marital patterns, the next most lethal, and rejection-intrusion patterns (one parent intrusive and the other rejecting) the least. Among attempted adolescent suicide, 76% occurs with adolescents experiencing a disengaged parental pattern, 56% with adolescents experiencing an enmeshed parental pattern, and 53% with adolescents experiencing a rejection-intrusion parental pattern.

Consider first the case of disengaged parents. Corder, Page, and Corder (1974) found that parents of adolescent attempters were perceived by their children as stringent disciplinarians, disengaged, and unable to communicate. McIntire and Angle (1973) reported that 56% of children who poisoned themselves reported a loss of communication with their parents (see also the studies of Chia, 1979; Garfinkel, Froese, & Hood, 1982; Parnitzke & Regel, 1973; Sathyavathi, 1975).

Consider the enmeshed parental type. Hill (1970) reported mothers of suicidal subjects were least empathic and most symbiotic of all groups. Richman (1978) found a polarity between symbiosis and disengagement in families with suicidal children in the work of Litman and Tabachnik (1968), Sarwer-Foner (1969), and Boszormenyi-Nagy and Spark (1973). The rejection-intrusion parental type is also lethal. Wenz (1978) reports greater anomie and conflict among families of 55 completed suicides than among those of 55 matched controls. Similar results were obtained by McKenry, Tishler, and Kelly (1982), finding family conflict to be greater among adolescent suicides than controls (see Kosky, 1983; Pfeffer, 1981 and Wenz, 1978, 1979).

In an original "psychological autopsy" study, Kaplan and Maldaver (1993) measured the parental engagement styles of the families of 25 completed adolescent suicides as opposed to those of 25 controls (with adolescents who had no suicidal behaviour) matched in terms of age, gender, race, and geographical area in three counties in and around Chicago.

They assessed marital style of the parents through an instrument called the Individuation-Attachment Questionnaire (see Kaplan, 1988), designed to measure needs and fears of both individuation and attachment. Rather than view individuation and attachment as reciprocally antagonistic endpoints of a unidimensional distance line (e.g. Minuchin, 1974), Kaplan proposes a bi-dimensional view where boundary formation (capacity to individuate) is seen as conceptually orthogonal from wall protection (need to detach). Kaplan and Maldaver found that the responses of three of the families (16.7%) of the 18 completed suicides indicated a healthy parental marital classification, while 7 of the parental pairs (38.9%) were either enmeshed or disengaged or a rejection-intrusion type (one parent

enreciprocally antagonistic tendencies on a uni-dimemeshed and the other disengaged). The remainder (44.4%) showed a mixed parental pattern. The 25 control parents showed an opposite pattern. Ten (40%) reported a healthy pattern, 12 (48%) showed a mixed parental structure, and only 3 (12%) showed a pathological pattern (enmeshed, disengaged or rejection-intrusion type).

The role of dysfunctional patterns in one's family of origin on suicide has continued to remain an important topic in research and thinking. While investigating poor family relationships, particularly in childhood and early adolescence, a couple of researchers (Shagle & Barber, 1993) have determined that poor parenting may cause serious issues in one's emotional and psychological developmental, including an increased rate of suicidal thoughts (Waldvogel, Rueter, & Oberg, 2008).

A number of studies specifically point to the role of parental seductiveness on subsequent child and adolescent suicidality (Dutton & Yamini, 1995; Dwivedi, 1993; Eagle, 2003; Kagan, 2009). The physical and sexual abuse of children along with neglect have commonly been considered valid ways of measuring family dysfunction (Smyth & MacLachlan, 2004).

Let us compare the Greek suicide story of Antigone with the biblical life-affirming story of Ruth with regard to addressing the suicidal implications of coming from a dysfunctional (e.g. incestuous) family of origin.

The *Antigone Syndrome*. Greek thought posits that one is doomed when being born of a dysfunctional family. Oedipus expresses this succinctly "For now, I am forsaken of the Gods, son of a defiled mother, and successor to his bed who gave me my own wretched being" (Sophocles, Oedipus the King, ll. 1359–1361). This is played out in the story of Antigone, daughter (and half-sister) of Oedipus.

Oedipus kills his biological father Laius unknowingly during an altercation on the road and equally unknowingly marries his biological mother, Jocasta. They have four children. When Oedipus discovers his incest, a tragic sequence of events evolved: his wife-mother kills herself, he blinds himself, and he curses his two sons to kill each other, which they do at the Seventh Gate of Thebes.

This sense of doom is continued in the story of Antigone, the daughter of Oedipus. "From what manner of parents did I take my miserable being? And to them I go thus, accursed, unwed, to share their home" (Sophocles, Antigone, l. 869). Antigone (which in ancient Greek literally translates to "opposed to motherhood or anti-generative") is unable to separate herself from the incestuous nature of her birth and hangs herself after being buried alive for trying to bury her dead brother Polyneices, a rebel against Thebes, against the order of Creon, the ruler of Thebes. Strikingly, Antigone says she values more than a husband or a child because the latter can be replaced while the former cannot (Sophocles, Antigone, 907–913).

The *Ruth Intervention*. Biblical thought offers a hopeful alternative. One can overcome the effects of a dysfunctional or even an abandoning family. "Cast me not off, neither forsake me, O God of my salvation. For though my father and mother have forsaken me, the Lord will take me up" (Psalm 27: 9–10). When the sinful people of Sodom are destroyed, Lot and his two daughters escape thinking their father is the last living man, they get him drunk and have sexual relations with him, so that the human race will not perish (Genesis 19: 31). Out of the union of Lot and his older daughter

Table 3.10 Ruth against Antigone

Stage	Antigone	Ruth
1. Precipitating stressor	Antigone is direct product of an unintentional incestuous relationship between Oedipus and his mother Jocasta	Ruth is a descendant of an intentional incestuous relationship on the part of Lot's eldest daughter with her father (albeit for the purpose of preserving humankind).
2. Reaction	Though raised in a seemingly secure home, Antigone does not seem to be able to separate from her family of origin	Though Ruth is widowed at an early age and away from her native land, she does not seem to be enmeshed and indeed is able to bond to her also widowed mother-in-law Naomi
3. Response of others	Antigone overidentified with her family of origin and winds up being buried alive because she will not leave her brother fighting against Thebes to remain unburied	Naomi accepts Ruth as her daughter and brings Ruth back with her to Judah and facilitates Ruth's marriage to Boaz, the kinsman of Naomi
4. Effect	Antigone hangs herself, rejecting her would-be lover. "Antigone" means in Greek "against generativity (semen)"	Ruth thrives and becomes a mother of Obed, and ancestress of King David and the Davidic line and integrates Naomi into her family in a beautiful way

Source Author

come the people from Moab (literally, "from the father" in biblical Hebrew). Although the Israelites have their problems with the Moabites, Ruth the Moabitess, a descendant of this incestuous relationship does not remain a victim but progresses to becoming a survivor and an important figure in the history of Israel; this despite the fact that Ruth, her mother-in-law Naomi, and her sister-in-law Orpah all are widowed while "strangers in a strange land", without male relatives to protect them and thus vulnerable; Indeed, Orpah abandons Naomi and returns home. However, Ruth does not and in one of the most moving speeches in the Hebrew Bible she pledges her loyalty to her mother-in-law: "Whither thou goest, I will go…" (Ruth 1: 16–17).

Nevertheless, upon her return to Judah, Naomi tells her relatives not to call her "Naomi" which means "pleasant" but "Mara" for the bitter turn her life has taken (Ruth 1: 19–20). Yet despite her losses and her dysfunctional family history occurring several generations earlier, Ruth, unlike Antigone, is not suicidal and does not reject motherhood. Rather Ruth maintains her hope and is steadfastly loyal to Naomi, even when she remarries. Both find their way back to life.

A contrast of these two narratives is presented in Table 3.10.

Conclusion

In his insightful book written almost fifty years ago, the sociologist Philip Slater argued that buried beneath every Western man is a Greek–Western man is nothing but the narcissistic and disloyal Greekleader Alcibiades with a bad conscience,

disguised as a plumber (Slater, *The Glory of Hera*, 1968, p. 451). Over 60 years ago, Dr. Eric Wellisch, Medical Director of Grayford Child Guidance Clinic in England, called for a "Biblical Psychology", arguing that:

> The very word "psyche" is Greek. The central psychoanalytic concept of the formation of character and neurosis is shaped after the Greek Oedipus myth. It is undoubtedly true that the Greek thinkers possessed an understanding of the human mind which, in some respects, is unsurpassed to the present day, and that the trilogy of Sophocles still presents us with the most challenging problems. But stirring as these problems are, they were not solved in the tragedy of Oedipus. In ancient Greek philosophy, only a heroic fight for the solution but no real solution is possible. Ancient Greek philosophy has not the vision of salvation…
>
> There is need for a Biblical Psychology. (Wellisch, 1954, p. 115)

Wellisch's clarion call resonates with the contrasting representations of hope versus hopelessness in Greek and biblical writings (Kaplan, 2012, 2013, 2015; Kaplan & Anderson, 2013; Kaplan & Schwartz, 2008). In the Greek account, Zeus sends Pandora, the first woman, to man (Epimetheus) as punishment for his half-brother Prometheus stealing fire and thus gaining some autonomy. One day, Pandora decides to open the box that Zeus had sent along with her. The box contained all the evils in the world, which fly out. Pandora closes the lid as quickly as she could, but too late; only hope remains locked in the box, and unavailable to people (Hesiod, *Theogony*, ll. 533–615; *Works and Days*, ll. 53–105; Plato, *Protagoras*; 320c–322a). Hebrew Scriptures portray hope in a very different way. After the great flood ceases, all living creatures, male, and female come out from the ark built by Noah and repopulate the earth through their sexual union. God places a rainbow in the heavens as a sign of His covenant with man that he will not send another flood (Genesis 9: 13). The bow becomes the very symbol of hope.

Nowhere is this contrast more relevant than in the treatment of suicide. Biblical narratives provide a stopper to suicidal crises unavailable in the tragic Greek myths are ingrained in psychological thinking. They provide a hopeful basis for the modern development of positive psychology (Seligman, 1998; Seligman & Csikszentmihaly, 2000). In the biblical tradition even a personal and familial experience of helplessness may be overcome by a tradition of hope and efficacy. In the ancient Greek vision, even personal experience of efficacy can be undone by an underlying tragic explanatory style of catastrophizing, and resultant helplessness, and hopelessness (c.f., Peterson et al., 1998). In the former, you can't lose for winning, while in the latter you can't win for losing…And your life is on the line.

References

Aeschylus. (1938). The seven against Thebes. In W. J. Oates & E. O'Neill, Jr (Eds.), *The complete Greek drama: Volume 1* (pp. 89–126). New York: Random House.

Anderson, H. D. (2011). Suicide ideation, depressive symptoms and out-of-home placement among youth in the U.S. Child Welfare System. *Journal of Clinical Child & Adolescent Psychology, 40*(6), 790–796.

Ao, T., Lopes-Cardozo, B., Silvilli, T. I., Blanton, C., Shetty, S., Talyor, E., & Geltman, P. (2012). *Suicide among Bhutanese refugees in the US 2009–2012* (2012). Stakeholders report. Atlanta, GA: Center for Disease Control and Prevention. Retrieved from http://www.refugeehealthta.org/files/2012/10/Bhutanese-Suicide-Stakeholder_Report_October_22_2012_Cleared_-For_Dissemination.pdf.

Bart, P. B. (1971). Depression in middle-aged women. In V. Gornick & B. K. Moran (Eds.), *Woman in sexist society* (pp. 99–117). New York: The New American Library.

Barter, J. T., Swaback, D. O., & Todd, D. (1968). Adolescent suicide attempts: A follow-up study of hospitalized patients. *Archives of General Psychiatry, 19*(5), 523–527.

Benson, R. A., & Brodie, D. C. (1975). Suicide by overdoses of medicines among the aged. *Journal of the American Geriatrics Society, 23*(7), 304–308.

Bernard, J. S. (1974). *The future of motherhood*. New York: Dial Press.

Berardo, F. M. (1968). Widowhood status in the United States: Perspective on a neglected aspect of the family life-cycle. *The Family Coordinator, 17*(3), 191–203.

Berardo, F. M. (1970). Survivor and social isolation: The case of the aged widower. *The Family Coordinator, 19*(1), 11–25.

Berlin, I. N. (1987). Suicide among American Indian adolescents: An overview. *Suicide and Life-Threatening Behavior, 17*(3), 218–232.

Bock, E. W., & Webber, I. L. (1972). Suicide among the elderly: Isolating widowhood and mitigating alternatives. *Journal of Marriage and Family, 34*(1), 24–31.

Boszormenyi-Nagy, I., & Spark, G. M. (1973). *Invisible loyalties: Reciprocity in intergenerational family therapy*. New York: Harper & Row.

Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The quality of American life: Perceptions, evaluations, and satisfactions*. New York: Russell Sage Foundation.

Carballo, M., & Nerukar, A. (2001). Migration, refugees, and health risks. *Emerging Infectious Diseases, 7*(3 Suppl), 556–560.

Chia, B. H. (1979). Suicide of the young in Singapore. *Annals of the Academy of Medicine, Singapore, 8*(3), 262–268.

Choron, J. (1972). *Suicide*. New York: Scribner.

Cohen, J. (2008). Safe in our hands?: A study of suicide and self-harm in asylum seekers. *Journal of Forensic and Legal Medicine, 15*(4), 235–244.

Conon. (1798). *Narrationes Quinquaginta et Parthenumi NarrationesAmatoriae.* Gottingae: J. C. Dietrich.

Conwell, Y. (1996). Relationships of age and axis I diagnoses in victims of completed suicide: A psychological autopsy study. *American Journal of Psychiatry, 153*(8), 1001–1008.

Corder, B. F., Page, P. V., & Corder, R. F. (1974). Parental history, family communication and interaction patterns in adolescent suicide. *Family Therapy, 1*(3), 285–290.

Cumming, E., & Henry, W. E. (1961). *Growing old, the process of disengagement*. New York: Basic Books.

da Costa Nunez, R. (1994). *Hopes, dreams & promise: The future of homeless children in America*. New York: Institute for Children and Poverty, Homes for the Homeless.

Darbonne, A. R. (1969). Suicide and age: A suicide note analysis. *Journal of Consulting and Clinical Psychology, 33*(1), 46–50.

de Catanzaro, D. (1995). Reproductive status, family interactions, and suicidal ideation: Surveys of the general public and high-risk groups. *Ethology and Sociobiology, 16*(5), 385–394.

Deykin, E., Jacobson, S., Solomon, M., & Klerman, G. (1966). The empty nest: Psychosocial aspects of conflict between depressed women and their grown children. *American Journal of Psychiatry, 122*(12), 1422–1426.

Diogenes Laertius. (1972). *Lives of eminent philosophers* R. D. Hicks, Trans. 2 vols. Loeb Classical Library. (Cambridge, MA: Harvard University Press).

Donne, J. (1608, 1984). *Biathanatos*. Ernest W. Sullivan II. (Ed.) Cranbury, NJ: Associated University Press.

Dorpat, T. L. (1973). Suicide, loss, and mourning. *Suicide and Life-Threatening Behavior, 3*(3), 213–224.

Dorpat, T. L., & Ripley, H. S. (1967). The relationship between attempted suicide and committed suicide. *Comprehensive Psychiatry, 8*(2), 74–79.

Douglas, J. D. (1967). *The social meanings of suicide*. Princeton, NJ: Princeton University Press.

Droge, A. J., & Tabor, J. D. (1992). *A noble death: Suicide and martyrdom among Christians and Jews in antiquity*. San Francisco: HarperSanFrancisco.

Dublin, L. I. (1963). *Suicide: A sociological and statistical study*. New York: Ronald Press.

Dublin, L. I., & Bunzel, B. (1933). *To be, or not to be: A study of suicide*. New York: Smith and Haas.

Durkheim, E. (1897/1951). *Suicide* (J. A. Spaulding & G. Simpson, Trans.). Glencoe, IL: Free Press.

Dutton, D. G., & Yamini, S. (1995). Adolescent parricide: An integration of social cognitive theory and clinical views of projective-introjective cycling. *American Journal of Orthopsychiatry, 65*(1), 39–47.

Dwivedi, K. N. (1993). *Group work with children and adolescents: A handbook*. London: Jessica Kingsley Publishers.

Eagle, M. (2003). Clinical implications of attachment theory. *Psychoanalytic Inquiry, 23*(1), 27–53.

Eisenberg, D., Gollust, S. E., Golberstein, E., & Hefner, J. L. (2007). Prevalence and correlates of depression, anxiety, and suicidality among university students. *American Journal of Orthopsychiatry, 77*(4), 534–542.

Ellis, T. E., Rufino, K. A., Allen, J. G., Fowler, J. C., & Jobes, D. A. (2015). Impact of a suicide-specific intervention within inpatient psychiatric care: The collaborative assessment and management of suicidality. *Suicide and Life-Threatening Behavior, 45*(5), 556–566.

Epictetus. (1885). *The discourses of epictetus*: *With the enchiridion and fragments* (G. Long, Trans.). London, UK: G. Bell and Sons.

Euripides. (1938). *Hippolytus*. In Whitney J. Oates & Eugene O'Neill, Jr. (Eds.), *The complete Greek drama: Volume 1* (E. P. Coleridge, Trans.) (pp. 763–806). New York: Random House.

Exline, J. J., Kaplan, K. J., & Grubbs, J. B. (2012). Anger, exit, and assertion: Do people see protest toward God as morally acceptable? *Psychology of Religion and Spirituality, 4*(4), 264–277.

Faber, M. (1970). *Suicide and Greek tragedy*. New York: Sphinx.

Feigleman, W. (2001). Comparing adolescents in diverging family structures: Investigating whether adoptees are more prone to problems than their nonadopted peers. *Adoption Quarterly, 5,* 5–37.

Feigleman, W. (2005). Are adoptees at increased risk for attempting suicide. *Suicide and Life-Threatening Behavior, 35*(2), 206–216.

Ferrada-Noli, M. (1997). A cross-cultural breakdown of Swedish suicide. *Acta Psychiatrica Scandinavica, 96*(2), 108–116.

Ferrada-Noli, M. (2014). Suicide among immigrants increases. *Lakartidningen, 111*(8), 326.

Finch, S. M., & Poznanski, E. O. (1971). *Adolescent suicide*. Springfield, IL: Charles G. Thomas Publishers.

Frankl, V. E. (1962). *Man's search for meaning*. Boston, MA: Beacon Press.

Garfinkle, D., Froese, A., & Hood, J. (1982). Suicide attempts in children and adolescents. *Group, 76* (36.5),12.

Giddens, A. (1971). Durkheim's political sociology. *The Sociological Review, 19*(4), 477–519.

Gutmann, D. (1975). Parenthood: A key to the comparative study of the life cycle. In N. Datan & L. Ginsberg (Eds.), *Life-span developmental psychology: Normative life crises* (pp. 167–184). New York: Academic Press.

Hagaman, A. K., Sivilli, T. I., Ao, T., Blanton, C., Ellis, H., Cardozo, B. L., & Shetty, S. (2016). An investigation into suicides among bhutanese refugees resettled in the United States between 2008 and 2011. *Journal of Immigrant and Minority Health, 18*(4), 1–9.

Harden, B. (2004). Safety and stability in foster care: A developmental perspective. *The Future of Children, 14*(1), 31–48.

Harwood, D., Hawton, K., Hope, T., & Jacoby, R. (2001). Psychiatric disorder and personality factors associated with suicide in older people: A descriptive and case-control study. *International Journal of Geriatric Psychiatry, 16*(2), 155–165.

Heisel, M. J., Neufeld, E., & Flett, G. L. (2015). Reasons for living, meaning in life, and suicide ideation: Investigating the roles of key positive psychological factors in reducing suicide risk in community-residing older adults. *Aging & Mental Health, 20*(2), 1–13.

Heikkinen, M., Aro, H., & Lonnqvist, J. (1993). Life events and social support in suicide. *Suicide and Life-Threatening Behavior, 23*(4), 343–358.

Henriksson, M. M., Aro, H. M., Marttunen, M. J., Heikkinen, M. E., Isometsa, E. T., Kuoppasalmi, K. E. E. A., Lonnqvist, J. K. (1993). Mental disorders and comorbidity in suicide. *American Journal of Psychiatry, 150*(6), 935–940.

Hesiod. (1991). *The works and days, Theogony, the shield of Heracles* (R. Lattimore, Trans.). Ann Arbor, MI: The University of Michigan Press.

Hill, M. N. (1970). Suicidal behavior in adolescents and its relationship to the lack of personal empathy. *Dissertation Abstracts International, 31,* 472.

Hobdy, J., Hayslip, B., Jr., Kaminski, P. L., Crowley, B. J., Riggs, S., & York, C. (2007). The role of attachment style in coping with job loss and the empty nest in adulthood. *International Journal of Aging and Human Development, 65*(4), 335–371.

Inskip, H. M., Harris, E. C., & Barraclough, B. (1998). Lifetime risk of suicide for affective disorder, alcoholism and schizophrenia. *The British Journal of Psychiatry, 172*(1), 35–37.

Jewish Publication Society of America (JPS). (1985). *Tanakh: The holy scriptures*. Philadelphia, PA and Jerusalem, ISR: The Jewish Publication Society.

Joiner, T. E., Jr., Pettit, J. W., Walker, R. L., & Voelz, Z. R. (2002). Perceived burdensomeness and suicidality: Two studies on the suicide notes of those attempting and those completing suicide. *Journal of Social and Clinical Psychology, 21*(5), 531–545.

Joiner, T. E., Jr., Van Orden, K. A., Witte, T. K., & Rudd, M. D. (2009). *The interpersonal theory of suicide: Guidance for working with suicidal clients*. Wahington, D.C.: American Psychological Association.

Kagan, J. (2009). *The three cultures: Natural sciences, social sciences, and the humanities in the 21st century*. New York: Cambridge University Press.

Kaplan, K. J. (1988). TILT: Teaching individuals to live together. *Transactional Analysis Journal, 18*(3), 220–230.

Kaplan, K. J. (1998). *TILT: Teaching individuals to live together*. Philadelphia, PA: Brunner/Mazel.

Kaplan, K. J. (2007). Zeno, Job and Terry Schiavo: The right to die versus the right to life. *Ethics & Medicine, 23*(2), 95–102.

Kaplan, K. J. (2008). *A psychology of hope: A biblical response to tragedy and suicide*. Grand Rapids, MI: Wm. B. Eerdmans Publisher.

Kaplan, K. J. (2012). *Living biblically: Ten guides for fulfillment and happiness*. Eugene, OR: WIPF and STOCK Publishers.

Kaplan, K. J. (2013). Hope unbound: Using Biblical narratives to affirm life and prevent suicide. *The Military Chaplain, 87*(2), 23–27.

Kaplan, K. J. (2015). *Oedipus in Jerusalem: A play in two acts*. Eugene, OR: WIPF and STOCK Publishers.

Kaplan, K. J., & Anderson, J. W. (2013). Freud, Greek narratives, and Biblical counter- narratives: A dialogue. *Clio's Psyche, 20*(1), 101–111.

Kaplan, K. J., & Harrow, M. (1996). Positive and negative symptoms as risk factors for later suicidal activity in schizophrenics versus depressives. *Suicide and Life-Threatening Behavior, 26*(2), 105–121.

Kaplan, K. J., & Harrow, M. (1999). Psychosis and functioning as risk factors for later suicidal activity among schizophrenia and schizoaffective patients: An interactive model. *Suicide and Life-Threatening Behavior, 29*(1), 10–24.

Kaplan, K. J., Harrow, M., & Clews, K. (2016). The twenty-year trajectory of suicidal activity among post-hospital psychiatric men and women with mood disorders and schizophrenia. *Archives of Suicide Research, 20*(3), 336–348.

Kaplan, K. J., Harrow, M., & Faull, R. B. (2012). Are there gender-specific risk factors for suicidalactivity among patients with schizophrenia and depression? *Suicide and Life-Threatening Behavior, 42*(6), 614–627.

Kaplan, K. J., & Maldaver, M. (1993). Parental marital style and completed adolescent suicide. *Omega: Journal of Death and Dying, 27*(2), 131–154.

Kaplan, K. J., & Schwartz, M. B. (2008). *A psychology of hope: A biblical response to tragedy and suicide*. Grand Rapids, MI: Wm. B. Eerdmans Publisher.

Kaplan, K. J., & Worth, S. (1993). Individuation-attachment and suicide trajectory: A developmental guide for the clinician. *Omega: Journal of Death and Dying, 27*(3), 207–237.

Kleiman, E. M., & Beaver, J. K. (2013). A meaningful life is worth living: Meaning in life as a suicide resiliency factor. *Psychiatry Research, 210*(3), 934–939.

Kobler, A. L., & Stotland, E. (1964). *The end of hope*. Free Press of Glencoe.

Kosky, R. (1983). Childhood suicidal behaviour. *Journal of Child Psychology and Psychiatry, 24*(3), 457–468.

Lawton, M. P. (1980). *Social and medical services in housing for the aged*. New York: Department of Health and Human Services, Public Health Service, Alcohol, Drug Abuse, and Mental Health Administration.

Lee, E. E. (1978). Suicide and youth. *Personnel & Guidance Journal, 57*(4), 200–204.

Lemon, B. W., Bengtson, V. L., & Peterson, J. A. (1972). An exploration of the activity theory of aging: Activity types and life satisfaction among in-movers to a retirement community. *Journal of Gerontology, 27*(4), 511–523.

Litman, R. E., & Tabachnik, N. D. (1968). Psychoanalytic theories of suicide. In H. L. P. Resnick (Ed.), *Suicidal behaviors: Diagnosis and management* (pp. 73–81). Boston: Little Brown.

MacMahon, B., & Pugh, T. F. (1965). Suicide in the widowed. *American Journal of Epidemiology, 81*(1), 23–31.

Margolin, N. L., & Teicher, J. D. (1968). Thirteen adolescent male suicide attempts: Dynamic considerations. *Journal of the American Academy of Child Psychiatry, 7*(2), 296–315.

Maris, R. W. (1969). *Social forces in urban suicide*. Homewood, IL: Dorsey Press.

Martin, G., Rozanes, P., Pierce, C., & Allison, S. (1995). Adolescent suicide, depression and family dysfunction. *Acta Psychiatrica Scandinavica, 92*(5), 336–344.

McIntire, M. S., & Angle, C. R. (1973). Psychological "biopsy" in self-poisoning of children and adolescents. *Archives of Pediatrics and Adolescent Medicine, 126*(1), 42–46.

McKenry, P. C., Tishler, C. L., & Kelley, C. (1982). Adolescent suicide: A comparison of attempters and nonattempters in an emergency room population. *Clinical Pediatrics, 21*(5), 266–270.

Miller, M. (1979). *Suicide after sixty: The final alternative*. New York: Springer.

Miller, B. C., Fan, X., Christensen, M., Grotevant, H. D., & van Dulmen, M. (2000). Comparisons of adopted and nonadopted adolescents in a large, nationally-representative sample. *Child Development*, *71*, 1458–1473.

Minuchin, S. (1974). *Families and family therapy*. Cambridge, MA: Harvard University Press.

Moustakas, C. E. (1961). *Loneliness*. Englewood Cliffs, NJ: Prentice-Hall.

NASB Translation Committee. (1984). *NASB interlinear Greek-English new testament*. Grand Rapids, MI: Zondervan.

Neugarten, B. L. (1968). *Middle age and aging: A reader in social psychology*. Chicago, IL: University of Chicago Press.

Newton, R. R., Litrownik, A. J., & Landsverk, J. A. (2000). Children and youth in foster care: Disentangling the relationship between problem behaviors and number of placements. *Child Abuse and Neglect, 24*(10), 1363–1374.

Nyman, A. K., & Jonsson, H. (1986). Patterns of self-destructive behaviour in schizophrenia. *Acta Psychiatrica Scandinavica, 73*(3), 252–262.

Ovid. (1989). *Metamorphoses* (C. Boer, Trans.). Dallas, TX: Spring Publications.

Oates, W. J., & O'Neill, E. Jr. (1938). *The complete Greek drama: Volumes 1 and 2* (W. J. Oates & E. O'Neill, Jr, Trans. and Ed.). New York: Random House.
Palmer, B. A., Pankratz, V. S., & Bostwick, J. M. (2005). The lifetime risk of suicide in schizophrenia: A reexamination. *Archives of General Psychiatry, 62*(3), 247–253.
Parnitzke, C., & Regel, H. (1973). Self-destruction of minors caused by social disintegration. *Psychiatrie, Neurologie und Medizinische Psychologie, 25*(10), 606–614.
Pearson, J. L., & Conwell, Y. (1996). *Suicide and aging: International perspectives*. New York: Springer Publishers.
Peterson, C., Seligman, M. E. P., Yurko, K. H., Martin, L. R., & Friedman, H. S. (1998). Catastrophizing and untimely death. *Psychological Science, 9*(2), 127–130.
Pfeffer, C. R. (1981). Parental suicide: An organizing event in the development of latency age children. *Suicide and Life-Threatening Behavior, 11*(1), 43–50.
Plutarch. (1909). *Lives of Themistocles, Pericles, Aristides, Alcibiades and Coriolanus, Demosthenes and Cicero, Caesar and Antony*. The Harvard Classics, edited by C. N. Eliot. In the translation called Dryden's Corrected and Revised by Arthur Hugh Clough. New York, NY: P. F. Collier and Sons.
Ponizovsky, A. M., Ritsner, M. S., & Modai, I. (1999). Suicidal ideation and suicide attempts among immigrant adolescents from the former Soviet Union to Israel. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*(11), 1433–1441.
Pretzel, P. W. (1972). *Understanding and counseling the suicidal person*. Nashville, TN: Abingdon.
Radloff, L. S. (1980). Depression and the empty nest. *Sex Roles, 6*(6), 775–781.
Rahman, A., & Hafeez, A. (2003). Suicidal feelings run high among mothers in refugee camps: A cross-sectional survey. *Acta Psychiatrica Scandinavica, 108*(5), 392–393.
Rich, C. L., Young, D., & Fowler, R. C. (1986). San Diego suicide study: I. Young vs old subjects. *Archives of General Psychiatry, 43*(6), 577–582.
Richman, J. (1978). Symbiosis, empathy, suicidal behavior, and the family. *Suicide and Life-Threatening Behavior, 8*(3), 139–149.
Rossau, C. D., & Mortensen, P. B. (1997). Risk factors for suicide in patients with schizophrenia: Nested case-control study. *The British Journal of Psychiatry, 171*(4), 355–359.
Rossi, P. H. (1980). *Why families move*. Beverly Hills, CA: Sage Publications Inc.
Rubin, D. M., Allesandrini, E. A., Feudtner, C., Mandell, D. S., Localio, A. R., & Hadley, T. (2004). Placement stability and mental health costs for children in foster care. *Pediatrics, 113*(5), 1336–1341.
Rubin, D. M., O'Reilly, A. L. R., Luan, X., & Localio, A. R. (2007). The impact of placement stability on behavioral well-being for children in foster care. *Pediatrics, 119*(2), 336–344.
Sarwer-Foner, G. J. (1969). Depression and suicide. On some particularly high risk suicidal patients. *Diseases of the Nervous System, 30*(2), 104–110.
Sathyavathi, K. (1975). Suicide among children in Bangalore. *The Indian Journal of Pediatrics, 42*(6), 149–157.
Schneer, H. I., Perlstein, A., & Brozovsky, M. (1975). Hospitalized suicidal adolescents: Two generations. *Journal of the American Academy of Child Psychiatry, 14*(2), 268–280.
Seligman, M. E. P. (1998). *Learned optimism*. New York: Free Press.
Seligman, M. E. P., & Csikszentmihaly, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5–14.
Selinger, S. S. (1998). Moses: "Kill Me I Pray". In Kalman J. Kaplan & Matthew B. Schwartz (Eds.), *Jewish approaches to suicide, martyrdom an euthanasia* (pp. 176–185). Northvale, NJ: Jason Aronson Inc.
Shagle, S. C., & Barber, B. K. (1993). Effects of family, marital, and parent-child conflict on adolescent self-derogation and suicidal ideation. *Journal of Marriage and the Family, 55*(4), 964–974.
Shakespeare, W. (1967). *The tragedy of Coriolanus.* In G. Lyman Kittredge (Ed.), Revised by I. Ribner. Waltham. MA: Blaisdell Publishing Company.

Silove, D., Austin, P., & Steel, Z. (2007). No refuge from terror: The impact of detention on the mental health of trauma-affected refugees seeking asylum in Australia. *Transcultural Psychiatry, 44*(3), 359–393.

Skodlar, B., & Parnas, J. (2010). Self-disorder and subjective dimensions of suicidality in schizophrenia. *Comprehensive Psychiatry, 51*(4), 363–366.

Skodlar, B., Tomori, M., & Parnas, J. (2008). Subjective experience and suicidal ideation in schizophrenia. *Comprehensive Psychiatry, 49*(5), 482–488.

Slap, G., Goodman, E., & Huang, M. (2001). Adoption as a risk factor for attempted suicide during adolescensce. *Pediatrics, 108,* 1–8.

Slater, P. E. (1968). *The glory of Hera: Greek mythology and the Greek family*. Boston, MASS.: Beacon Press.

Smyth, C. L., & MacLachlan, M. (2004). The context of suicide: An examination of life circumstances thought to be understandable precursors to youth suicide. *Journal of Mental Health, 13*(1), 83–92.

Sophocles. (1938a). *Ajax*. In W. J. Oates & E. O'Neill, Jr. (Eds.), *The complete Greek drama: Volume 1* (R. C. Trevelyan, Trans.) (pp. 315–368). New York: Random House.

Sophocles. (1938b). *Antigone*. In W. J. Oates & E. O'Neill, Jr. (Eds.), *The complete Greek drama: Volume 1* (R. C. Jebb, Trans.) (pp. 423–460). New York: Random House.

Sophocles. (1938c). Oedipus the King. In W. J. Oates & E. O'Neill, Jr. (Eds.), *The complete Greek drama: Volume 1* (R. C. Jebb, Trans.) (pp. 369–422). New York: Random House.

Taussig, H., Clyman, R., & Landsverk, J. (2001). Children who return home from foster care: A 6-year prospective study of behavioral health outcomes in adolescence. *Pediatrics, 108*(1), E10.

Titus Livius (Livy). (1960). *The early history of Rome. Books I–V of the history of Rome from its foundation* (A. De Selincourt, Trans.). Baltimore, MD.: Penguin Classics.

Trout, D. L. (1980). The role of social isolation in suicide. *Suicide and Life-Threatening Behavior, 10*(1), 10–23.

Van Orden, K. A., Lynam, M. E., Hollar, D., & Joiner, T. E., Jr. (2006). Perceived burdensomeness as an indicator of suicidal symptoms. *Cognitive Therapy and Research, 30* (4), 457–467.

Wahoush, E. O. (2009). Reaching a hard-to-reach population such as asylum seekers and resettled refugees in Canada. *Bulletin of the World Health Organization, 87*(8), 568.

Waldvogel, J. L., Rueter, M., & Oberg, C. N. (2008). Adolescent suicide: Risk factors and prevention strategies. *Current Problems in Pediatric and Adolescent Health Care, 38*(4), 110–125.

Wellisch, E. (1954). *Isaac and Oedipus: Studies in biblical psychology of the sacrifice of Isaac*. London: Routledge and Kegan Paul.

Wenz, F. V. (1978). Economic status, family anomie, and adolescent suicide potential. *The Journal of Psychology, 98*(1), 45–47.

Wenz, F. V. (1979). Family constellation factors, depression and parent suicidal potential. *American Journal of Orthopsychiatry, 49*(1), 164–167.

Wiersma, D., Nienhuis, F. J., Slooff, C. J., & Giel, R. (1998). Natural course of schizophrenic disorders: A 15-year follow-up of a Dutch incidence cohort. *Schizophrenia Bulletin, 24*(1), 75–85.

Yap, P.-M. (1958). *Suicide in Hong Kong, with special reference to attempted suicide*. Hong Kong: Hong Kong University Press.

Ziffer, E. (2006). *All the people of the Bible*. Tel Aviv: Havav Publishers.

Chapter 4
Genetics of Suicidal Behaviour

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Suicidal behaviour is a complex and multifactorial behaviour. About million people commit suicide each year. Suicide is ranked second among cause of death in adolescent. Although, suicidal behaviour has been attributed to various factors including, psychological and economical, there is a great deal of evidence point to interaction of genetics and environment that may significantly contribute to the suicidal behaviour. In this chapter, we will first discuss epidemiology of suicidal behaviour describing family, twin, and adoption studies. We will then examine the major candidate gene studies. Lastly, we will review recent progress in genome-wide association study and next-generation sequence in the suicidal behaviour. We will also address the new ideas and future directions in order to find the susceptible genetic factors associated with suicidal behaviour.

Genetic Epidemiology

Familial clustering of suicidal behaviour and psychopathology has been reported for adolescent suicide attempters. Mittendorfer-Rutz, Rasmussen, and Wasserman (2008) conducted the largest epidemiology studies with 14,440 suicide attempters and 14,440 healthy controls that were born in Sweden between 1968 and 1980. For youth suicide attempt, familial risk factors were siblings (OR 3.4; 2.8–4.1), maternal (OR 2.7; 2.5–3.1), and paternal (OR 1.9; 1.7–2.1). The important risk factors included were familial personality, substance abuse disorders, maternal

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schizophrenia, non-affective psychoses, organic disorders, and parental neurotic stress-related and somatoform disorders (1.9–3.2 fold increase), and paternal (OR 1.9; 1.6–2.3) and maternal (OR 1.8; 1.3–2.4) suicide completion. It was found that familial suicide completion had stronger effect on suicide attempt of earlier onset and in boys. About half of all suicide attempts were attributed to familial psychopathology (13%), family suicide attempt (7%), suicide completion (1%), and own psychopathology. This familial study directly supports the evidence that genetic risk factors contribute to the suicidal behaviour.

Twin studies are a useful way for analysing concordance. Individuals share 100% genes between monozygotic twins and share 50% genes between dizygotic twins. Twins study can separate environmental variance from genetic factor. Roy, Segal, Centerwall, and Robinette (1991) examined 176 twin pairs in which one or both twins had committed suicide. Interestingly, they found concordant difference between monozygotic twin pairs (11.3%) and dizygotic twin pairs (1.8%). The presence of psychiatric disorder in the twins and their families was examined in 11 twin pairs, two of whom were concordant for suicide. Out of 13, 11 twin suicide victims had been treated for psychiatric disorders. In addition, twins in 10 pairs had other first- or second-degree relatives who had been treated for psychiatric disorders. These twin data suggest that genetic factors related to suicide may largely represent a genetic predisposition for the psychiatric disorders associated with suicide. Statham et al. (1998) examined the epidemiology and genetics of suicidality, which included reports of persistent suicidal thoughts or a plan or suicide attempt in a large number of community-based samples of monozygotic and dizygotic twin pairs (5995 twins). They found that lifetime prevalence of suicidal thoughts and attempts was remarkably constant across birth cohorts, and across gender. History of suicide attempts or persistent thoughts in the respondent's co-twin remained a powerful predictor in monozygotic pairs, but was not consistently predictive in dizygotic pairs. Overall, genetic factors accounted for approximately 45% of the variance in suicidal thoughts and behaviour. Voracek and Loibl (2007) conducted a systematic review of twins study and they collected 32 studies, which included 19 case reports, 5 register-based studies, 4 population-based epidemiological studies, and 4 surviving co-twins study. From register-based studies and case reports, concordance for completed suicide was significantly more frequent among monozygotic (24.1%) than dizygotic twin pairs (2.3%). From population-based epidemiological studies, heritability of suicidal behaviour was estimated at 30–55%. This twin study suggests strong genetic contributions to the suicide risk.

Adoption studies have also been conducted in the suicide behaviour. Schulsinger, Ketty, Rosenthal, and Wender (1979) examined 57 suicide victims, which were adopted in the Danish family. They compared the suicide rates between biological relatives of suicide victims and non-suicidal adoptee control group, which were found to be 4.46 and 0.74%, respectively. None of the relatives of the adopted families were affected by suicide. Another study reported by Von Borczyskowski, Lindblad, Vinnerljung, Reintjes, and Hjern (2011) was conducted in the Swedish registry with a national cohort of 2,471,496 individuals, including

176,000 adoptees for suicide during 1987–2001. They found that biological parent suicide and severe psychiatric morbidity which were the major risk factors for suicide in adopted and in non-adopted offspring.

Candidate Gene Association Studies of Suicidal Behaviour

Gene studies of most candidates are based on case-control association study design. The basic principle of genetic association studies is the hypothesis of common disease and common variants. The groups of cases and controls are enrolled in the association study and the allele or genotype frequencies are determined and compared statistically. If the polymorphisms are more frequent in one group than the other group, the genetic variants show association with the disease and the candidate gene may be the susceptible genes for suicide or psychiatric diseases. The selections of genetic variants for the study are usually based on the plausible hypothesis, such as serotonin transporter for antidepressants. It is noticeable that the association studies have several limitations. First, spurious positive findings and false-positive findings are unavoidable due to the population stratification. Second, if the sample sizes are small, then the statistical power is very low. Lastly, most of common variants are located within the intron regions and elucidation of function relevance is confronted. Such limitations also include clinical and diagnostic heterogeneity, low statistical power if sample sizes are small, often limited biological evidence of candidate gene selection, and unknown functional relevance of tested single nucleotide polymorphisms (SNPs), as well as population stratification within the sample leading to spurious positive findings or false-negative associations. Despite these limitations, the candidate gene association studies are still an effective solution in finding for susceptible genes in suicide victims. Here we summarize the candidate gene studies in suicidal behaviour examined using association studies.

Serotonergic System

Studies showing the role of serotonin, a monoamine neurotransmitter, in suicidal behaviour date back to the 70s of the last century. Serotonergic functions have been demonstrated to be critical for the regulation of impulsive, aggressive, and suicidal behaviour (Koller, Bondy, Preuss, Bottlender, & Soyka, 2003; Virkkunen et al., 1989). For example, several studies have reported that the expression of genes associated with serotonergic system is altered in the post-mortem brains of suicide victims, especially in the prefrontal cortex. These include $5HT_{2A}$, $5HT_{1A}$, and $5HT_{2C}$ (Celada, Puig, Amargós-Bosch, Adell, & Artigas, 2004; Holmes, 2008; Sugden et al., 2009). Clinical studies also found that the concentration of the serotonin metabolite 5-hydroxyindoleacetic acid (5-HIAA) is decreased in the

cerebrospinal fluid of the suicidal patients (Asberg, 1997; Placidi et al., 2001). Most of the genetic association studies are conducted using the genes of serotonergic neurotransmission pathway.

Tryptophan Hydroxylase (TPH1)

TPH1 is located on the chromosome 11p15.3-p14 and the full-length fragment covers 29 kbp. Serotonin is catalyzed from L-Tryptophan by tryptophan hydroxylase (THP), which is a rating-limiting enzyme (Boularand, Darmon, Ravassard, and Mallet, 1995). To identify the susceptible risk single nucleotide polymorphism (SNP)s for suicidal behaviour, several studies focused on common variants associated with *THP1* gene. Early studies focused on the two SNPs: A779C (rs1799913) and A218C (rs1800532). Both these SNPs are located on intron 7. Nielsen et al. (1994) reported variation on a polymorphism in intron 7 with an A to C substitution at nucleotides 779 (A779C) which was associated with a history of violent suicide attempts. Following this, two studies found C allele as the risk variant (Nielsen et al., 1998; Roy et al., 2001) and one study showed increased frequency of the A allele in suicide attempters (Mann et al., 1997). The first meta-analysis conducted by Lalovic and Turecki (2002) reported no association between A218C with suicide behaviour. Another meta-analysis investigated A218C in Caucasians, which showed that suicidal patients frequently carried A218 allele (Rujescu, Giegling, Sato, Hartmann, & Möller, 2003). A meta-analysis summarizing 9 studies reported an association between A218C polymorphisms and suicidal behaviour (Bellivier, Chaste, and Malafosse, 2004). Li, Duan, and He (2006) performed meta-analysis of 22 studies and confirmed this evidence. Another meta-analysis was conducted by Clayden, Zaruk, Meyre, Thabane, and Samaan (2012) which further supported the involvement of A218C and suicidal behaviour. Recently, González-Castro et al. (2014) collected 37 literatures about genetic association studies of *THP1* and reviewed 2 polymorphisms (one is A218C, the other is A779C). This meta-analysis study involved a total number of sample 5683 cases and 11,652 controls. Meanwhile, subgroup analyses were performed in the Caucasian and Asian populations. The results demonstrated that both A218C and A779C were susceptible to suicide behaviour. Other studies examining the A allele of the A218C showed frequent association with suicide attempters than non-attempters (Abbar et al., 2001; Galfalvy et al., 2009; Souery et al., 2001; Tsai et al., 1999). On the other hand, the C allele was associated with suicide attempts in two studies (Paik, Toh, Kim, & Lee, 2000; Stefulj, Kubat, Balija, & Jernej, 2006). Other common variants identified within the promoter region are T7180G, C7065T, A6526G, and G5806T. The A allele of the A6526G was found to be in linkage disequilibrium with A779C and was associated with suicide attempts (Galfalvy et al., 2009; Rotondo et al., 1999). A study by Turecki et al. (2001) showed risk haplotype associated with suicide completion (6526G–5806T–218C). An association between the haplotype TCAAA of T7180G-C7065T-A6526G-A218C-A779C SNPs and suicide attempts have also been reported (Liu et al., 2006).

Several studies support the evidence that *TPH1* is involved in the personality trait, especially anger and aggression. Rujescu et al. (2002) reported that individuals with "A" allele had higher scores on the trait Anger Scale of the State-Trait Anger Expression Inventory, STAX in the healthy control and suicide attempters. Baud et al. (2009) also reported that suicide attempters with "AA" genotype had lower score on the anger than with CC genotype. Cicchetti, Rogosch, and Thibodeau (2012) examined common variants in the *TPH1* in child maltreatment and non-maltreatment low-income children. Interestingly, they found that *TPH1* polymorphisms moderated the effects of maltreatment subtype on adult reports of antisocial. Andre et al. (2013) analysed the interaction between the *TPH1* genotype, treatment response, and the different temperament dimensions in 97 subjects with major depression who was treated serotonin reuptake inhibitors. They found *TPH1* genotype and treatment response had interactive effects on both HA1 and HA2 scores. Interaction between CC genotype and remission or treatment status differentiates between different temperament profiles. Karanović et al. (2016) assessed *TPH1* variant rs1800532 and its possible interaction with recent stressful life events as risk factors for suicide attempt in Serbian psychiatric patients, including 165 suicide attempters and 188 suicide non-attempters. They found that rs1800532 and recent stressful life events were independently associated with suicide attempt, while rs1800532 did not moderate the effect of recent stressful life events on suicide attempt vulnerability.

Tryptophan Hydroxylase (TPH2)

Walther et al. (2003) first reported a second TPH isoform in mice and termed it TPH2. Breidenthal, White, and Glatt (2004) screened the whole genomic region and identified several common variants in this gene, which served for several association studies. Zill et al. (2004) Investigated the SNPs and haplotype in 263 suicide victims and 266 healthy controls with 10 SNPs in the *TPH2* gene. One SNP was detected to be significantly associated with suicide ($p = 0.004$). Haplotype analysis also supported for this association ($p = 0.001$). Several case-control studies reported association between *TPH2* gene and suicide. Some studies showed positive results, but others showed negative results. Lately, González-Castro, Juárez-Rojop, López-Narváez, and Tovilla-Zárate (2014) conducted a meta-analysis focusing three SNPs (G603T, A473T, and G19918A) in 4196 cases and 5990 controls. The meta-analysis did not find any significant association with patients showing suicidal behaviour. Choong, Tee, and Tang (2014) selected 9 SNPs and conducted a meta-analysis with a total of 2536 cases and 3101 controls in 11 case-control studies. No significant results were detected, suggesting that *TPH2* may not play a significant role in suicidal behaviour. Interestingly, polymorphisms in the *TPH2* gene were found in relation to personality traits like aggression or impulsivity, emotional regulation, and neuroticism (Perez-Rodriguez et al. 2010; Hong et al. 2011).

Serotonin Transporter

The function of serotonin transporter (5-HTT) is to reuptake the released serotonin from the synaptic cleft. A function insertion/deletion variant in the promoter region contain two or three alleles called short(s) and long (IA and IG). Polymorphisms in HTTLPR have been associated with numerous neuropsychiatric disorders, including schizophrenia, depression, and aggression. These disorders in turn increase the susceptibility of suicidal behaviour. Anguelova, Benkelfat, and Turecki (2003) conducted a meta-analysis pooling 12 studies investigating the *5-HTT* promoter polymorphism. A total of 1,168 cases (suicide completers and suicide attempters) and 1,371 controls (compromised of 10 Caucasian populations, 1US population and 1 Chinese population) were studied. A significant association of the s allele was demonstrated with suicidal behaviour. Lin and Tsai (2004) also performed a meta-analysis but reported no association between 5-*HTTLPR* polymorphism and suicidal behaviour ($p = 0.379$). When they compared subjects with the same psychiatric diagnosis, the genotypes carrying the s allele were significantly more frequent in suicide attempters than in non-attempters ($p = 0.004$). In addition, the s allele was associated with violent suicide ($p = 0.0001$) but not with non-violent suicide ($p = 1.00$). Li and He (2007) provided a comprehensive meta-analysis pooling 39 studies and found that long alleles to be associated with decreased risk of suicide attempts (OR 0.88; 95% CI 0.80–0.97). Clayden et al. (2012) analysed the association between the serotonin transporter s allele and suicidal behaviour in 31 primary case-control studies (6324 cases and 10,285 controls). The results revealed no significance association, however, subgroups of suicide attempters demonstrated significance association with serotonin transporter (*SLC6A4*) 5-HTTLPR [OR 1.13 (95% CI 1.05–1.21), $p = 0.001$], suggesting that the *5-HTTLPR* and rs1800532 polymorphisms are significantly associated with suicide attempts, but not with completed suicides. A recent meta-analysis by Schild, Pietschnig, Tran, and Voracek (2013) included 2536 cases and 3984 controls and further supported the involvement of the *5-HTTLPR* in suicidal behaviour. Anguelova, Benkelfat, and Turecki (2003) combined 12 studies investigating *5-HTT* promoter 44 bp insertion/deletion polymorphism in a total of 1,599 and 2,539 subjects. The combined evidence was significant association with the 5-HTT locus (OR 1.1795%, CI 1.04–1.32, $p = 0.009$), suggesting that *5-HTT* may play a role in the predisposition to suicide. Several other studies found an association between the SS genotype/S allele and increased lethality (Saiz et al., 2011; Wasserman et al., 2007) and violent attempts (Neves et al., 2008, 2010). In a large cohort of 5608 controls and subjects suffering from various psychiatric disorders, Perroud et al. (2010) studied the frequency of haplotypes and corresponding genotypes combining the *5-HTTLPR* and the other serotonin transporter promoter functional variant (rs25531). They found that a very rare G-14/G-16 genotype was carried by only three subjects who were women with a history of suicide attempt. Taken together, these studies provide evidence that *5-HTTLPR* may play crucial role in the suicidal behaviour.

Serotonin Receptors

Serotonin receptors, a G protein-coupled receptor super family, consist of receptors named 5-HT1 to 5-HT7 (Cowen, 1991). Here, we focus on the genetics of serotonin receptors in the context of suicidal behaviour.

5-HT1A Receptor

Lemonde et al. (2003) conducted common variant of C1109G on the promoter region in a sample of suicide victims and control subjects. They found that G allele was significantly over-represented in the suicide group. In a total of 191 suicide and 218 healthy control subjects, Samadi et al. (2012) studied association between polymorphisms C1019G, C47T (Pro16Leu), and G815A (Gly272Asp) and suicidal behaviour taking into account age, gender, and the presence of stressful life, and loss events in 1 year prior to suicide. They found that the distribution of C1019G genotypes was significantly different in suicide victims and healthy controls ($p = 0.002$), and the GG genotype was associated with a significantly higher number of more stressful life and loss events in the suicide victims ($p = 0.017$, $p = 0.037$, respectively). Two missense polymorphisms, Pro16Leu and Gly 272 Asp, have also been investigated in the Japanese subjects and the results revealed no significant differences in genotype distribution or allele frequencies between suicide victims and controls. Ohtani, Shindo, and Yoshioka (2004) conducted a meta-analysis for the A652G polymorphisms and reported no association and three further meta-analyses for the C1019G variants were also negative (Rivera, Bermúdez Ocaña, Camarena Medellín, & Tovilla-Zárate, 2012, Schild et al., 2013)

5-HT1B Receptor

The *5-HT1B* gene is located at 6q13 which includes 1.17 kb of axons regions. The *5-HT1B* has received attention due to its association with aggressive and impulsive behaviour. Kia-Keating, Glatt, and Tsuang (2007) performed a meta-analysis of 6 studies with various study designs and did not find significant results for the G861C allele with suicidal behaviour. Another meta-analysis also did not find significant results in a sample of 2,948 cases and 4,066 controls (Clayden et al., 2012). Jensen et al. (2009) reported that a mirSNP, regulated by mir-96, was significantly associated with aggressive behaviour. Conner et al. (2010) genotyped 5 polymorphisms in the *HTR1B* gene (rs11568817, rs130058, rs6296, rs6297, rs13212041) in 361 University students. They found rs13212041 polymorphism, which modulates miRNA-mediated regulation of *HTR1B* expression, can predict self-reported anger and hostility among young men. Recently, Hakulinen et al. (2013) examined a connection between polymorphism of *HTR1B* in 967 participants from a large

population-based sample with 27-year follow-up. They found rs6296 was associated with childhood aggressive behaviour but not with adulthood anger or hostility.

5-HT2A Receptor

Earlier, the density of brain and platelet 5HT2A receptors has been shown to be increased in suicidal patients (Du, Bakish, Lapierre, Ravindran, & Hrdina, 2000). Thus, *5-HT2A* receptor has been considered to be a major candidate gene in suicidal behaviour (Bachus et al., 1997). A first meta-analysis with 9 studies, which included 596 suicidal completers or attempters and 1003 healthy controls, showed no association with T102C located in an axon (Anguelova et al., 2003). Later, Li et al. (2006) carried out a meta-analysis of 25 studies on suicidal behaviour and they also did not find significant association with suicide attempter (OR 0.98; 95% CI 0.83–1.16). On the other hand, another SNP in the promoter region A1438G in seven studies showed that A-allele has protective risk of suicide (OR 0.67, 95% CI 0.59–0.89). Fanous et al. (2009) investigated the tagSNPs, spanning *HTR2A* genome regions, in the 270 families with suicidal ideation. They did not find significant association with the any tagSNPs or haplotype and suicidal ideation. Interestingly, Giegling, Hartmann, Möller, & Rujescu, 2006) found that the *HTR2A* variants rs594242-rs6311: G-C and rs6311 C were associated with increased non-violent and impulsive suicidal behaviour, respectively. On the other hand, the CC genotype of the T102C SNP was more frequent among suicide attempters (Vaquero-Lorenzo et al., 2008; Wrzosek et al., 2011). In 227 suicide attempters, 686 non-suicidal psychiatric patients, and 420 healthy controls from a homogeneous Spanish Caucasian population, Saiz et al. (2011) found no differences in genotype frequencies between the three groups.

Dopaminergic System and Catecholamine's

Soderstrom, Blennow, Manhem, and Forsmen (2001) reported that high cerebrospinal fluid (CSF) levels of the dopamine metabolite HVA correlates with human aggression, whereas Pitchot, Hansenne, and Ansseau (2001) found the involvement of D2-dopaminergic functions in the biology of suicide by demonstrating a smaller growth hormone response to apomorphine, a dopaminergic agonist. These investigators also found that reduced dopamine function in depressed patients was related to suicidal behaviour but not its lethality (Pitchot et al., 2001b). Catechol-O-Methyltransferase (COMT), a major enzyme which can inactivate the activity of dopamine and noradrenalin has received much attention in psychiatric illnesses because of the functional polymorphisms associated with val158met (Chen et al., 2004). Kia-Keating et al. (2007) performed a meta-analysis of a total 519 cases and 933 healthy controls and included 6 studies. They found

Val158Met was significantly associated with suicidal behaviour. Additionally, Calati et al. (2011) summarized 10 studies with 1324 patients but found no association between val158met and suicidal behaviour. Tovilla-Zárate et al. (2011) further confirmed no difference in this functional polymorphism between suicidal patients and healthy control.

Brain-Derived Neurotrophic Factors

BDNF is a member of the neurotrophin family of growth factors (Laske & Eschweiler, 2006). Several studies have revealed that the expression of BDNF is lower in postmortem brain of suicide victims (Dwivedi et al., 2003) as well as in patients with suicidal behaviour (Dwivedi et al., 2003; Lee, Kim, Park, & Kim, 2007). Because of these findings, several studies attempted to study polymorphism in BDNF gene in suicide. The most studied polymorphism in BDNF gene is Val66Met. This polymorphism is a missense mutation at position 66 resulting in a valine to methionine substitution. Previous studies demonstrated that the BDNF val66met polymorphism was associated with impaired cognitive functioning and worse memory functioning in humans (Egan et al., 2003). Hong et al. (2003) found that V66M polymorphism in the BDNF was not associated with suicide attempts in bipolar disorder or major depressed patients. No association between V66M and suicide victims was also reported by Zarrilli et al. (2009). However, Vincze et al. (2008) found the frequency of Met allele in violent bipolar disorder patients was higher than the healthy controls. Kim et al. (2008) studied the allelic and genotypic distributions of BDNF Val/Met in a population of 169 bipolar patients and 251 normal controls and found that the rate of suicide attempts among the Val/Val (11.3%), Val/Met (28.8%), and Met/Met (38.9%) genotype groups were significantly different. Relative to patients with the Val/Val genotype had a 4.9-fold higher risk of suicide attempts than those with the Met/Met genotype. A recent study with combining 11 published studies reported that Met allele was associated with suicide victims ($p = 0.032$, ORmet = 1.16) (Zai et al., 2012). Iga et al. (2007) studied BDNF Val66Met polymorphism in depressed patients in a Japanese population. They found similar genotypic distributions and allele frequencies among the patients and control subjects. However, when the relationships of the polymorphism with several clinical variables were examined, Met allele had significant effects on psychotic feature and suicidal behaviour and family history. These results suggest that the BDNF Val66Met polymorphism is not related to the development of MDD but related to clinical features of MDD. Another meta-analysis with 8 published studies showed that the met carrier have a higher trend for suicide. The Met allele and genotype show significance with suicide attempt (Zai et al., 2012). Gonzalez-Castro et al. (2015) studied the association of Val66Met BDNF polymorphism in bipolar disorder in a Mexican population. Although their results from the meta-analysis (9,349 cases and 7,437 controls) did not show a significant association in any of the models, however, when they analysed the association between rs6265 and lifetime

history of suicidal behaviour, they found an association between genotype Val–Val and suicide attempt. Recently, Bresin, Sima Finy, and Verona (2013) explored the interaction between retrospective reports of childhood emotional environment and the BDNF Val66Met polymorphism in relation to a history of two main types of self-injurious behaviours: suicide attempt and non-suicidal self-injury, in a sample of individuals with a history of involvement in the criminal justice system. For individuals with two Val alleles, these investigators found a significant direct relationship between emotional maltreatment and self-injurious behaviours. However, the relationship was not significant for Met carriers.

Genome-Wide Association Studies of Suicide Behaviour

With the rapid development of technological advances in genomics, Genome-wide association study (GWAS) can scan more than 1 million SNPs across the genome in parallel and provide an in-depth knowledge of the genetic information. Several GWAS studies have emerged in the suicidal behaviour.

Treatment-Emergent Suicidal Ideation

Laje et al. (2009) collected 90 white participants who were treatment-emergent suicidal ideators and matched healthy controls. Based on these subjects, the authors performed a GWAS and 109365 SNPs were genotyped on the Illumina Human-1 Bead chip. One SNP in the gene *PALPLN* reached genome-wide significant and another SNP in the gene *IL28RA* showed a trend. *PAPLN* encodes papil in, a protoglycan-like sulfated glycoprotein. *IL28RA* encodes an interleukin receptor. Perroud et al. (2012) examined to identify genetic variants involved in increasing suicidal ideation during escitalopram and nortriptyline treatment. They studied a total number of 706 major depressed patients treated with escitalopram or nortriptyline and genotyped those using platform based on the Illumina 610-Quad Beadchips. The genetic marker most significantly associated with increasing suicidality was a SNP (rs11143230) located 30 kb down stream of a gene encoding guanine deaminase on chromosome 9q21.13. Two suggestive drug-specific associations within *KCNIP4* (Kv channel-interacting protein 4; chromosome 4p15.31) and near *ELP3* (elongation protein 3 homolog; chromosome 8p21.1) were found in subjects treated with escitalopram. The most significant association with in a set of 33 candidate genes was in the neurotrophic tyrosine kinase receptor type 2 genes. They also found a trend for an association within genes such as *GRIP1*, *NXPH1* and *ANK3*, previously associated with psychiatric phenotypes indirectly linked to suicidal behaviour. The results suggest novel pathways involved in increasing suicidal ideation during antidepressant treatment and can help to target treatment to reduce the risk of this dramatic adverse event. A third GWAS on treatment-emergent

suicidal ideators was provided by Menke et al. (2012) in depressed patients (n = 397) with suicidal thoughts. They did not find any genome-wide significant variant. The best associated SNP was rs1630535 (p value = 1.3×10^{-7}). Fourteen variants showed nominal significant association with the same risk allele in the replication sample. The study suggests that a combination of genetic markers maybe used to identify patients at risk for treatment-emergent suicidal ideation.

Suicide Attempts

Perlis et al. (2010) reported the first GWAS on suicide attempts. Data on lifetime suicide attempts were extracted from GWAS of bipolar I and II disorder as well as MDD. For suicide attempt in bipolar disorder, rs1466864 was identified to be the most significant. Five loci also showed suggestive association. For suicide attempt in major depressive disorder, rs2576377 in *ABI3BP* gene showed the strongest association where as six loci showed nominal association. Schosser et al. (2011) performed a genome-wide association scan in 251 depressed patients with serious suicidal attempts. No SNP reached the cutoff of genome-wide significance level. For the quantitative trait, GFRA1 was detected to be associated with suicide attempts ($p = 2 \times 10^{-6}$). For the discrete trait of suicide attempt, SNPs in *KIAA1244* and *RGS18* showed suggestive associations. A polymorphism in *NTRK2*, previously associated with suicidality (Kohli et al., 2010; Perroud et al., 2009; Ropret, Zupanc, Komel, & Videtic Paska, 2015), was also validated. Willour et al. (2012) conducted GWAS and compared the SNP genotypes between 1201 bipolar subjects with a history of suicide attempts and 1,497 bipolar subjects without a history of suicide attempts. In all, 2,507 SNPs were identified with an evidence for association at $p < 0.001$. These associated SNPs were subsequently tested for association in a large and independent bipolar sample set. None of these SNPs showed significantly associated in the replication sample after correcting for multiple testing, but the combined analysis of the two sample sets produced an association signal on 2p25 (rs300774) at the threshold of genome-wide significance ($p = 5.07 \times 10^{-8}$). The associated SNPs on 2p25 fall in a large linkage disequilibrium block containing the *ACP1* (acid phosphatase 1) gene, whose expression is significantly elevated in bipolar subjects who completed suicide. Furthermore, the ACP1 protein is a tyrosine phosphatase that influences Wnt signalling, a pathway regulated by lithium, making *ACP1* a functional candidate for involvement in the phenotype. Mullins et al. (2014) conducted a genome-wide association and meta-analysis. They reported no significant evidence for association at any SNP in the GWAS or meta-analysis. Meanwhile, polygenic score analyses were performed to suicide attempts in the mood disorder cohorts or ideation status in the GENDEP study. Polygenic scores for suicidal behaviour showed no predictive ability for suicidal ideation.

A recent SNP GWAS on severity of suicidal behaviour was published by Zai et al. (2015). This GWAS was conducted in three independent bipolar patients. No genome-wide significant association of any tested markers was found in any of the

bipolar samples, although a number of common variants located on the chromosomes 8 and 10 showed suggestive association. A more recent GWAS on suicidal behaviour was performed by Galfalvy et al. (2015). A consortium of US, Canadian, and German teams assembled 2 groups of cases: suicide attempters and suicides (n = 577) and non-attempter psychiatric and healthy controls (n = 1233). The test was repeated separating suicide attempter and completed suicide as outcomes. No SNP reached genome-wide significance but several SNPs within *STK3*, *ADAMTS14*, *PSME12*, and *TBX20* genes reached $p < 1 \times 10^{-5}$ level.

In summary, although the results of these GWAS in suicide were all essentially negative, they do suggest interesting candidate genes that may be worthwhile to follow up in future studies. It is becoming increasingly clear that individual's genetic susceptibility factors for suicide are likely to have only minor effects, and very large pooled analyses of cases and controls will be necessary to identify them.

Conclusions and Future Directions

Suicide is a multifactorial and complex disorder. Apart from biological and psychosocial factors, environmental factors are also critical in predisposition of suicidal behaviour. As discussed above, a large number of genetic studies have been conducted in psychiatric disorder patients dissecting suicidal behaviour. Majority of the studies are focused on serotonergic pathways which is logical given that this neurotransmitter is the most implicated in suicide. Several studies link *TPH1* gene with suicide. More recently, *TPH2* gene shows promising results only when haplotypic analysis is done. *5-HTTLPR* (S (L) allele) is another candidate gene which has shown an association with violent suicide attempts. The results of serotonin receptor subtypes are mixed. Several factors may contribute to conflicting results. As pointed out earlier, some studies are positive in Caucasians but negative in Asian population or vice versa. There are several technical and statistical limitations to the candidate gene approach. This has led to GWAS, which has provided some interesting results, although majority of them are negative. There are several issues with GWAS as discussed elegantly by Ward and Kellis (2012). They have discussed the influence of cumulative predictive power, noncoding variants, detection of rare variants, and reproducibility on GWAS studies. At present, most of the susceptible variants are demonstrated to be located on the intron regions on the chromosome. Thus, it is difficult to explain the function of these identified susceptible variants. Whole exome and whole genome sequencing can detect rare variants and functional mutations. Objectively, whole exome and whole genome sequencing have been applied into the many complex diseases, such as cancer, schizophrenia, autism, etc., however, there is yet to find any report in suicide behaviour. Environmental and/or socioeconomic factors need to be considered carefully that can affect phenotype and assessing noncoding mutation is a challenging task. Even with these limitations, the filed is moving forward and effort needs to be made to form a consortium where a large number of patients and healthy controls can be recruited and examined in a single study.

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References

Abbar, M., Courtet, P., Bellivier, F., Leboyer, M., Boulenger, J., Castelhau, D., … Paoloni-Giacobino, A. (2001). Suicide attempts and the tryptophan hydroxylase gene. *Molecular Psychiatry, 6*(3), 268–273.

Andre, K., Kampman, O., Viikki, M., Illi, A., Setälä-Soikkeli, E., Poutanen, O., & Lehtimaki, T. (2013). TPH1 A218C polymorphism and temperament in major depression. *BMC Psychiatry, 13*(1), 118.

Anguelova, M., Benkelfat, C., & Turecki, G. (2003). A systematic review of association studies investigating genes coding for serotonin receptors and the serotonin transporter: II. Suicidal behaviour. *Molecular Psychiatry, 8*(7), 646–653.

Asberg, M. (1997). Neurotransmitters and suicidal behaviour. The evidence from cerebrospinal fluid studies. *Annals of the New York Academy of Sciences, 836*(1), 158–181.

Bachus, S. E., Hyde, T. M., Akil, M., Weickert, C. S., Vawter, M. P., & Kleinman, J. E. (1997). Neuropathology of suicide. *Annals of the New York Academy of Sciences, 836*(1), 201–219.

Baud, P., Perroud, N., Courtet, P., Jaussent, I., Relecom, C., Jollant, F., & Malafosse, A. (2009). Modulation of anger control in suicide attempters by TPH 1. *Genes, Brain and Behaviour, 8* (1), 97–100.

Bellivier, F., Chaste, P., & Malafosse, A. (2004). Association between the TPH gene A218C polymorphism and suicidal behaviour: A meta analysis. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 124*(1), 87–91.

Boularand, S., Darmon, M. C., Ravassard, P., & Mallet, J. (1995). Characterization of the human tryptophan hydroxylase gene promoter transcriptional regulation by camp requires a new motif distinct from the camp-responsive element. *Journal of Biological Chemistry, 270*(8), 3757–3764.

Breidenthal, S. E., White, D. J., & Glatt, C. E. (2004). Identification of genetic variants in the neuronal form of tryptophan hydroxylase (TPH2). *Psychiatric Genetics, 14*(2), 69–72.

Bresin, K., Sima Finy, M., & Verona, E. (2013). Childhood emotional environment and self-injurious behaviours: The moderating role of the BDNF Val66Met polymorphism. *Journal of Affective Disorders, 150*(2), 594–600.

Calati, R., Porcelli, S., Giegling, I., Hartmann, A. M., Moller, H. J., De Ronchi, D., & Rujescu, D. (2011). Catechol-o-methyltransferase gene modulation on suicidal behaviour and personality traits: Review, meta-analysis and association study. *Journal of Psychiatric Research, 45*(3), 309–321.

Celada, P., Puig, M. V., Amargós-Bosch, M., Adell, A., & Artigas, F. (2004). The therapeutic role of 5-HT1A and 5-HT2A receptors in depression. *Journal of Psychiatry & Neuroscience, 29*(4), 252–265.

Chen, J., Lipska, B. K., Halim, N., Ma, Q. D., Matsumoto, M., Melhem, S., & Weinberger, D. R. (2004). Functional analysis of genetic variation in catechol-O-methyltransferase (COMT): Effects on mRNA, protein, and enzyme activity in postmortem human brain. *American Journal of Human Genetics, 75*(5), 807–821.

Choong, M. Y., Tee, S. F., & Tang, P. Y. (2014). Meta-analysis of polymorphisms in TPH2 gene and suicidal behaviour. *Psychiatry Research, 220*(3), 1163–1166.

Cicchetti, D., Rogosch, F. A., & Thibodeau, E. L. (2012). The effects of child maltreatment on early signs of antisocial behaviour: Genetic moderation by tryptophan hydroxylase, serotonin transporter, and monoamine oxidase A genes. *Development and Psychopathology, 24,* 907–928.

Clayden, R., Zaruk, A., Meyre, D., Thabane, L., & Samaan, Z. (2012). The association of attempted suicide with genetic variants in the SLC6A4 and TPH genes depends on the definition of suicidal behaviour: A systematic review and meta-analysis. *Translational Psychiatry, 2*(10), e166.

Conner, T. S., Jensen, K. P., Tennen, H., Furneaux, H. M., Kranzler, H. R., & Covault, J. (2010). Functional polymorphisms in the serotonin 1B receptor gene (HTR1B) predict self-reported anger and hostility among young men. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 153*(1), 67–78.

Cowen, P. (1991). Serotonin receptor subtypes: implications for psychopharmacology. *The British Journal of Psychiatry, 159*(12), 7–14.

Du, L., Bakish, D., Lapierre, Y. D., Ravindran, A. V., & Hrdina, P. D. (2000). Association of polymorphism of serotonin 2A receptor gene with suicidal ideation in major depressive disorder. *American Journal of Medical Genetics, 96*(1), 56–60.

Dwivedi, Y., Rizavi, H. S., Conley, R. R., Roberts, R. C., Tamminga, C. A., & Pandey, G. N. (2003). Altered gene expression of brain-derived neurotrophic factor and receptor tyrosine kinase B in postmortem brain of suicide subjects. *Archives of General Psychiatry, 60*(8), 804–815.

Egan, M. F., Kojima, M., Callicott, J. H., Goldberg, T. E., Kolachana, B. S., Bertolino, A., & Weinberger, D. R. (2003). The BDNF val66met polymorphism affects activity-dependent secretion of BDNF and human memory and hippocampal function. *Cell, 112*(2), 257–269.

Fanous, A. H., Chen, X., Wang, X., Amdur, R., O'Neill, F. A., Walsh, D., & Kendler, K. S. (2009). Genetic variation in the serotonin 2A receptor and suicidal ideation in a sample of 270 Irish high-density schizophrenia families. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 150*(3), 411–417.

Galfalvy, H., Haghighi, F., Hodgkinson, C., Goldman, D., Oquendo, M. A., Burke, A., & Mann, J. J. (2015). A genome-wide association study of suicidal behaviour. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 168*(7), 557–563.

Galfalvy, H., Huang, Y.-Y., Oquendo, M. A., Currier, D., & Mann, J. J. (2009). Increased risk of suicide attempt in mood disorders and TPH1 genotype. *Journal of Affective Disorders, 115*(3), 331–338.

Giegling, I., Hartmann, A. M., Möller, H.-J., & Rujescu, D. (2006). Anger-and aggression-related traits are associated with polymorphisms in the 5-HT-2A gene. *Journal of Affective Disorders, 96*(1), 75–81.

González-Castro, T. B., Juárez-Rojop, I., López-Narváez, M. L., & Tovilla-Zárate, C. A. (2014). Association of TPH-1 and TPH-2 gene polymorphisms with suicidal behaviour: A systematic review and meta-analysis. *BMC Psychiatry, 14*(1), 196.

Gonzalez-Castro, T. B., Nicolini, H., Lanzagorta, N., Lopez-Narvaez, L., Genis, A., Pool Garcia, S., & Tovilla-Zarate, C. A. (2015). The role of brain-derived neurotrophic factor (BDNF) Val66Met genetic polymorphism in bipolar disorder: A case-control study, comorbidities, and meta-analysis of 16,786 subjects. *Bipolar Disorder, 17*(1), 27–38.

Hakulinen, C., Jokela, M., Hintsanen, M., Merjonen, P., Pulkki-Råback, L., Seppälä, I., & Viikari, J. (2013). Serotonin receptor 1B genotype and hostility, anger and aggressive behaviour through the lifespan: The Young Finns study. *Journal of Behavioural Medicine, 36*(6), 583–590.

Holmes, A. (2008). Genetic variation in cortico-amygdala serotonin function and risk for stress-related disease. *Neuroscience & Biobehavioural Reviews, 32*(7), 1293–1314.

Hong, C. J., Huo, S. J., Yen, F. C., Tung, C. L., Pan, G. M., & Tsai, S. J. (2003). Association study of a brain-derived neurotrophic-factor genetic polymorphism and mood disorders, age of onset and suicidal behaviour. *Neuropsychobiology, 48*(4), 186–189.

Hong, K. W., Weiss, A., Morimura, N., Udono, T., Hayasaka, I., Humle, T., et al. (2011). Polymorphism of the tryptophan hydroxylase 2 (TPH2) gene is associated with chimpanzee neuroticism. *PloS ONE, 6*(7), e22144.

Iga, J., Ueno, S., Yamauchi, K., Numata, S., Tayoshi-Shibuya, S., Kinouchi, S., & Ohmori, T. (2007). The Val66Met polymorphism of the brain-derived neurotrophic factor gene is associated with

psychotic feature and suicidal behaviour in Japanese major depressive patients. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 144b*(8), 1003–1006.

Jensen, K. P., Covault, J., Conner, T. S., Tennen, H., Kranzler, H. R., & Furneaux, H. M. (2009). A common polymorphism in serotonin receptor 1B mRNA moderates regulation by miR-96 and associates with aggressive human behaviours. *Molecular Psychiatry, 14*(4), 381–389.

Karanović, J., Ivković, M., Jovanović, V. M., Pantović, M., Pavlović-Janković, N., Damjanović, A., … Savić-Pavićević, D. (2016). Tryptophan hydroxylase 1 variant rs1800532 is associated with suicide attempt in serbian psychiatric patients but does not moderate the effect of recent stressful life events. *Suicide and Life-Threatening Behaviour*. Ahead of print. doi:10.1111/sltb.12246.

Kia-Keating, B. M., Glatt, S. J., & Tsuang, M. T. (2007). Meta-analyses suggest association between COMT, but not HTR1B, alleles, and suicidal behaviour. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 144*(8), 1048–1053.

Kim, B., Kim, C. Y., Hong, J. P., Kim, S. Y., Lee, C., & Joo, Y. H. (2008). Brain-derived neurotrophic factor Val/Met polymorphism and bipolar disorder. Association of the Met allele with suicidal behaviour of bipolar patients. *Neuropsychobiology, 58*(2), 97–103.

Kohli, M. A., Salyakina, D., Pfennig, A., Lucae, S., Horstmann, S., Menke, A., & Binder, E. B. (2010). Association of genetic variants in the neurotrophic receptor-encoding gene NTRK2 and a lifetime history of suicide attempts in depressed patients. *Archives of General Psychiatry, 67*(4), 348–359.

Koller, G., Bondy, B., Preuss, U. W., Bottlender, M., & Soyka, M. (2003). No association between a polymorphism in the promoter region of the MAOA gene with antisocial personality traits in alcoholics. *Alcohol and Alcoholism, 38*(1), 31–34.

Laje, G., Allen, A. S., Akula, N., Manji, H., John Rush, A., & McMahon, F. J. (2009). Genome-wide association study of suicidal ideation emerging during citalopram treatment of depressed outpatients. *Pharmacogenetics and Genomics, 19*(9), 666–674.

Lalovic, A., & Turecki, G. (2002). Meta-analysis of the association between tryptophan hydroxylase and suicidal behaviour. *American Journal of Medical Genetics, 114*(5), 533–540.

Laske, C., & Eschweiler, G. (2006). Brain-derived neurotrophic factor. *Der Nervenarzt, 77*(5), 523–537.

Lee, B. H., Kim, H., Park, S. H., & Kim, Y. K. (2007). Decreased plasma BDNF level in depressive patients. *Journal of Affective Disorders, 101*(1–3), 239–244.

Lemonde, S., Turecki, G., Bakish, D., Du, L., Hrdina, P. D., Bown, C. D., & Basak, A. (2003). Impaired repression at a 5-hydroxytryptamine 1A receptor gene polymorphism associated with major depression and suicide. *The Journal of Neuroscience, 23*(25), 8788–8799.

Li, D., Duan, Y., & He, L. (2006). Association study of serotonin 2A receptor (5-HT2A) gene with schizophrenia and suicidal behaviour using systematic meta-analysis. *Biochemical and Biophysical Research Communications, 340*(3), 1006–1015.

Li, D., & He, L. (2007). Meta-analysis supports association between serotonin transporter (5-HTT) and suicidal behaviour. *Molecular Psychiatry, 12*(1), 47–54.

Lin, P. Y., & Tsai, G. (2004). Association between serotonin transporter gene promoter polymorphism and suicide: Results of a meta-analysis. *Biological Psychiatry, 55*(10), 1023–1030.

Liu, X., Li, H., Qin, W., He, G., Li, D., Shen, Y., & He, L. (2006). Association of TPH1 with suicidal behaviour and psychiatric disorders in the Chinese population. *Journal of Medical Genetics, 43*(2), e04.

Mann, J. J., Malone, K. M., Nielsen, D. A., Goldman, D., Erdos, J., & Gelernter, J. (1997). Possible association of a polymorphism of the tryptophan hydroxylase gene with suicidal behaviour in depressed patients. *American Journal of Psychiatry, 154*(10), 1451–1453.

Menke, A., Domschke, K., Czamara, D., Klengel, T., Hennings, J., Lucae, S., & Holsboer, F. (2012). Genome-wide association study of antidepressant treatment-emergent suicidal ideation. *Neuropsychopharmacology, 37*(3), 797–807.

Mittendorfer-Rutz, E., Rasmussen, F., & Wasserman, D. (2008). Familial clustering of suicidal behaviour and psychopathology in young suicide attempters. *Social Psychiatry and Psychiatric Epidemiology, 43*(1), 28–36.

Mullins, N., Perroud, N., Uher, R., Butler, A. W., Cohen Woods, S., Rivera, M., & Tansey, K. E. (2014). Genetic relationships between suicide attempts, suicidal ideation and major psychiatric disorders: A genome-wide association and polygenic scoring study. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 165*(5), 428–437.

Neves, F., Silveira, G., Romano-Silva, M., Malloy Diniz, L., Ferreira, A., De Marco, L., & Correa, H. (2008). Is the 5-HTTLPR polymorphism associated with bipolar disorder or with suicidal behaviour of bipolar disorder patients? *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 147*(1), 114–116.

Neves, F. S., Malloy-Diniz, L. F., Romano-Silva, M. A., Aguiar, G. C., de Matos, L. O., & Correa, H. (2010). Is the serotonin transporter polymorphism (5-HTTLPR) a potential marker for suicidal behaviour in bipolar disorder patients? *Journal of Affective Disorders, 125*(1), 98–102.

Nielsen, D. A., Goldman, D., Virkkunen, M., Tokola, R., Rawlings, R., & Linnoila, M. (1994). Suicidality and 5-hydroxyindoleacetic acid concentration associated with a tryptophan hydroxylase polymorphism. *Archives of General Psychiatry, 51*(1), 34–38.

Nielsen, D. A., Virkkunen, M., Lappalainen, J., Eggert, M., Brown, G. L., Long, J. C., & Linnoila, M. (1998). A tryptophan hydroxylase gene marker for suicidality and alcoholism. *Archives of General Psychiatry, 55*(7), 593–602.

Ohtani, M., Shindo, S., & Yoshioka, N. (2004). Polymorphisms of the tryptophan hydroxylase gene and serotonin 1A receptor gene in suicide victims among Japanese. *The Tohoku Journal of Experimental Medicine, 202*(2), 123–133.

Paik, I.-H., Toh, K.-Y., Kim, J.-J., & Lee, C. (2000). TPH gene may be associated with suicidal behaviour, but not with schizophrenia in the Korean population. *Human Heredity, 50*(6), 365–369.

Perez-Rodriguez, M. M., Weinstein, S., New, A. S., Bevilacqua, L., Yuan, Q., Zhou, Z., et al. (2010) Tryptophan-hydroxylase 2 haplotype association with borderline personality disorder and aggression in a sample of patients with personality disorders and healthy controls. *Journal of Psychiatric Research, 44*(15), 1075–1081.

Perlis, R. H., Huang, J., Purcell, S., Fava, M., Rush, A. J., Sullivan, P. F., … Smoller, J. W. (2010). Genome-wide association study of suicide attempts in mood disorder patients. *American Journal of Psychiatry, 167*(12), 1499–1507.

Perroud, N., Aitchison, K. J., Uher, R., Smith, R., Huezo-Diaz, P., Marusic, A., & Craig, I. (2009). Genetic predictors of increase in suicidal ideation during antidepressant treatment in the GENDEP project. *Neuropsychopharmacology, 34*(12), 2517–2528.

Perroud, N., Salzmann, A., Saiz, P. A., Baca-Garcia, E., Sarchiapone, M., Garcia-Portilla, M. P., & Malafosse, A. (2010). Rare genotype combination of the serotonin transporter gene associated with treatment response in severe personality disorder. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 153b*(8), 1494–1497.

Perroud, N., Uher, R., Ng, M., Guipponi, M., Hauser, J., Henigsberg, N., & Rietschel, M. (2012). Genome-wide association study of increasing suicidal ideation during antidepressant treatment in the GENDEP project. *The Pharmacogenomics Journal, 12*(1), 68–77.

Pitchot, W., Hansenne, M., & Ansseau, M. (2001a). Role of dopamine in non-depressed patients with a history of suicide attempts. *European Psychiatry, 16*(7), 424–427.

Pitchot, W., Hansenne, M., Gonzalez Moreno, A., Pinto, E., Reggers, J., Fuchs, S., & Ansseau, M. (2001b). Reduced dopamine function in depressed patients is related to suicidal behaviour but not its lethality. *Psychoneuroendocrinology, 26*(7), 689–696.

Placidi, G. P., Oquendo, M. A., Malone, K. M., Huang, Y. Y., Ellis, S. P., & Mann, J. J. (2001). Aggressivity, suicide attempts, and depression: relationship to cerebrospinal fluid monoamine metabolite levels. *Biological Psychiatry, 50*(10), 783–791.

Rivera, A. M., Bermúdez Ocaña, D., Camarena Medellín, B., & Tovilla-Zárate, C. (2012). No association between the HTR1A gene and suicidal behaviour: A meta-analysis. *Revista Brasileira de Psiquiatria, 34*(1), 38–42.

Ropret, S., Zupanc, T., Komel, R., & Videtic Paska, A. (2015). Investigating the associations between polymorphisms in the NTRK2 and NGFR genes and completed suicide in the Slovenian sample. *Psychiatrics Genetics, 25*(6), 241–248.

Rotondo, A., Schuebel, K., Bergen, A., Aragon, R., Virkkunen, M., Linnoila, M., … Nielsen, D. (1999). Identification of four variants in the tryptophan hydroxylase promoter and association to behaviour. *Molecular Psychiatry, 4*(4), 360–368.

Roy, A., Rylander, G., Forslund, K., Asberg, M., Mazzanti, C. M., Goldman, D., & Nielsen, D. A. (2001). Excess tryptophan hydroxylase 17 779C allele in surviving cotwins of monozygotic twin suicide victims. *Neuropsychobiology, 43*(4), 233–236.

Roy, A., Segal, N. L., Centerwall, B. S., & Robinette, C. D. (1991). Suicide in twins. *Archives of General Psychiatry, 48*(1), 29–32.

Rujescu, D., Giegling, I., Bondy, B., Gietl, A., Zill, P., & Möller, H. J. (2002). Association of anger-related traits with SNPs in the TPH gene. *Molecular Psychiatry, 7*(9), 1023–1029.

Rujescu, D., Giegling, I., Sato, T., Hartmann, A. M., & Möller, H.-J. (2003). Genetic variations in tryptophan hydroxylase in suicidal behaviour: Analysis and meta-analysis. *Biological Psychiatry, 54*(4), 465–473.

Saiz, P. A., García-Portilla, P., Paredes, B., Corcoran, P., Arango, C., Morales, B., & Florez, G. (2011). Role of serotonergic-related systems in suicidal behaviour: Data from a case–control association study. *Progress in Neuro-Psychopharmacology and Biological Psychiatry, 35*(6), 1518–1524.

Samadi, R. B., Ghasemi, A., Seifi, M., Samadikuchaksaraei, A., Baybordi, F., & Danaei, N. (2012). Serotonin 1A receptor genetic variations, suicide, and life events in the Iranian population. *Psychiatry and Clinical Neurosciences, 66*(4), 337–343.

Schild, A. H., Pietschnig, J., Tran, U. S., & Voracek, M. (2013). Genetic association studies between SNPs and suicidal behaviour: A meta-analytical field synopsis. *Progress in Neuropsychopharmacology and Biological Psychiatry, 46,* 36–42.

Schosser, A., Butler, A. W., Ising, M., Perroud, N., Uher, R., Ng, M. Y., & Korszun, A. (2011). Genomewide association scan of suicidal thoughts and behaviour in major depression. *PLoS ONE, 6*(7), e20690.

Schulsinger, F. K., Kety, S., Rosenthal, D., Rosenthal, D., & Wender, P. H. (1979). A family study of suicide. In M. Schou & E. Stromgren (Eds.), *Origin, presentation and treatment of affective disorders* (pp. 277–287). London: Academic Press.

Soderstrom, H., Blennow, K., Manhem, A., & Forsman, A. (2001). CSF studies in violent offenders I. 5-HIAA as a negative and HVA as a positive predictor of psychopathy. *Journal of Neural Transmission, 108*(7), 869–878.

Souery, D., Van Gestel, S., Massat, I., Blairy, S., Adolfsson, R., Blackwood, D., … Mendlewicz, J. (2001). Tryptophan hydroxylase polymorphism and suicidality in unipolar and bipolar affective disorders: a multicenter association study. *Biological Psychiatry, 49*(5), 405–409.

Statham, D. J., Heath, A. C., Madden, P. A., Bucholz, K. K., Bierut, L., Dinwiddie, S., & Martin, N. (1998). Suicidal behaviour: An epidemiological and genetic study. *Psychological Medicine, 28*(4), 839–855.

Stefulj, J., Kubat, M., Balija, M., & Jernej, B. (2006). TPH gene polymorphism and aging: indication of combined effect on the predisposition to violent suicide. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 141*(2), 139–141.

Sugden, K., Tichopad, A., Khan, N., Craig, I. W., & D'Souza, U. M. (2009). Genes within the serotonergic system are differentially expressed in human brain. *BMC Neuroscience, 10*(1), 1.

Tovilla-Zárate, C., Juárez-Rojop, I., Ramón-Frias, T., Villar-Soto, M., Pool-García, S., Medellín, B. C., & Humberto, N. (2011). No association between COMT val158met polymorphism and suicidal behaviour: Meta-analysis and new data. *BMC Psychiatry, 11*(1), 151.

Tsai, S.-J., Hong, C.-J., & Wang, Y.-C. (1999). Tryptophan hydroxylase gene polymorphism (A218C) and suicidal behaviours. *NeuroReport, 10*(18), 3773–3775.

Turecki, G., Zhu, Z., Tzenova, J., Lesage, A., Seguin, M., Tousignant, M., et al. (2001). TPH and suicidal behaviour: A study in suicide completers. *Molecular Psychiatry, 6*(1), 98–102.

Vaquero-Lorenzo, C., Baca-Garcia, E., Diaz Hernandez, M., Perez-Rodriguez, M. M., Fernandez-Navarro, P., Giner, L., … Oquendo, M. A. (2008). Association study of two polymorphisms of the serotonin 2A receptor gene and suicide attempts. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 147*(5), 645–649.

Vincze, I., Perroud, N., Buresi, C., Baud, P., Bellivier, F., Etain, B., … Malafosse, A. (2008). Association between brain-derived neurotrophic factor gene and a severe form of bipolar disorder, but no interaction with the serotonin transporter gene. *Bipolar Disorders, 10*(5), 580–587.

Virkkunen, M., De Jong, J., Bartko, J., & Linnoila, M. (1989). Psychobiological concomitants of history of suicide attempts among violent offenders and impulsive fire setters. *Archives of General Psychiatry, 46*(7), 604–606.

Von Borczyskowski, A., Lindblad, F., Vinnerljung, B., Reintjes, R., & Hjern, A. (2011). Familial factors and suicide: an adoption study in a Swedish National Cohort. *Psychological Medicine, 41*(4), 749–758.

Voracek, M., & Loibl, L. M. (2007). Genetics of suicide: A systematic review of twin studies. *Wiener Klinische Wochenschrift, 119*(15–16), 463–475.

Walther, D. J., Peter, J.-U., Bashammakh, S., Hörtnagl, H., Voits, M., Fink, H., & Bader, M. (2003). Synthesis of serotonin by a second tryptophan hydroxylase isoform. *Science, 299* (5603), 76.

Ward, L. D., & Kellis, M. (2012). Interpreting noncoding genetic variation in complex traits and human disease. *Nature Biotechnology, 30*(11), 1095–1106.

Wasserman, D., Geijer, T., Sokolowski, M., Frisch, A., Michaelovsky, E., Weizman, A., & Wasserman, J. (2007). Association of the serotonin transporter promotor polymorphism with suicide attempters with a high medical damage. *European Neuropsychopharmacology, 17*(3), 230–233.

Willour, V. L., Seifuddin, F., Mahon, P. B., Jancic, D., Pirooznia, M., Steele, J., … MacKinnon, D. F. (2012). A genome-wide association study of attempted suicide. *Molecular Psychiatry, 17* (4), 433–444.

Wrzosek, M., Łukaszkiewicz, J., Wrzosek, M., Serafin, P., Jakubczyk, A., Klimkiewicz, A., … Wojnar, M. (2011). Association of polymorphisms in HTR2A, HTR1A and TPH2 genes with suicide attempts in alcohol dependence: A preliminary report. *Psychiatry Research, 190*(1), 149–151.

Zai, C. C., Gonçalves, V. F., Tiwari, A. K., Gagliano, S. A., Hosang, G., De Luca, V., … Kennedy, J. L. (2015). A genome-wide association study of suicide severity scores in bipolar disorder. *Journal of Psychiatric Research, 65*, 23–29.

Zai, C. C., Manchia, M., De Luca, V., Tiwari, A. K., Chowdhury, N. I., Zai, G. C., … Kennedy, J. L. (2012). The brain-derived neurotrophic factor gene in suicidal behaviour: A meta-analysis. *International Journal of Neuropsychopharmacology, 15*(8), 1037–1042.

Zarrilli, F., Angiolillo, A., Castaldo, G., Chiariotti, L., Keller, S., Sacchetti, S., … Sarchiapone, M. (2009). Brain derived neurotrophic factor (BDNF) genetic polymorphism (Val66Met) in suicide: A study of 512 cases. *American Journal of Medical Genetics Part B: Neuropsychiatric Genetics, 150b*(4), 599–600.

Zill, P., Büttner, A., Eisenmenger, W., Möller, H.-J., Bondy, B., & Ackenheil, M. (2004). Single nucleotide polymorphism and haplotype analysis of a novel tryptophan hydroxylase isoform (TPH2) gene in suicide victims. *Biological Psychiatry, 56*(8), 581–586.

Chapter 5
Impulsivity, Decision-Making and Their Role in Suicidal Behaviour

Yari Gvion and Alan Apter

Suicide is a leading cause of death worldwide and accounts for 1.5% of all deaths in developed countries (Hawton & Heeringen, 2009). Each year more than 800,000 people die due to suicide worldwide. Besides the increasing number of death by suicide, suicide attempts are even more prevalent. It is estimated that suicide attempts are 20-fold more frequent in the general population. Thus, it is estimated that 10–20 million people make suicide attempts. Suicide is a complex behaviour that is probably the end result of multiple different factors. Suicide attempts are associated with significant morbidities and constitute a major predictor and risk factor of later suicide attempts and death from suicide. Predictors of suicidal behaviour and risk factors include certain demographic variables, clinical symptoms, psychological variables, genetics and temperamental factors and issues related to medical and social support (Apter & Wassermann, 2003; Barraclough & Pallis, 1975; Beck, Steer, Kovacs, & Garrison, 1985; Fawcett et al., 1987; Gvion & Apter, 2012). The presence of psychopathology is probably the single most important predictor of suicide; however, it is of low specificity (Gvion & Apter, 2012). Nevertheless, despite the fact that most suicide attempters do suffer from psychopathology, most of those who are diagnosed with psychiatric disorders do not attempt suicide. Therefore, other factors over and above psychopathology must be involved. Unfortunately, despite increased prevention efforts, suicide rates over the past several decades have remained high and thus the question of what causes a person to commit suicide remains one of the central issues in psychiatry (Gvion & Apter, 2012).

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Suicidal behaviour is not a single phenomenon. It is a continuum with various terms incorporated in it, including deliberate self-harm, suicide attempts and eventually completed suicide. Suicide may be preceded by suicidal thoughts, threats, and gestures, non-suicidal self-injures and suicide attempts of various degrees of lethality. There is also diversity in suicide attempts, mainly between violent and nonviolent failed attempts, planned attempts vs impulsive ones (Gvion & Apter, 2011, 2012). However, one of the most important differences in suicide behaviour is the one between suicide ideation from the one hand and suicide attempts from the other hand. Klonsky and May (2014) have already suggested that one reason for the limited progress in suicide prevention might be a lack of knowledge about the transition from suicidal ideation to suicidal actions. Many more people think and consider suicide but most of them do not act upon those thoughts (Klonsky & May, 2014). For example, data from the National Survey on Drug Use and Health: National Findings (2008) show that although 3.7% of adults ageing 18 and older in the USA had thought about suicide, 1.0% had made plans to commit suicide, and only 0.5% had actually attempted suicide. It is, therefore, important to better differentiate suicide ideators from suicide attempters and to identify which ideators are at greatest risk of attempting suicide. This could greatly improve risk assessment (Klonsky & May, 2014) and prevention strategies. Impulsivity is one of the factors that may play an important role in the transition from ideating about suicide to performing suicide actions.

Impulsivity

Impulsivity is a prominent construct in most theories of personality. It has long been considered major to the aetiology and prediction of many psychiatric and psychological disorders as well as to normal development. Impulsivity, although vastly investigated, is not accurately defined. One of the main reasons for that is that impulsivity encompasses a broad range of behaviours that reflect impaired self-regulation (Evenden, 1999; Whiteside & Lynam, 2001). Expressions of impaired self-regulation are actions performed without conscious judgement, are characterized by acting on the spur of the moment, inadequate planning and difficulty to control one's behaviour (Moeller, Barratt, Dougherty, Schmotz, & Swann, 2001). This is thought to stem from deficits in the self-regulation of affect, motivation arousal and deficits in working memory and higher-order cognitive functions. This failure is connected to brain systems modulating behavioural inhibition (Mann & Currier, 2009). Some researches define impulsivity in terms of its different components. Thus, Cyders et al. (2007) distinguish five facets of impulsivity: sensation seeking, lack of deliberation, lack of persistence, positive urgency and negative urgency (the latter two meaning the tendency to act rashly in response to positive and negative affective states, respectively). Patton, Stanfoed, and Barratt (1995) define impulsivity in terms of attentional, motor and non-planning impulsiveness and look at impulsivity as a stable trait that can be evaluated using

personality questionnaires. Others, assess behavioural impulsivity using measures such as the Immediate Memory Task (IMT) (Dougherty et al., 2009; Keilp et al., 2006), or consider it as a state that can be assessed by taking individuals' subjective accounts of state impulsivity (Keilp et al., 2006). In a meta-analysis published some years ago, Cyders and Coskunpinar (2011) found a significant but rather small association between different measures across studies.

Impulsivity plays an important role in normal behaviour, as well as, in pathological form, in many kinds of abuse disorders and attention deficit/hyperactivity disorder (Evenden, 1999). One way of looking at impulsivity as normal or as abnormal is using Dickman's classification that differentiates between functional impulsivity and dysfunctional impulsivity. Dickman described functional impulsivity as "the tendency to engage in rapid, error-prone information processing (i.e. to act with relatively little forethought) when such a strategy is rendered optimal by the individual's other personality traits" (p. 101). Dysfunctional impulsivity is "the tendency to engage in rapid, error-prone information processing because of an inability to use a slower, more methodical approach under certain circumstances" (Dickman, 1990).

Developmental psychopathology views impulsivity as an amplification of a normal trait, which shows a range of individual differences in normal populations (Paris, 2005). Variability in impulsive behaviours changes in the course of development, and thus can derive from multiple roots: heritable influences and temperamental factors (Derryberry & Rothbart, 1997; Livesley, Jang, & Vernon, 1998; Plomin, DeFries, & McClearn, 2000): pharmacological, neural (Evenden, 1999; Roggenbach, Muller-Oerlinghausen, & Franke, 2002). All of these interact with psychological experiences and influence behaviour (Cadoret, Yates, Troughton, Woodworth, & Stewart, 1995; Evenden, 1999). Impulsive behaviour patterns are shaped by gene–environment interactions (Hinshaw, 2003). In longitudinal studies, levels of impulsivity have a consistent trajectory over the course of childhood and adolescence (Côté, Tremblay, Nagin, Zoccolillo, & Vitaro, 2002).

Impulsivity and Its Role in Suicidal Behaviour

The relationship between impulsivity and suicidal behaviour is well established in the literature (Brent & Melhem, 2008). As already mentioned, impulsivity has been assumed to facilitate the transition from suicidal ideations to attempts (Klonsky & May, 2010). It has even been suggested to be "a more significant indicator of suicide attempt than the presence of a specific suicide plan" (Byran & Rudd, 2006, p. 195). Others have emphasized that impulsivity makes individuals "more likely to act on suicidal feelings" (Mann, Waternaux, Haas, & Malone 1999, p. 181). However, studies have failed to consistently distinguish between suicide ideators and attempters (Klonsky & May, 2010). Thus, the research and literature on impulsivity and its contribution to suicidal behaviour has been overwhelmed by definitional and methodological hindrances, making it hard to conclude about the

existence of a uni-dimensional impulsive attempt (Klonsky & May, 2014). There are probably several reasons for that. One is that other factors skew the relationship between impulsivity and suicide behaviour. Another is the problem of the definitions and measures of the concept of impulsivity. Thus, the literature on impulsivity and its relationship to mental health uses different semantic and operational definitions of impulsivity across studies. This hinders the understanding of the significance that impulsivity has on suicidal behaviour in general and to high-lethal attempts in particular. In addition, the trait and state aspects of impulsivity are usually not differentiated in suicide research. Thus, an important distinction is between the state and trait dimensions of the impulsivity–suicide relationship, that is, impulsivity of the attempt (state) and impulsivity of the attempter (trait). These may not completely overlap or be equivalent. It may, thus, be crucial to distinguish between a suicidal act that is impulsive (or not) and a person who can be impulsive or not (Baca-Garcia et al., 2005). Various studies have shown that although people who attempt suicide tend to be more impulsive than those who do not, the actual act of completed suicide is often not made impulsively (Anestis, Selby, & Joiner, 2007). Usually, no preparation or forethought is involved in impulsive suicide attempts while preparation and forethought precede non-impulsive suicide attempts (Conner, 2004). Another important differentiation is between suicidal planning and suicidal intent. Although the both are related, they are not synonymous. Planned suicide is a more complicated construct that involves a more subjective element drawn from the desired outcome and perceived lethality of the act of self-harm (Beck, Schuyler, & Herman, 1974). Suicidal planning is related to, but not synonymous with, suicidal intent. Planned suicide involves a more subjective element drawn from the desired outcome and perceived lethality of the act of self-harm (Gvion & Apter, 2011).

The aforementioned suggests that researchers should not neglect the state and trait aspects of impulsivity. It is plausible that behavioural tools measuring state impulsivity might highlight the aspects of state impulsivity vs trait impulsivity. This might help to better refine the influence impulsivity has on the transition from suicide ideation to actions and to the lethality of the attempt.

The emerging field of study of decision-making may shed light on this issue since impulsivity involves a failure in higher-order control, including decision-making.

Decision-Making

Another way to look at impulsivity is as a construct that involves a failure of higher-order control, including decision-making. Decision-making process results in a selection of a course of action among several alternatives. The process produces a choice. The output of the process is an action or a thought of opinion or maybe a recommendation. In our everyday lives, we have a lot of decisions to make, some of them, on a momentary basis, on short-term basis and on long-term basis.

Together, the decisions and their outcomes essentially define our lives. Different components of decision-making in healthy population were described by economists. Over the last fifty decades, the fields of psychiatry and psychology have been influenced by these economic theories. People are constantly exposed to enormous amounts of information. They have to make decisions based on this available information. We are trying to make optimal decisions and thus, our brain screens, gathers and analyzes information before each decision, and attempts to find an optimal solution. Although we are usually not aware of the processes involved, cognitive and affective neural systems have been involved and recognized in this process (Rilling & Sanfey, 2011). The best way to make decisions is the rational mode. We act to make optimal or alternatively rational decisions. Theories and models coming from this point of view generally assume an ideal decision maker that seeks to make the best decision by becoming fully informed and able to compute with perfect accuracy with full alignment to a defined set of goals. This perspective attempts to move closer to the ideal by building on facts where available, and applying mathematics and computing to help address risk and uncertainty. However, as Kahneman and Taversky (1979) proposed we do not take rational decisions although we think we do. Much of the research done on decision-making explores the question "What do we do?" (instead of "what we should do?") when making choices. According to this model, we are not ideal decision makers as we do not possess complete information before making a choice. There is a number of interesting decision-making behaviours that have been exposed and characterized that are inconsistent with rational decision-making thought processes. Those decision-making patterns help us reduce uncertainty and rely on past experience. The result may be a tendency towards systematic errors that harm the quality of decision. Thus, decision-making covers all decision-related features, including reward learning (Kahneman & Tversky, 1979). Other neural and behavioural components of human and animal decision-making processes that are central to healthy human decision-making are probabilistic cognition (Cosmides & Tooby, 1996; Huettel, Mack, & McCarthy, 2002), causal inference (Körding et al., 2007) and logical reasoning (Stollstorff, Bean, Anderson, Devaney, & Vaidya, 2013). Other decision-making biases include judgmental heuristics. They represent rules of thumb or shortcuts that people use to reduce information-processing demands. Among them are also loss aversion and risk aversion (Kahneman & Tversky, 1979; Tom, Fox, Trepel, & Poldrack, 2007), the availability bias, the gambler's fallacy, the conjunction fallacy (Tversky & Kahneman, 1974).

Suicidal Behaviour and Decision-Making

The research on the association between suicidal behaviour and decision-making is quite new yet promising. Impaired ability to respond adequately to stress and disadvantageous patterns of decision-making (Courtet, Gottesman, Jollant, & Gould, 2011; Courtet, Wyart, Jaussent, Ritchie, & Jollant, 2011) and/or reduced cognitive

inhibition (Richard-Devantory, Olie, Guillaume, & Courtet, 2016) among suicide attempters was studied and highlighted by various studies. For instance, impaired decision-making was found in past history of suicidal act done mainly with violent means in comparison to normal controls and to patients suffering from mood disorder. Dombrovski, Szanto, Clark, Reynolds, and Siegle (2013) argue that suicide attempts are the result of a "suboptimal" decision. They claim that the tendency to make bad decisions might be one of the pathways to suicidal behaviour (Dombrovski et al., 2013). Suicide attempters favour choosing options where there is more immediate reward but long-term loss over options with lower immediate reward but long-term gain. This was found among adolescent attempters (Dougherty, Marsh, & Mathias, 2002; Dougherty et al., 2004) as well as elderly ones (Dombrovski et al., 2010). Thus, several studies support previous findings in pointing to the importance of coping and problem solving in adolescent suicidal behaviour (Speckens & Hawton, 2005). An interesting and relevant study for prevention found that poor decision-making is present in adolescents who currently self-harm but not in those with a previous history of self-harm. Improvement in decision-making skills may, therefore, be linked to cessation of self-harm (Oldershaw et al., 2009).

Neurological studies have also found associations between suicidal behaviour and inadequate decision-making patterns. For example, in a cohort of 53 participants it was found that impulsivity and a history of suicide attempts (particularly poorly planned ones) were associated with a weakened expected reward signal in the paralimbic cortex (Dombrovski et al., 2013). Post-mortem studies have also associated decreased grey matter volume in the orbito frontal cortex (OFC) in individuals with a history of suicide attempts as compared to non-suicidal patients (Aguilar et al., 2008) and healthy people (Monkul et al., 2007). Behavioural studies have also found correlations between suicide behaviour and behaviours defined as disadvantageous (such as drug addiction and gambling) (Vijayakumar, Kumar, & Vijayakumar, 2011; Wong, Cheung, Conner, Conwell, & Yip, 2010). These neurophysiological similarities and behavioural studies further suggest that decision-making and impulsivity may play an important role in suicidal behaviour.

Contemporary studies make use of decision-making tasks in order to learn more about the relationship between different behavioural patterns and impulsivity. Such tasks involve the Iowa Gambling Task (IGT, Bechara, Damasio, Damasio, & Anderson, 1994), the Balloon Analogue Risk Task (BART, Lejuez et al., 2002) measuring of risk aversion and the Stop Signal (Logan, Schachar, & Tannock, 1997) assessing impulsive disinhibition. One recent study by Richard-Devantory et al. (2016) compared IGT performance between unipolar and bipolar suicide attempters on IGT performance. In the same study, they conducted a review and meta-analysis of studies comparing IGT performance in patients with and without a history of attempted suicide in unipolar and bipolar disorders. The study raised some interesting results. Firstly, unipolar attempters performed as well as did bipolar suicide attempters, but worse than unipolar non-attempters. Secondly, decision-making deficits were found among middle age, adolescent and elderly depressive suicide attempters. Thirdly, compared to non-attempters patients' controls, there appeared deficient decision-making unipolar and bipolar suicide attempters.

Nevertheless, it remains unclear how studies involving decision-making tasks contribute to a better understanding of the behavioural mechanisms behind suicide attempts and in particular specific personality dimensions including impulsivity. Espinosa et al. (2010), for example, showed that patients with temporal lobe epilepsy who exhibit executive dysfunction on behavioural tasks are at an elevated risk of attempting suicide, unlike self-reported impulsivity. Jollant et al. (2005) reported a difference in performance on the Iowa Gambling Task (IGT) between violent and non-violent types of suicide attempters compared to control groups of healthy subjects and patients suffering from affective disorders. The Iowa Gambling Task scores in this study were not correlated with impulsivity. Bridge et al. (2012) studied adolescent suicidal attempters and non-attempters and found that performance on the IGT was significantly worse for suicide attempters compared to non-attempters, although in the attempters group overall task performance did not correlate with different personality dimensions including impulsivity.

In a recent editorial published (Gvion, Levi-Belz, Hadlaczky, & Apter, 2015), we offered a theoretical model to explain the association between suicidal behaviour and inadequate decision-making patterns. The model suggests that people who are in anguish and distress may see life as an unceasing pain and suicide as an escape from unbearable punishment compared to any future rewards (Dombrovski et al., 2013). This way of thinking is not new and is analogous to Baumeister's theory that views suicide as an escape from an aversive situation and an unbearable state of mind (Baumeister, 1990). Shneidman's concept of unbearable mental pain (Schneidman, 1993) is somewhat similar. Along the same lines, Williams' et al. (2005) entrapment theory views suicidal behaviour as the instrumental result of a decision-concerning two competing outcomes: a state of no suffering (through death), versus the state of an indefinite period of suffering (staying alive). Thus, decision-making may be particularly related to suicidal behaviour. Deficits in decision-making may impair people's ability to resolve problems and dilemmas and thus create an accumulation of stressors leading to further pain. These may give rise to risky choices such as self-harm or suicide behaviours.

Conclusion

Suicidal behaviour is a complex behaviour that is the end result of many interacting factors. Despite increased prevention efforts, and growing body of research on suicidal behaviour, rates of suicide worldwide remain constant. Both research and clinical literature have already identified multiple risk factors for suicide attempts and death from suicide. Among them are previous suicide attempts, psychopathology, different environmental variables, genetics and personality traits. Impulsivity and impaired decision-making patterns appear to be factors interacting with other risk factors to enhance the risk for suicide attempts. Studies done so far suggest that a better understanding of the principles of decision-making can contribute to a firmer grasp of the behavioural mechanisms behind suicide attempts,

though the relationship to impulsivity remains unclear. There is a need for standardized operational definitions that take the key features of impulsivity including state and trait components into account. In addition, there is a need for a clearer understanding of the process of decision-making in the suicidal mind in order to bring the field of psychiatry and psychology a step closer to understanding suicidality and winning the battle against this form of human suffering.

References

Aguilar, E. J., García-Martí, G., Martí-Bonmatí, L., Lull, J. J., Moratal, D., Escartí, M. J., … Sanjuán, J. (2008). Left orbitofrontal and superior temporal gyrus structural changes associated to suicidal behaviour in patients with schizophrenia. *Progress in Neuro-Psychopharmacology & Biological Psychiatry, 32*(7), 1673–1676.

Anestis, M. D., Selby, E. A., & Joiner, T. E. (2007). The role of urgency in maladaptive. *European Archives of Psychiatry and Clinical Neuroscience, 255*(2), 152–156.

Apter, A., & Wasserman, D. (2003). Adolescent attempted suicide. In R. A. King & A. A. Apter (Eds.), *Suicide in children and adolescents* (pp. 63–86). Cambridge, UK: Cambridge University Press.

Baca-Garcia, E., Diaz-Sastre, C., Garcia-Resa, E., Biasco, D., Braquehals Conesa, D., Oquenda, M. A., … de Leon, J. (2005). Suicide attempts and impulsivity. *European Archives of Psychiatry and Clinical Neuroscience*, *255*(2), 152–156.

Barraclough, B. M., & Pallis, D. J. (1975). Depression followed by suicide: A comparison of depressed suicides with living depressives. *Psychological Medicine, 5*(1), 55–61.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review, 97*(1), 90–113.

Bechara, A., Damasio, A. R., Damasio, H., & Anderson, S. W. (1994). Insensitivity to future consequences following damage to human prefrontal cortex. *Cognition, 50*(1–3), 7–15.

Beck, A. T., Schuyler, D., & Herman, I. (1974). Development of suicidal intent scales. In A. T. Beck, H. L. P. Resnik, & D. J. Lettieri (Eds.), *The prediction of suicide* (pp. 45–56). Bowie, MD: Charles Press.

Beck, A. T., Steer, R. A., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: A 10 year prospective study of patients hospitalized with suicidal ideation. *American Journal of Psychiatry, 142*(5), 559–563.

Brent, D. A., & Melhem, N. (2008). Familial transmission of suicidal behaviour. *Psychiatric Clinics of North America, 31*(2), 157–177.

Bridge, J. A., McBee-Strayer, S. M., Cannon, E. A., Sheftall, A. H., Reynolds, B., Campo, J. V., … Brent, D. A. (2012). Impaired decision-making in adolescent suicide attempters. *Journal of the American Academy of Child & Adolescent Psychiatry*, *51*(4), 394–403.

Byran, C. J., & Rudd, M. D. (2006). Advances in the assessment of suicide risk. *Journal of Clinical Psychology, 62*(2), 185–200.

Cadoret, R. J., Yates, W. R., Troughton, E., Woodworth, G., & Stewart, M. A. (1995). Genetic environmental interaction in the genesis of aggressivity and conduct disorders. *Archives of General Psychiatry, 52*(11), 916–924.

Conner, K. R. (2004). A call for research on planned vs. unplanned suicidal behaviour. *Suicide and Life-Threatening Behaviour, 34*(2), 89–98.

Cosmides, L., & Tooby, J. (1996). Are humans good intuitive satisfactions after all? Rethinking some conclusions from literature on judgment under uncertainty. *Cognition, 58*(1), 1–73.

Côté, S., Tremblay, R. E., Nagin, D., Zoccolillo, M., & Vitaro, F. (2002). The development of impulsivity, fearfulness, and helpfulness during childhood: Patterns of consistency and change in the trajectories of boys and girls. *Journal of Child Psychology and Psychiatry, 43*(5), 609–618.

Courtet, P., Gottesman, I. I., Jollant, F., & Gould, T. D. (2011a). The neuroscience of suicidal behaviours: What can we expect from endophenotype strategies & quest. *Translational Psychiatry, 1*(5), e7.

Courtet, P., Wyart, M., Jaussent, I., Ritchie, K., & Jollant, F. (2011b). Decision-making and vulnerability to suicidal behaviour in elderly. *European Psychiatry, 26,* 21–64.

Cyders, M. A., & Coskunpinar, A. (2011). Measurement of constructs using self-report and behavioural lab tasks: Is there overlap in nomothetic span and construct representation for impulsivity? *Clinical Psychology Review, 31*(6), 965–982.

Cyders, M. A., Smith, G. T., Spillane, N. S., Fischer, S., Annus, A. M., & Peterson, C. (2007). Integration of impulsivity and positive mood to predict risky behaviour: Development and validation of a measure of positive urgency. *Psychological Assessment, 19*(1), 107–118.

Derryberry, D., & Rothbart, M. K. (1997). Reactive and effortful processes in the organization of temperament. *Development and Psychopathology, 9*(4), 633–652.

Dickman, S. J. (1990). Functional and dysfunctional impulsivity: Personality and cognitive correlates. *Journal of Personality and Social Psychology, 58*(1), 95–102.

Dombrovski, A. Y., Clark, L., Siegle, G. J., Butters, M. A., Ichikawa, N., Sahakian, B. J., & Szanto, K. (2010). Reward/punishment reversal learning in older suicide attempters. *American Journal of Psychiatry, 167*(6), 699–707.

Dombrovski, A. Y., Szanto, K., Clark, L., Reynolds, C. F., & Siegle, G. J. (2013). Reward signals, attempted suicide, and impulsivity in late-life depression. *JAMA Psychiatry, 70*(10), 1020–1030.

Dougherty, D. M., Marsh, D. M., & Mathias, C. W. (2002). Immediate and delayed memory tasks: A computerized behavioural measure of memory, attention, and impulsivity. *Behaviour Research Methods, Instruments, and Computers, 34*(3), 391–398.

Dougherty, D. M., Mathias, C. W., Marsh, D. M., Papageorgiou, B. A., Swann, A. C., & Moeller, F. G. (2004). Laboratory-measured behavioural impulsivity relates to suicide. *Suicide and Life-Threatening Behaviour, 34*(4), 374–385.

Dougherty, D. M., Mathias, C.W., Marsh-Richard, D. M., Prevette, K. N., Dawes, M. A., Hatzis, E. S., … Nouvion, S. O. (2009). Impulsivity and clinical symptoms among adolescents with nom-suicidal self-injury or without attempted suicide. *Psychiatry Research, 169*(1), 22–27.

Espinosa, A. G., Machado, R. A., González, S. B., González, M. E. G., Montoto, A. P., & Sotomayor, G. T. (2010). Wisconsin card sorting test performance and impulsivity in patients with temporal lobe epilepsy: Suicidal risk and suicide attempts. *Epilepsy & Behaviour, 17*(1), 39–45.

Evenden, J. (1999). Impulsivity: A discussion of clinical and experimental findings. *Journal of Psychopharmacology, 13*(2), 180–192.

Fawcett, J., Scheftner, W., Clark, D., Hedeker, D., Gibbons, R., & Coryell, W. (1987). Clinical predictors of suicide in patients with major affective disorders: A controlled prospective study. *American Journal of Psychiatry, 144*(1), 35–40.

Gvion, Y., & Apter, A. (2011). Aggression, Impulsivity and suicidal behaviour: A review of the literature*, Archives of Suicide Research, 15*(2), 93–112.

Gvion, Y., & Apter, A. (2012). Suicide and suicidal behaviour. *Public Health Reviews, 34*(2), 1–20.

Gvion, Y., Levi-Belz, Y., Hadlaczky, G., & Apter, A. (2015). On the role of impulsivity and decision-making in suicidal behaviour. *World Journal of Psychiatry, 5*(3), 255–259.

Hawton, K., & van Heeringen, K. (2009). Suicide. *The Lancet, 373*(9672), 1372–1381.

Hinshaw, S. P. (2003). Impulsivity, emotion regulation, and developmental psychopathology: Specificity versus generality of linkages. *Annals of the New York Academy of Sciences, 1008* (1), 149–159.

Huettel, S. A., Mack, P. B., & McCarthy, G. (2002). Perceiving patterns in random series: Dynamic processing of sequence in prefrontal cortex. *Nature Neuroscience, 5*(5), 485–490.

Jollant, F., Bellivier, F., Leboyer, M., Astruc, B., Torres, S., Verdier, R., … Courtet, P. (2005). Impaired decision-making in suicide attempters. *American Journal of Psychiatry*, *162*(2), 304–310.

Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica: Journal of Econometric Society, 47*(2), 263–291.

Kelip, J. G., Gorlyn, M., Oquendo, M. A., Brodsky, B., Ellis, S. P., & Mann, J. J. (2006). Aggressiveness, not impulsiveness or hostility, distinguishes suicide attempters with major depression. *Psychological Medicine, 36*(12), 1779–1788.

Klonsky, E. D., & May, A. M. (2010). Rethinking impulsivity in suicide. *Suicide and Life-Threatening Behaviour, 40*(6), 612–619.

Klonsky, E. D., & May, A. M. (2014). Differentiating suicide attempters from suicide ideators: A critical frontier for suicidology research. *Suicide and Life- Threatening Behaviour, 44*(1), 1–5.

Körding, K. P., Beierholm, U., Ma, W. J., Quartz, S., Tenenbaum, J. B., & Shams, L. (2007). Causal inference in multisensory perception. *PLoS ONE, 2*(9), e943.

Lejuez, C. W., Read, J. P., Kahler, C. W., Richards, J. B., Ramsey, S. E., Stuart, G. L., … Brown, R. A. (2002). Evaluation of a behavioural measure of risk taking the Balloon Analogue Risk Task (BART). *Journal of Experimental Psychology: Applied, 8*(2), 75–84.

Livesley, W. J., Jang, K. L., & Vernon, P. A. (1998). Phenotypic and genetic structure of traits delineating personality disorder. *Archives of General Psychiatry, 55*(10), 941–948.

Logan, G. D., Schachar, R. J., & Tannock, R. (1997). Impulsivity and inhibitory control. *Psychological Science, 8*(1), 60–64.

Moeller, F. G., Barratt, E. S., Dougherty, D. M., Schmitz, J. M., & Swann, A. C. (2001). Psychiatric aspects of impulsivity. *American Journal of Psychiatry, 158*(11), 1783–1793.

Mann, J. J., & Currier, D. (2009). Biological predictors of suicidal behaviour in mood disorders. In D. Wasserman & C. Wasserman (Eds.), *Oxford textbook of suicide prevention. A global perspective* (pp. 335–341). Oxford: Oxford University Press.

Mann, J. J., Waternaux, C., Haas, G. L., & Malone, K. M. (1999). Toward a clinical model of suicidal behaviour in psychiatric patients. *The American Journal of Psychiatry, 156*(2), 181–189.

Monkul, E. S., Hatch, J. P., Nicoletti, M. A., Spence, S., Brambilla, P., Lacerda, L. T., … Soares, J. C. (2007). Fronto-limbic brain structures in suicidal and non-suicidal female patients with major depressive disorder. *Molecular Psychiatry, 12*(4), 360–366.

National Survey on Drug Use and Health: National Findings. (2008). Retrieved from http://www.dpft.org/resources/NSDUHresults2008.pdf.

Oldershaw, A., Grima, E., Jollant, F., Richards, C., Simic, M., Taylor, L., & Schmidt, U. (2009). Decision making and problem solving in adolescents who deliberately self-harm. *Psychological Medicine, 39*(1), 95–104.

Paris, J. (2005). The development of impulsivity and suicidality in borderline personality disorder. *Development and Psychopathology, 17*(4), 1091–1215.

Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt impulsiveness scale. *Journal of Clinical Psychology, 51*(6), 768–774.

Plomin, R., DeFries, J. C., & McClearn, G. E. (2000). *Behavioural genetics: A primer* (3rd ed.). New York, NY: W. H. Freeman.

Richard-Devantoy, S., Olie, E., Guillaume, S., & Courtet, P. (2016). Decision-making in unipolar or bipolar suicide attempters. *Journal of Affective Disorders, 190,* 128–136.

Rilling, J. K., & Sanfey, A. G. (2011). The neuroscience of social decision-making. *Annual Review of Psychology, 62,* 23–48.

Roggenbach, J., Muller-Oerlinghausen, B., & Franke, L. (2002). Suicidality, impulsivity, and aggression—Is there a link to 5HIAA concentration in the cerebrospinal fluid? *Psychiatry Research, 113*(1–2), 193–206.

Shneidman, E. S. (1993). *Suicide as psychache: A clinical approach to self-destructive behaviour*. Northvale, NJ: Jason Aronson.

Speckens, A. E., & Hawton, K. (2005). Social problem solving in adolescents with suicidal behaviour: A systematic review. *Suicide and Life-Threatening Behaviour, 35*(4), 365–387.

Stollstorff, M., Bean, S. E., Anderson, L. M., Devaney, J. M., & Vaidya, C. J. (2013). Rationality and emotionality: Serotonin transporter genotype influences reasoning bias. *Social Cognitive and Affective Neuroscience, 8*(4), 404–409.

Tom, S. M., Fox, C. R., Trepel, C., & Poldrack, R. A. (2007). The neural basis of loss aversion in decision-making under risk. *Science, 315*(5811), 515–518.

Tversky, A., & Kahneman, D. (1974). Judgment under uncertainty: Heuristics and biases. *Science*, *185*(4157), 1124–1131.

Vijayakumar, L., Kumar, M. S., & Vijayakumar, V. (2011). Substance use and suicide. *Current Opinion in Psychiatry, 24*(3), 197–202.

Whiteside, S. P., & Lynam, D. R. (2001). The five factor model and impulsivity: Using a structural model of personality to understand impulsivity. *Personality and Individual Differences, 30*(4), 669–689.

Williams, J. M. G., Crane, C., Barnhofer, T., & Duggan, D. (2005). Psychology and suicidal behaviour: Elaborating the entrapment model. In K. Hawton (Ed.), *Prevention and treatment of suicidal behaviour: From science to practice* (pp. 71–89). New York, NY: Oxford University Press.

Wong, P. W., Cheung, D. Y, Conner, K. R., Conwell, Y., & Yip, P. S. (2010). Gambling and completed suicide in Hong Kong: A review of coroner court files. *Primary Care Companion to the Journal of Clinical Psychiatry, 12*(6).

Chapter 6
Gender Disparities, Mental Health Complexities and Social Connectedness: Exploring an Integrative Approach Towards Suicidal Behaviour

Archana and Updesh Kumar

Suicide is very complex and multi-faceted phenomena that occur across the world, irrespective of culture, race and religion. Suicidal acts are often followed by stressful life events that may be either acute or chronic in nature. With the increasing complexities in our life style, the level of stress has been rising at a phenomenal rate. Although everyone experiences stress due to adverse life events, but the intensity of it varies depending upon the context and the capability of the person to cope with it. Most people are able to handle these tough times and make best out of it. But at times, the inability to deal with such challenges may force an individual to take their own lives. The presence of some of the risk factors that serves as a threat to one's well-being includes psychiatric illnesses, perceived failures, depression, hopelessness, impulsivity, deficits in interpersonal relations and lack of availability of social support systems. The failure to cope with these risk factors often predisposes an individual to respond in a negative way to adverse and traumatic conditions.

It is extremely difficult to determine the instant and enduring factors that are responsible for being suicidal. The instant factors are the ones that often act as precipitants to suicide, such as severe depression, loss of a job or a loved one and drug or alcohol intoxication. The enduring factors have a cumulative effect and often stem from childhood neglect and trauma, disturbed home environment, family history of suicide, impulsivity and a lack of interpersonal support system. Since

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suicide is an impulsive act, therefore people vary in their expressions regarding the degree of indication for such behaviour. Some people give prior warning before taking their own lives and some end their life without giving any warning. Suicidal behaviour can take multiple forms, like suicide attempts that relate to performing non-fatal, self-injurious act with the intention to end one's life, suicide planning that focuses on the action part in preparing for suicide and suicide ideation that signifies the thought processes involved in taking one's life. Both suicide planning and ideation enhance the risk of suicide attempts. Repeated suicide attempts are further likely to increase the risk of death leading to completed suicide. The intensity of suicide risk increases when an individual has developed the thought of committing suicide, made plans for performing such a life-threatening act and intends to act on those plans.

The suicidal risk factors involve a complex interplay of psychological, environmental, social, genetic and neurobiological factors that tend to vary from situation to situation. Some of the factors found responsible for increasing the likelihood of suicide includes aggressiveness (Conner, Swogger, & Houston, 2009), feeling of hopelessness, depression, difficulty in making decisions, inability in arriving at workable solutions to problems, mental disorder (Kessler, Borges, & Walters, 1999) and substance abuse (Hawton, Houston, Haw, Townsend, & Harriss, 2003). Personality traits like introversion, irritation and neuroticism are also related to high risk for suicide, whereas factors like conscientiousness and extraversion buffers suicide (Brezo, Paris, & Turecki, 2006). The precipitating stressful events play a vital role in triggering suicidal behaviour. The rising rates of mental illness, changing social roles between men and women, easy access to lethal means, increase in divorce rates, weakening of social support networks and psychopathology (Davis, Witte, & Weathers, 2014) are some of the factors that contribute significantly towards the increase in suicidal rates.

According to Joiner (2005), the most significant variables that indicate an individual's risk for committing suicide includes thwarted belongingness, perceived burdensomeness and acquired capability for suicide. Thwarted belongingness refers to the lack of maintaining meaningful relationships with others. Perceived burdensomeness relates to the feeling of considering oneself as a burden on others and at the same time failing in personal efforts towards making a significant contribution in society. Acquired capability for suicide indicates an individual's capability to enact a lethal suicide attempt. Acquired capability takes into account both the reduced fear of death and a high tolerance for physical pain. Rudd, Joiner and Rajab (1995) proposes a clear distinction between suicide ideators, single attempters and multiple attempters. The authors have explained this with the help of a Fluid Vulnerability Theory (FVT). The theory suggests that all individual possess a certain amount of baseline level of risk that tends to vary with respect to certain static factors (like psychiatric illness or family history of mental illness) along with the personality traits of an individual. Multiple attempters are more prone to suicidal risk as they are more likely to experience severe symptoms and compulsive thoughts of killing self. The theory further suggests that suicidal states incorporate both acute as well as chronic risks. Acute risk occurs due to the current changes that

take place in an individual's mental state, whereas chronic risks relate to enduring vulnerabilities that are determined by the diagnosis of prolonged mental illnesses. The probability of suicide increases in those individuals who have attempted suicide in the past and lived.

Integrated Motivational Volitional Model of Suicidal Behaviour

The Integrated Motivational Volitional (IMV) model, as suggested by O'Connor (2011), assimilates the psychological, biological and social factors that play a significant role towards the development of suicidal behaviour. The model explains how suicidal thought varies from person to person before leading to an ultimate act of attempting suicide. The model comprises three phases: Pre-motivational, Motivational and Volitional.

The pre-motivational phase takes into account the biological as well as personality factors that make an individual vulnerable towards the development of suicidality. It includes factors like low socio-economic status, psychiatric disorder, social perfectionism and self-criticism. Platt (2011) defines low socio-economic position of an individual in terms of their unemployment, low source of income, staying in rented accommodation and not having any sort of formal educational qualification. Males belonging to low socio-economic status group depict higher risk of suicidal acts. In a study carried out by Tomlinson (2012), it was observed that males with low socio-economic positions tend to be more vulnerable to suicidal behaviour as compared to those who belong to affluent group. Among men, financial crisis in the form of unemployment can also lead to heightened level of suicide (Gunnell, Platt, & Hawton, 2009). Besides this, the presence of psychiatric disorders enhances the intensity of suicidal behaviour. According to Haw and Hawton (2011), people staying alone and suffering from any kind of psychiatric disorders are more likely to get indulged in self-harm behaviour as compared to those who stay with their family members. Social perfectionism also results in heightened level of suicidal risk (Hunter & O'Connor, 2003; O'Connor, 2007). Social perfectionism is found to be related to depression, anxiety and poor outcome among those individuals who are prone to suicidal acts (Rasmussen, O'Connor, & Brodie, 2008). Males high on social perfectionism show reduced quality of interpersonal relationships and high antagonistic strategies in order to deal with marital problems (Haring, Hewitt, & Flett, 2003). Self-criticism is another variable that tends to be characterized by the traits of negative self-appraisal along with an individual's failure to appreciate one's own successes (Dunkley, Zuroff, & Blankstein, 2006). In a study by Cox and Enns (2004), self-criticism has been found to be positively correlated with suicidal ideation and attempts. While encountering stress, males tend to engage more in risk-prone behaviour and are also likely to make quick decisions as compared to females (Lighthall et al., 2011). Due to an

increase in risk-taking behaviour, males are observed to be more impulsive in their approach, consume alcohol in huge amount, face difficulty in handling interpersonal relation, remain financially worried and are more prone to show an inclination towards engaging in suicidal behaviour. The motivational phase is the second phase of IMV model that involves formation of suicidal ideation and intentions. An individual's failure towards attaining a set goal often results in the feeling of being defeated. Rumination in the form of brooding or passive problem focused thought develops feelings of entrapment leading to suicidal behaviour (Morrison & O'Connor, 2008). Positive future thinking, characterized by low score on social perfectionism, has been considered to be an essential protective factor towards suicidal behaviour (Hunter & O'Connor, 2003). The third phase of IMV model is the volitional phase that focuses on the act of planned behaviour. That is, how the presence of certain factors enhances the likelihood of suicide. For example, a detailed action plan along with the lethality of means used for self-harming behaviour increases the propensity towards suicidal acts.

Gender Disparities and Suicidality

Gender plays a vital role in suicidal behaviour and the gender differences are often observed with respect to suicidal methods, risks involved in acts of self-defeating behaviour and the presence of protective factors. Males are more prone to suicidal behaviour as compared to females, whereas suicidal thoughts are likely to be observed more in females in comparison to males. According to Payne, Swami, and Stanistreet (2008, p. 23) "treat gender as a descriptive, rather than causal, factor in suicidal behaviours". Masculinity and femininity are two broad constructs that deal with the understanding of roles, behaviour, expressions and practices being performed by both males and females. Masculinity is characterized by certain attributes like dominance, power, boldness, aggressiveness, rationality, independency, efficiency, competitiveness, withstanding danger, difficulties and threats (Moller-Leimkuhler, 2003, p. 3). Females on the other hand are more prone to help-seeking behaviour during emotional crisis. A non-fatal suicidal behaviour is found to be related to the aspect of femininity, whereas killing oneself relates to masculinity. Males are more likely to go for lethal means of suicide as compared to females (Canetto, 1997). Due to the norms laid down by our culture, masculine behaviour tends to be mostly lethal, violent and aggressive in nature in comparison to feminine behaviour which is more likely to be dominated by non-lethal and non-violent behaviour (Jaworski, 2003). Males are more likely to take their lives as compared to females, although females rate higher than males in attempting suicide.

Individuals who have attempted suicide in the past are at a higher risk of attempting suicide again (Barber, Marzuk, Leon, & Portera, 1998). The more the prior attempts, more the individual is likely to use lethal methods to suicide. Males are more likely to use lethal means for committing suicide as compared to females who practice more of self-harm behaviour often resulting in failure to end one's life.

The lethal method used in suicide can be either high or low in nature. Suicide by highly lethal methods diminishes the possibility of intervention. On the other hand, lower lethal method provides time for intervention and also broadens help-seeking behaviour. Completed suicide is observed more in males than females due to the differences in methods adopted by both these groups (Hawton, 2000). Since females have less desire to end their lives, therefore, they are more likely to resort to less lethal means. Gender differences observed in the case of suicidal methods also depend on certain cultural norms that tend to be gender specific. According to Canetto (2008), culture provides scripts for that behaviour of genders which are suitable and well accepted by the society. Completed suicide signifies masculinity as compared to attempted suicide. Therefore, males prefer to choose more violent method as it would help them to be successful in their attempt (Canetto & Sakinofsky, 1998), whereas females prefer choosing less violent methods due to the concern for their physical look, as they want to preserve their facial appearance after death (Murphy, 1998). This can be supported by the 'beautiful corpse thesis' as highlighted by Schmeling, Strauch, and Rothschild (2001), which states that when females commit suicide, they focus on lessening the disfigurement of their face and as result adopt lesser lethal methods for committing suicide as compared to males. It has been ingrained in the psyche of the females right from their childhood that physically attractive women are liked more by males as compared to less physically attractive women (Buss, 1989). This notion holds true across the culture (Gottschall, 2008). Women use those means that does not disfigure their facial appearance and that is a reason why during firearm suicides, women avoid to shoot themselves on face/head in comparison to males. However, males tend to be more impulsive in their approach and are less concerned about their bodily disfigurement.

An interpersonal model of suicide as proposed by Joiner (2011) states that gender differences in suicide depend upon the acquired capability of an individual. Men score high on acquired capability for suicide due to their fearlessness attitude about death, insensitivity towards pain, thwarted belongingness and perceived burdensomeness. In the present-day scenario, suicide rates have increased in males who are young in age (Cantor & Neulinger, 2000). As compared to older people, younger individuals are more likely to hang themselves since they show more physical effort required to kill oneself (Kposowa & McElvain, 2006). In males, the intensity of firearm suicide increases with age (Tewksbury, Suresh, & Holmes 2010). According to Wyder, Ward, and De Leo (2009), suicide risk is higher in younger males with the age range of 15–24 years. Males commit suicide with death-oriented intention as they are more prone to risk-taking behaviour. Women use less lethal methods for suicide in order to capture attention of others but not with the real intention to die. Males who experience relationship breakdown in their lives also reflect higher levels of suicidal behaviour as compared to females going through the same phase.

There is often a gender paradox in case of suicidal behaviour, as women are more likely to make suicidal attempts but successful completion is observed more in males as compared to females (Beautrais, 2002). Firearms, drowning and hanging are considered to be the most lethal methods used for suicide, whereas

methods like consuming poison, drug overdose and cutting wrist are rated as the least lethal methods adopted for committing suicide (Spicer & Miller, 2000). When both the genders are compared, it is found that males are more likely to use firearms and hanging in order to end their lives; whereas females use poisoning by drugs and jumping for taking their lives. In Indian culture, the most prominent methods used by males vary from hanging to poisoning and females resort to drowning and self-immolation as a means of ending their lives (Kanchan, Menon, & Menezes, 2009). Since women are not really motivated to die, therefore, they generally take pills or consume other toxic substance that reduces the intensity of dying by suicide. Males show more interest in weapons and those activities which are risky in nature. As a result, their chance of committing suicide further increases.

Research findings by Payne, Swami, and Stanistreet (2008) indicate that women score high on sociability as they are much more open in expressing their emotions compared to men who learn to mask their problems. The findings by Murphy (1998) suggest that males are more independent as compared to females and due to this they are often reluctant in seeking help from others. This reluctance in help-seeking behaviour becomes a contributing factor towards suicide. Due to the inability to communicate feelings, males reflect few social networks. The feeling of being a burden on others diminishes problem-solving ability in men. Further adding to this is a frequent lack of awareness among men regarding the availability of support system and a strong feeling that their needs cannot be catered by anyone in their surroundings. Since males fail in their attempt to recognize their own negative emotions, therefore, they express an unhealthy emotional reaction to adverse life events (Goldney, Fisher, Wilson, & Cheok, 2002). Numerous researchers propose that the presence of psychiatric illness increases the likelihood of killing oneself. Researchers like Conwell and Brent (1995) assert that depressive episodes and mood disorders are found to be associated with suicidal behaviour. Most of the individuals who die by suicide experience either a depressive or mixed episode of illness (Tondo et al., 1998). As the severity of illness increases, the suicide risk also increases. In terms of gender though women are more likely to encounter depressive episodes, however, they are one-fourth as likely as males to take their own lives. Schizophrenia, a mental disorder, is found to be associated with increased risk of suicide. Males suffering from schizophrenia are found to be at the higher risk of suicide (Westermeyer, Harrow, & Marengo, 1991).

Mental Health Complexities and Suicidality

Suicide cannot be predicted by a single factor. Rather it is a complex phenomenon determined by the presence of multiple vulnerable factors. These factors predispose an individual to higher risk of suicide. For instance, not all individuals who are unemployed are at the risk of suicide. Unemployment coupled with the feelings of hopelessness, inability to take care of the needs of family and a thought that others would be happy in their absence heightens the level of suicide risk. Some of the

factors that increase the suicidal risk include feelings of hopelessness, impulsivity, alcohol/drug abuse, cognitive rigidity, depressed mood, thwarted belongingness, perceived burdensomeness, lack of problem-solving ability, deficits in social connection, pessimistic approach towards life and mental illness.

Hopelessness is one of the most significant factors contributing towards suicide. It is a state where an individual remains pessimistic for the future life. The feeling of hopelessness varies over time. Varied researches report a strong relationship between hopelessness and suicidal behaviour (Brezo et al., 2006). Hopelessness creates more risk for multiple suicide attempters than for single attempters (Eposito, Spirito, Boergers, & Donaldson, 2003). It turns out to be more risky in situations where an individual internalizes anger rather than externalizing it. Among suicide survivors of sexual abuse, feeling of hopelessness leads to suicidal behaviour in male survivors and for female survivors the occurrence of depressive thoughts results in suicidal act (Bergan, Martin, Richardson, Allison, & Roeger, 2003). Sexually and physically abused males reflect higher risk of suicidal tendencies than females (Johnson, Cohen, Kasen, Smailes, & Brook, 2001; Martin, Bergen, Richardson, Roeger, & Allison, 2004). Stress-diathesis-hopelessness hypothesis (SDH) proposed by Schotte and Clum (1987) reflects a direct association between problem-solving deficits and suicidal behaviour. The authors suggest that during stress individuals fail in their ability to arrive at workable solutions to the problems. This inability results in the feelings of hopelessness often leading to suicidal thoughts. The existing literature reflects suicide as an impulsive act. Individuals who commit suicide are likely to be more impulsive as compared to others who do not. According to Gvion and Apter (2011), impulsivity is found to be related to suicide attempts and deaths. It is often characterized by risk-taking behaviour, poor planning, coordination, sensation seeking, impaired self-regulation and immediate reward-seeking behaviour (Whiteside & Lynam, 2003). Research findings suggest that reactive aggression (characterized by the traits of anger and impulsive responses towards stressful situations) in young people results in suicide (McGirr et al., 2009). The impulsive and aggressive behaviours are both linked to the violent methods of attempting suicide which is often used more by males as compared to females (Dumais et al., 2005). Impulsivity leads to maladaptive behaviour that often results in self-injury (Anestic, Selby, & Joiner, 2007). Although impulsivity is a significant risk factor for suicide, however, at times it becomes difficult to understand whether people act impulsively or they try to attempt suicide without giving any warning signs to others. Impulsive behaviour also gets provoked by the use of substance abuse. Impulsive acts associated with the feelings of hopelessness, anger, depression and rigidity are found to be related to suicidal tendencies.

Perfectionism is another significant factor associated with suicidal thoughts. Socially determined perfectionism observed in the form of an unrealistic high expectation from others lead to suicidal behaviour. The feeling of perfectionism along with the adversities of life increases the probability of suicidal ideation and self-harm behaviour (O'Connor, 2007). Perfectionism, a strong predictor of suicidal behaviour, takes into account two aspects: self-oriented perfectionism and socially prescribed perfectionism (Hewitt & Flett, 1991). In case of self-oriented

perfectionism, an individual holds an unrealistic motivation to be perfect and emphasizes on one's own weaknesses. It is found to have a direct association with suicide as these people are more prone to experience stress by keeping stringent criteria for success. Socially prescribed perfectionism refers to an individual's inability to fulfil the expectations of others. This aspect is also related to suicide since it leads to stress and a helplessness attitude to control expectations of others for self. Both these aspects of perfectionism are related to unipolar depression among adolescents (Flett, Hewitt, Blankstein, & O'Brien, 1991). High levels of neuroticism observed in terms of high sensitivity to distress and low levels of extroversion in the form of social disconnectedness increase the risk of suicide (Lester, 2010). The presence of other factors like borderline personality reduced self-esteem, negative self-appraisal, aggression and pessimistic attitude manifests emotional instability, anger, and frustration in adolescents.

Among youngsters, depressed mood, anxiety, hostility, irritability and loneliness are some of the factors that heighten suicide risks. Failure to control events in one's life leads to depression and this feeling induces intense psychological pain, poor self-worth, thought of dying and feeling of helplessness. Blatt (1995) highlighted two dimensions of depression: Self-critical depression and dependent depression. Self-critical depression occurs in those youngsters who engage in constant and harsh self-scrutiny. These individuals show feelings of inferiority, sense of unworthiness and a strong need for achievement. Dependent depression is seen in those people who display fear of being deserted and wish to be loved by others. Although both these dimensions of depression result in suicidal behaviour, but people with dependent depression are likely to resort to low lethality suicidal gestures as compared to those with self-critical depression who are rated high on lethal suicide attempts (Blatt, Quintan, Chevron, MacDonald, & Zauroff, 1982). There is a vast literature depicting the association between loneliness and suicide (Maris, 1992). Loneliness, an innate subjective experience of social disconnectedness, is found to elevate the risk for suicidal tendencies (Wiktorsson, Runeson, Skoog, Ostling, & Waern, 2010). It occurs due to an individual's lack of ability to share feelings with others. Having an intimacy even with one person can help in overcoming the feelings of loneliness.

The presence of genetic and familial factors like strained family relationship, family history of suicidal behaviour, mental illness in family and disorders like schizophrenia and alcoholism increases the likelihood of suicidal behaviour (Gould, Fisher, Parides, Flory, & Shaffer, 1996). Mental illnesses are characterized by irrational behaviour, mood swings, impaired judgment, distorted perceptions, troubled/disturbed emotions and inability to deal with the challenges of life. These illnesses may range in severity from being short in duration to being persistent and prolonged in nature. Illnesses related to heart, physical disability and respiratory problems also result in suicide attempt. In high-income countries, majority of the suicidal cases are observed among people who are suffering from mental disorders (Cavanagh, Carson, Sharpe, & Lawrie, 2003). However, this trend seems to be less prevalent in few Asian countries like India and China (Radhakrishnan & Andrade, 2012; Phillips et al., 2002).

Breakdown in communication network in the form of social isolation, withdrawal, weaker support system and lack of open communication by not disclosing self to others are some of the factors that enhance the likelihood of suicide ideation and attempts. An individual's social network gets affected by the way of communicating distress. This is called a disclosure process where a person's verbal and non-verbal communication varies from being personal to superficial. According to Jourard and Lasakow (1958) 'self-disclosure' relates to an individual's capability to share their intimate feelings with others. Impaired ability of self-disclosure has been found to be associated with mental illness, loneliness, anger and isolation. Limited self-disclosure affects suicidal thoughts. There are several cognitive factors that are likely to increase the risk of suicidal act. Individuals showing cognitive rigidity are more prone to suicidal behaviour. According to Miranda, Gallagher, Bauchner, Vaysman, and Marroquin (2012), suicidal thinking is predicted by an individual's cognitive inflexibility. Cognitive deficits in the form of failure in problem-solving ability, pessimistic approach towards life and resorting to wishful thinking strategies while encountering a problem results in suicidal acts (Goldston et al., 2001). Individuals showing deficits in problem-solving skills look for solutions to their problems and often tend to be dependent on others. Repetitive failure due to inability to handle various problems increases suicidal attempts. As observed by Mizrachi, Underwood, Mann, and Arango (2009), the neuropsychological changes play a significant role in the emergence of suicide. These changes include impairments in memory, perception, attention, interpersonal conflict, cognitive rigidity, deficits in decision-making ability, diminished motor activity and reduced ability to remain happy and seek pleasure.

Numerous studies have found a strong association between brooding rumination and suicidal thoughts (Morrison & O'Connor, 2008). Brooding rumination is a repetitive thought process where in an individual contemplates the reasons for the emergence of their symptoms along with looking for a probable solution to those symptoms. These thoughts of rumination are observed to be related to elevated symptoms of depression, feelings of hopelessness and difficulty in problem-solving ability. Suppressing unwanted thoughts are also found to be responsible towards suicidal attempts (Najmi, Wegner, & Nock, 2007). People prone to suicidal tendencies report high pain tolerance and fearlessness regarding death in comparison to non-suicidal controls (Orbach, Mikulincer, King, Cohen, & Stein, 1997). The self-infliction behaviour resulting in suicide is likely to be observed more in males as compared to females (Witte, Gordon, Smith, & Van Orden, 2012). An unbearable mental pain, referred as 'psychache' by Shneidman (1993), results from the frustrated feelings of being loved and having a sense of self-control and security. Such feelings lead to unbearable mental pain which is subjective in nature and depends upon an individual's negative perception towards self (Orbach, Mikulincer, Sirota, & Gilboa-Schechtman, 2003). Both mental pain and communication failure instigate an individual towards suicidal act. Mental pain is associated with the etiology of suicide as it gives rise to the feelings of thwarted belongingness and perceived burdensomeness on others.

Suicidal individuals fail in their ability to regulate emotions. Self-regulation is characterized by the capability of an individual to keep a check on their anger and repetitive thoughts of self-destructive behaviour and minimization of negative rumination. Deficits in self-regulation lead to impulsivity, negative self-appraisal and negative attributional style (Schwartz, Kaslow, Seely, & Lewinsohn, 2000). Pessimistic approach towards life is often related to suicidal behaviour (MacLeod, Pankhania, Lee, & Mitchell, 1997). Inability to attain a set goal affects one's well-being. Research suggests that people who are unable to attain goals are at increased risk to die by suicide (O'Connor, O'Carroll, Ryan, & Smyth, 2012). Drugs and alcohol abuse are likely to induce mood swings and make an individual more emotional and sensitive towards breakdown in interpersonal relationship and further diminishes their ability to deal with the adversities of life. Substance abuse is considered to be a masculine way of dealing with emotional setbacks. The excessive intake of alcohol/drugs leads to impulsivity which enhances the likelihood of suicidal behaviour. An intake of alcohol triggers impulsive behaviour and increases the feelings of hopelessness and helplessness. This impairs an individual's problem-solving skills leading to depression which is a warning sign of suicide in men. Suicide rate also varies with marital status. Married individuals have significantly lower rate of suicide as compared to unmarried individuals. Divorced, separated and widowed individuals have rated four to five times higher than married individuals (Luoma & Pearson, 2002). The presence of children at home serves as a significant protective factor as it tends to decrease isolation and provides a strong sense of support to parents.

Social Connectedness and Suicidality

Connectedness has emerged as a useful construct in preventing suicide. Connectedness refers to "an enduring and ubiquitous sense of interpersonal closeness with the social world" (Lee & Robbins, 1995, p. 232). It relates to the mental state of belongingness where an individual gets a feeling of being valued, loved and respected by those who form the social network of that person, including family members, friends, relatives and colleagues. Connectedness is subjective in nature involving perceived warmth, love, social support and is best reflected through the quality of relationship being shared with others. Social connectedness may be either actual in nature or may take a form of perceived state that is not observable but tends to provide a great strategy against any kind of mental disturbance. According to Lee, Draper, and Lee (2001), social connectedness takes into account two important factors: an individual's subjective perception of others and the intensity of interpersonal relationship being perceived without the presence of anyone else. The more the relationship is mutual in terms of sharing and remaining open to ideas, greater will be the bond of connectedness. Connectedness is dynamic in nature and can take a form of both perceived state as well as an active relational exchange between individuals and groups (Barber & Schluterman, 2008).

It is a reciprocal process involving exchange of respect, love and concern for others. Connectedness in relations can be enhanced by an act of giving and receiving mutual care.

An individual is surrounded by multiple social ecologies that include family, relatives, neighbours, friends, peers and social groups. Individual differences are observed in terms of the level of proximity that determines the degree of connectedness among people. While forming networks, women show more proximity and intimacy in maintaining their relations with others and this in turn contributes towards enhanced social connectedness. On the other hand, failure in showing physical proximity affects level of connectedness among men (Lee, Keough, & Sexton, 2002). Intervention studies show that social connectedness with family and friends helps in reducing suicidal ideations (Oyama et al., 2008). Social isolation from peers increases the risk of suicidal thoughts (Bearman & Moody, 2004). At the same time, overdependence on peers for support adds to emotional distress (Donald, Dower, Correa-Velez, & Jones, 2006). Social connectedness reflects several benefits in the form of reducing risk for suicide, facilitating psychological well-being, diminishing the level of distress that affects mental health, promoting positive coping strategies and reducing maladaptive practices. Connectedness is drawn from interpersonal association shared by individuals that augment well-being.

Attachments are formed through connectedness and these attachments play a vital role in shaping one's attitude and behaviour (Bronfenbrenner & Morris, 1998). Individuals with low social connectedness are prone to appraise the situation negatively. Weakening of social ties increases the probability of suicide. Connectedness serves as a safeguard against a variety of adverse outcomes that include emotional stress (Resnick, Harris, & Blum, 1993), substance abuse and sexual activity (Battistich, Solomon, Watson, & Schaps, 1997). The quality of social ties in terms of closeness, perceived support and family cohesion are strong factors preventing suicidal behaviour. Connectednesses among school students show influential results towards coping with the feelings of anxiety and depression (Shochet, Dadds, Ham, & Montague, 2006). Among peers it has been identified as a strong protective factor towards reducing suicidal thoughts (Bearman & Moody, 2004). In college students, connectedness in the form of social support and social belongingness serves as a strong force against the development of suicidal ideation.

Social support remains as an influential source in the treatment of suicidal thoughts. It acts as a buffer against stress. Inadequate family support is harmful to human functioning. There has been a strong relationship between unsupportive family environment and suicide. Low family support is also linked to poor treatment adherence. Social support provided by both family members and non-family adults like teachers and friends serves as a promising resource towards the treatment of suicidal behaviour, thereby reducing the symptoms of depression. Peer support in the form of friendship tends to compensate for weak family bonds by enhancing adjustment and lessening symptoms of depression (Gauze, Bukowski, Aquan-Assee, & Sippola, 1996). There are gender differences in the kind and amount of support a person receives and perceives (Piko, 1998). Females perceive

strong support from family members and friends as compared to males (Slavin, 1991). Support from the sources helps in overcoming the symptoms of depression. Low support increases the severity of depressive symptoms (Mazza & Reynolds, 1998) and is also associated with the feelings of hopelessness, low positive experience and suicidal tendencies.

Connectedness in families serves as a protective factor against suicide (Eisenberg, Ackard, & Resnick, 2007), adversities of life, distress and depression among adolescents (Armstrong & Oomen-Early, 2009). Perceived affection and closeness reduces the likelihood of suicidal thoughts (Kaminski et al., 2010). According to Miller, Esposito-Smythers, and Leichtweis (2015), the existing theories of suicide suggest that suicidal behaviour increases due to lack of social support. According to Joiner's (2005) interpersonal theory of suicide (ITS), perceptions of thwarted belongingness and perceived burdensomeness are major factors causing suicidal thoughts and behaviour. Both these factors involve perceptions of social interactions and relational exchange. The theory proposes that both cognitions and emotions involve social exchange and a general perception of being valued and respected by others in a group. During adverse circumstances, individuals having adequate support system are more likely to develop coping strategies in order to deal with the crisis. Having a weaker support system often heightens the risk of suicide. Suicidal tendencies are observed less in those individuals who have a huge network of friends. More recent studies have shown that social isolation brings suicidal behaviour (Wary, Colen, & Pescosolido, 2011). The weakening of social ties is a cause of concern for the emergence of suicidal acts. An individuals' subjective experience of connectedness produces positive emotions (Livingstone & Srivastava, 2012). These experiences result in healthier mental and physical state (Gilbert, 2012). On the other hand negative emotions lead to neurophysiological imbalance resulting in suicide and depression (Eisenberger & Cole, 2012).

Conclusive Remarks

Suicide is a conscious decision by an individual to end one's life. It is an extreme form of behaviour that occurs due to an individual's inability to manage stress. It develops through an interplay of psychological, situational, cognitive and affective factors that place individuals at risk. It is due to the multitude of these factors that it becomes difficult to predict and prevent suicide. Suicide is a multi-faceted problem and as the problems multiply within the individual, the act of suicide becomes much more intense and impulsive. In order to understand the process of suicidal behaviour, a thorough evaluation is required that depends upon identifying and appraising the warning signs, risks and the presence of protective factors. As a part of suicide assessment, it is essential to find out specifically about individual's suicidal thoughts, plans and behaviours. The more an individual has thought about suicide, has made specific plans for it and intends to act on those plans, the greater will be the risk for suicide. For countering the effects of risk, one needs to develop

strategies that foster resilience and instil protective factors. The problems pertaining to suicide can be prevented by enhancing life skills, promoting well-being, restoring protective factors, generating awareness regarding mental illnesses and developing community networks. Protective factors can be enhanced through building self-esteem, personal competence and fostering positive relationships. Towards this end, social connectedness serves as an important protective factor that helps in counter-balancing the effects of risk factors associated with suicidal behaviour. Although the presence of protective factors in the form of social ties offers no guarantee that an individual will not attempt or complete suicide, but stronger the bond stronger will be an individual's ability to deal with the varying challenges of life. Future research in this area requires more emphasis on having a comprehensive approach not only to prevent suicide but to promote life through active engagements in connectedness building efforts.

References

Anestis, M. D., Selby, E. A., & Joiner, T. E. (2007). The role of urgency in maladaptive behaviors. *Behavior Research and Therapy, 45*(12), 3018–3029.

Armstrong, S., & Oomen-Early, J. (2009). Social connectedness, self-esteem and depression symptomatology among collegiate athletes versus non-athletes. *Journal of American College Health, 57*(5), 521–526.

Barber, B. K., & Schluterman, J. M. (2008). Connectedness in the lives of children and adolescents: A call for greater conceptual clarity. *Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 43*(3), 209–216.

Barber, M. E., Marzuk, P. M., Leon, A. C., & Portera, L. (1998). Aborted suicide attempts: A new classification of suicidal behavior. *American Journal of Psychiatry, 155*(3), 385–389.

Battistich, V., Solomon, D., Watson, M., & Schaps, E. (1997). Caring school communities. *Educational Psychologist, 32*(3), 137–151.

Bearman, P., & Moody, J. (2004). Suicide and friendships among American adolescents. *American Journal of Public Health, 94*(1), 89–95.

Beautrais, A. L. (2002). Gender issues in youth suicidal behavior. *Emergency Medicine, 14*(1), 35–42.

Bergen, H. A., Martin, G., Richardson, A. S., Allison, S., & Roeger, L. (2003). Sexual abuse and suicidal behavior: A model constructed from a large community sample of adolescents. *Journal of the American Academy of Child and Adolescent Psychiatry, 42*(11), 1301–1309.

Blatt, S. J. (1995). The destructiveness of perfectionism: Implications for the treatment of depression. *American Psychologist, 50*(12), 1003–1020.

Blatt, S. J., Quinlan, D. M., Chevron, E. S., McDonald, C., & Zuroff, D. (1982). Dependency and self-criticism: Psychological dimensions of depression. *Journal of Consulting and Clinical Psychology, 50*(1), 113–124.

Brezo, J., Paris, J., & Turecki, G. (2006). Personality traits as correlates of suicidal ideation, suicide attempts and suicide completions: A systematic review. *Acta Psychiatrica Scandinavica, 113*(3), 180–206.

Bronfenbrenner, U., & Morris, P. A. (1998). The ecology of developmental processes. In R. M. Lerner (Ed.), *Handbook of child psychology: Theoretical models of human development* (Vol. 1, pp. 993–1028). New York: Wiley.

Buss, D. M. (1989). Sex differences in human mate preferences: Evolutionary hypotheses tested in 37 cultures. *Behavioral and Brain Sciences, 12*(1), 1–49.

Canetto, S. S. (1997). Meanings of gender and suicidal behavior during adolescence. *Suicide and Life Threatening Behavior, 127*(4), 339–351.

Canetto, S. S. (2008). Women and suicidal behavior: A cultural analysis. *American Journal of Orthopsychiatry, 78*(2), 259–266.

Canetto, S. S., & Sakinofsky, I. (1998). The gender paradox in suicide. *Suicide & Life Threatening Behavior, 28*(1), 1–23.

Cantor, C., & Neulinger, K. (2000). The epidemiology of suicide and attempted suicide among young Australians. *Australian and New Zealand Journal of Psychiatry, 34*(3), 370–387.

Cavanagh, J. T., Carson, A. J., Sharpe, M., & Lawrie, S. M. (2003). Psychological autopsy studies of suicide: A systematic review. *Psychological Medicine, 33*(3), 395–405s.

Conner, K. R., Swogger, M. T., & Houston, R. J. (2009). A test of reactive aggression suicidal behavior hypotheses: Is there a case for proactive aggression? *Journal of Abnormal Psychology, 118*(1), 235–240.

Conwell, Y., & Brent, D. (1995). Suicide and aging: Patterns of psychiatric diagnosis. *International Psychogeriatrics, 7*(2), 149–181.

Cox, B., & Enns, M. (2004). Psychological dimensions associated with ideation and attempts in the National Comorbidity Survey. *Suicide and Life-Threatening Behaviour, 34*(3), 209–219.

Davis, M. T., Witte, T. K., & Weathers, F. W. (2014). Posttraumatic stress disorder and suicidal ideation: The role of specific symptoms within the framework of the interpersonal psychological theory of suicide. *Psychological Trauma: Theory, Research, Practice and Policy, 6*(6), 610–618.

Donald, M., Dower, J., Correa-Velez, I., & Jones, M. (2006). Risk and protective factors for medically serious suicide attempts: A comparison of hospital-based with population based samples of young adults. *Australian and New Zealand Journal of Psychiatry, 40*(1), 87–96.

Dumais, A., Lesage, A. D., Lalovic, A., Séguin, M., Tousignant, M., Chawky, N., & Turecki, G. (2005). Is violent method of suicide a behavioral marker of lifetime aggression? *American Journal of Psychiatry, 162*(7), 1375–1378.

Dunkley, D. M., Zuroff, D. C., & Blankstein, K. R. (2006). Specific perfectionism components versus self-criticism in predicting maladjustment. *Personality and Individual Differences, 40* (4), 665–676.

Eisenberg, M. E., Ackard, D. M., & Resnick, M. D. (2007). Protective factors and suicide risk in adolescents with a history of sexual abuse. *The Journal of Pediatrics, 151*(5), 482–487.

Eisenberger, N. I., & Cole, S. W. (2012). Social neuroscience and health: Neurophysiological mechanisms linking social ties with physical health. *Nature Neuroscience, 15*(5), 669–674.

Eposito, C., Spirito, A., Boergers, J., & Donaldson, D. (2003). Affective, behavioral and cognitive functioning in adolescents with multiple suicide attempts. *Suicide and Life Threatening Behavior, 33*(4), 389–399.

Flett, G. L., Hewitt, P. L., Blankstein, K. R., & O'Brien, S. (1991). Perfectionism and learned resourcefulness in depression and self-esteem. *Personality and Individual Differences, 12*(1), 61–68.

Gauze, C., Bukowski, W. M., Aquan-Assee, J., & Sippola, L. K. (1996). Interactions between family environment and friendship and associations with self-perceived well-being during adolescence. *Child Development, 67*(5), 2201–2216.

Gilbert, K. E. (2012). The neglected role of positive emotion in adolescent psychopathology. *Clinical Psychology Review, 32*(6), 467–481.

Goldney, R. D., Fisher, L. J., Wilson, D. H., & Cheok, F. (2002). Mental health literacy of those with major depression and suicidal ideation: An impediment to help seeking. *Suicide and Life-Threatening Behavior, 32*(4), 394–403.

Goldston, D. B., Daniel, S. S., Reboussin, B. A., Reboussin, D. M., Frazier, P. H., & Harris, A. E. (2001). Cognitive risk factors and suicide attempts among formerly hospitalized adolescents: A prospective naturalistic study. *Journal of the American Academy of Child and Adolescent Psychiatry, 40*(1), 91–99.

Gottschall, J. (2008). The "beauty myth" is no myth: Emphasis on male-female attractiveness in world folk tales. *Human Nature, 19*(2), 174–188.

Gould, M. S., Fisher, P., Parides, M., Flory, M., & Shaffer, D. (1996). Psychological risk factors of child and adolescent completed suicide. *Archives of General Psychiatry, 53*(12), 1155–1162.

Gunnell, D., Platt, S., & Hawton, K. (2009). The economic crisis and suicide. Consequences may be serious and warrant early attention. *British Medical Journal, 338,* 1456–1457.

Gvion, Y., & Apter, A. (2011). Aggression, impulsivity, and suicide behavior: A review of the literature. *Archives of Suicide Research, 15*(2), 93–112.

Haring, M., Hewitt, P. L., & Flett, G. L. (2003). Perfectionism, coping and quality of intimate relationship. *Journal of Marriage and the Family, 65*(1), 143–158.

Haw, C., & Hawton, K. (2011). Living alone and deliberate self-harm: A case-control study of characteristics and risk factors. *Social Psychiatry Epidemiology, 46*(11), 115–125.

Hawton, K. (2000). Sex and suicide. Gender differences in suicidal behaviour. *British Journal of Psychiatry, 177*(6), 484–485.

Hawton, K., Houston, K., Haw, C., Townsend, E., & Harriss, L. (2003). Comorbidity of axis I and axis II disorders in patients who attempted suicide. *The American Journal of Psychiatry, 160* (8), 1494–1500.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts: Conceptualization, assessment, and association with psychopathology. *Journal of Personality and Social Psychology, 60*(3), 456–470.

Hunter, E. C., & O'Connor, R. C. (2003). Hopelessness and future thinking in parasuicide: The role of perfectionism. *British Journal of Clinical Psychology, 42*(4), 355–365.

Jaworski, K. (2003). Suicide and gender: Reading suicide through Butler's notion of performativity. *Journal of Australian Studies, 27*(76), 137–146.

Johnson, J. G., Cohen, P., Kasen, S., Smailes, E., & Brook, J. S. (2001). Association of maladaptive parental behavior with psychiatric disorder among parents and their offspring. *Archives of General Psychiatry, 58*(5), 453–460.

Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

Joiner, T. E. (2011). *Lonely at the top: The high cost of men's success*. New York: Palgrave MacMillan.

Jourard, S. M., & Lasakow, P. (1958). Some factors in self disclosure. *Journal of Abnormal and Social Psychology, 56*(1), 91–98.

Kaminski, J., Puddy, R., Hall, D., Cashman, S., Crosby, A., & Ortega, L. (2010). The relative influence of different domains of social connectedness on self-directed violence in adolescence. *Journal of Youth and Adolescence, 39*(5), 460–473.

Kanchan, T., Menon, A., & Menezes, R. G. (2009). Methods of choice in completed suicides: Gender differences and review of literature. *Journal of Forensic Sciences, 54*(4), 938–942.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry, 56*(7), 617–626.

Kposowa, A. J., & McElvain, J. P. (2006). Gender, place, and method of suicide. *Social Psychiatry and Psychiatric Epidemiology, 41*(6), 435–443.

Lee, R. M., Draper, M., & Lee, S. (2001). Social connectedness, dysfunctional interpersonal behaviors, and psychological distress: Testing a mediator model. *Journal of Counseling Psychology, 48*(3), 310–318.

Lee, R. M., Keough, K. A., & Sexton, J. D. (2002). Social connectedness, social appraisal and perceived stress in college women and men. *Journal of Counseling & Development. 80*(3), 355–361.

Lee, R. M., & Robbins, S. B. (1995). Measuring belongingness: The social connectedness and the social assurance scales. *Journal of Counseling Psychology, 42*(2), 232–241.

Lester, D. (2010). Suicide in an international perspective. *Suicide and Life-Threatening Behavior, 27*(1), 104–111.

Lighthall, N. R., Sakaki, M., Vasunilashorn, S., Nga, L., Somayajula, S., Chen, E. Y., & Mather, M. (2011). Gender differences in reward related decision processing under stress. *Social Cognitive and Affective Neuroscience, 7*(4), 476–484.

Livingstone, K. M., & Srivastava, S. (2012). Up regulating positive emotions in everyday life: Strategies, individual differences, and associations with positive emotion and wellbeing. *Journal of Research in Personality, 46*(5), 504–516.

Luoma, J. B., & Pearson, J. L. (2002). Suicide and marital status in the United States, 1991–1996: Is widowhood a risk factor? *American Journal of Public Health, 92*(9), 1518–1522.

MacLeod, A. K., Pankhania, B., Lee, M., & Mitchell, D. (1997). Parasuicide, depression and the anticipation of positive and negative future experiences. *Psychological Medicine, 27*(4), 973–977.

Maris, R. (1992). The relationship of non fatal attempts to completed suicides. In R. W. Maris, A. L. Berman, J. T. Maltsberger, & R. I. Yuffit (Eds.), *Assessment and prediction of suicide* (pp. 362–380). New York: Guilford Press.

Martin, G., Bergman, H. A., Richardson, A. S., Roeger, L. A., & Allison, S. (2004). Sexual abuse and suicidality: Gender differences in a large community sample of adolescents. *Child Abuse and Neglect, 28,* 491–503.

Mazza, J., & Reynolds, W. (1998). A longitudinal investigation of depression, hopelessness, social support, and major and minor life events and their relation to suicidal ideation in adolescents. *Suicide and Life-Threatening Behavior, 28*(4), 358–374.

McGirr, A., Alda, M., Séguin, M., Cabot, S., Lesage, A., & Turecki, G. (2009). Familial aggregation of suicide explained by cluster B traits: A three-group family study of suicide controlling for major depressive disorder. *American Journal of Psychiatry, 166*(10), 1124–1134.

Miller, A. B., Esposito-Smythers, C., & Leichtweis, R. N. (2015). Role of social support in adolescent suicidal ideation and suicide attempts. *The Journal of Adolescent Health: Official Publication of the Society for Adolescent Medicine, 56*(3), 286–292.

Miranda, R., Gallagher, M., Bauchner, B., Vaysman, R., & Marroquín, B. (2012). Cognitive inflexibility as a prospective predictor of suicidal ideation among young adults with a suicide attempt history. *Depression and Anxiety, 29*(3), 180–186.

Mizrachi, H. B., Underwood, M., Mann, J., & Arango, V. (2009). Post mortem studies of serotonin in suicide. In D. Wasserman & C. Wasserman (Eds.), *Oxford textbook of suicidology and suicide prevention* (pp. 351–354). Oxford: Oxford University Press.

Moller-Leimkuhler, A. M. (2003). The gender gap in suicide and premature death or: Why are men so vulnerable? *European Archives of Psychiatry and Clinical Neurosciences, 253*(1), 1–8.

Morrison, R., & O'Connor, R. C. (2008). A systematic review of the relationship between rumination and suicidality. *Suicide and Life-Threatening Behaviour, 37*(6), 698–714.

Murphy, G. E. (1998). Why women are less likely than men to commit suicide. *Comprehensive Psychiatry, 39*(4), 165–175.

Najmi, S., Wegner, D. M., & Nock, M. K. (2007). Thought suppression and self-injurious thoughts and behaviors. *Behaviour Research and Therapy, 45*(8), 1957–1965.

O'Connor, R. C. (2007). The relations between perfectionism and suicidality: A systematic review. *Suicide and Life-Threatening Behavior, 37*(6), 698–714.

O'Connor, R. C. (2011). Towards an integrated motivational-volitional model of suicidal behaviour. In R. C. O'Connor, S. Platt, & J. Gordon (Eds.), *International handbook of suicide prevention: Research, policy and practice* (pp. 181–198). Chichester: John Wiley & Sons Ltd.

O'Connor, R. C., O'Carroll, R. E., Ryan, C., & Smyth, R. (2012). Self-regulation of unattainable goals in suicide attempters: A two year prospective study. *Journal of Affective Disorders, 142* (Suppl 1–3), 248–255.

Orbach, I., Mikulincer, M., King, R., Cohen, D., & Stein, D. (1997). Threshold for tolerance of physical pain in suicidal and non suicidal adolescents. *Journal of Consulting and Clinical Psychology, 65*(4), 646–652.

Orbach, I., Mikulincer, M., Sirota, P., & Gilboa-Schechtman, E. (2003). Mental pain: A multidimensional operationalization and definition. *Suicide and Life Threatening Behavior, 33*(3), 219–230.

Oyama, H., Sakashita, T., Ono, Y., Goto, M., Fujita, M., & Koida, J. (2008). Effect of community-based intervention using depression screening on elderly suicide risk: A meta-analysis of the evidence from Japan. *Community Mental Health Journal, 44*(5), 311–320.

Payne, S., Swami, V., & Stanistreet, D. L. (2008). The social construction of gender and its influence on suicide: A review of the literature. *Journal of Men's Health, 5*(1), 23–25.

Phillips, M. R., Yang, G., Zhang, Y., Wang, L., Ji, H., & Zhou, M. (2002). Risk factors for suicide in China: A national case-control psychological autopsy study. *Lancet, 360*(9347), 1728–1736.

Piko, B. (1998). Social support and health in adolescence: A factor analytical study. *British Journal of Health Psychology, 3*(4), 333–344.

Platt, S. (2011). Inequalities and suicidal behaviour. In R. C. O'Connor, S. Platt, & J. Gordon (Eds.), *International handbook of suicide prevention: Research, policy and practice* (pp. 211–234). Chichester: John Wiley.

Radhakrishnan, R., & Andrade, C. (2012). Suicide: An Indian perspective. *Indian Journal of Psychiatry, 54*(4), 304–319.

Rasmussen, S. A., Connor, R., & Brodie, D. (2008). Investigating the role of perfectionism and autobiographical memory in a sample of parasuicide patients: An exploratory study. *CRISIS: The Journal of Crisis Intervention and Suicide, 29*(2), 64–72.

Resnick, M. D., Harris, L. J., & Blum, R. W. (1993). The impact of caring and connectedness on adolescent health and well-being. *Journal of Paediatric Child Health, 29*(1), 3–9.

Rudd, M., Joiner, T., & Rajab, H. (1995). Help negotiation after acute suicidal crisis. *Journal of Consulting and Clinical Psychology, 63*(3), 499–503.

Schmeling, A., Strauch, H., & Rothschild, M. A. (2001). Female suicides in Berlin with the use of firearms. *Forensic Science International, 124*(Suppl 2–3), 178–181.

Schotte, D. E., & Clum, G. A. (1987). Problem-solving skills in suicidal psychiatric patients. *Journal of Consulting and Clinical Psychology, 55*(1), 49–54.

Schwartz, J. A. J., Kaslow, N. J., Seely, J., & Lewinsohn, P. (2000). Psychological, cognitive and interpersonal correlates of attributional change in adolescents. *Journal of Clinical Child Psychology, 29*(2), 188–198.

Shneidman, E. S. (1993). Commentary: Suicide as psychache. *Journal of Nervous and Mental Disease, 181*(3), 145–147.

Shochet, I. M., Dadds, M. R., Ham, D., & Montague, R. (2006). School connectedness is an underemphasized parameter in adolescent mental health: Results of a community prediction study. *Journal of Clinical Child and Adolescent Psychology, 35*(2), 170–179.

Slavin, L. A. (1991). Validation studies of the PEPSS: A measure of perceived emotional support for use with adolescents. *Journal of Adolescent Research, 6*(3), 316–335.

Spicer, R. S., & Miller, T. L. (2000). Suicide acts in 8 states: Incidence and case fatality rates by demographics and method. *American Journal of Public Health, 90*(12), 1885–1891.

Tewksbury, R., Suresh, G., & Holmes, R. M. (2010). Factors related to suicide via firearms and hanging and leaving of suicide notes. *International Journal of Men's Health, 9*(1), 40–49.

Tomlinson, M. W. (2012). War, peace and suicide: The case of Northern Ireland. *International Sociology, 27*(4), 464–482.

Tondo, L., Baldessarini, R. J., Hennen, J., Floris, G., Silvetti, F., & Tohen, M. (1998). Lithium treatment and risk of suicidal behavior in bipolar disorder patients. *Journal of Clinical Psychiatry, 59*(8), 405–414.

Westermeyer, J. F., Harrow, M., & Marengo, J. T. (1991). Risk for suicide in schizophrenia and other psychotic and non psychotic disorders. *Journal of Nervous Mental Disease, 179*(5), 259–266.

Whiteside, S. P., & Lynam, D. R. (2003). Understanding the role of impulsivity and externalizing psychopathology in alcohol abuse: Application of the UPPS impulsive behavior scale. *Experimental and Clinical Psychopharmacology, 11*(3), 210–217.

Wiktorsson, S., Runeson, B., Skoog, I., Ostling, S., & Waern, M. (2010). Attempted suicide in the elderly: Characteristics of suicide attempters 70 years and older and a general population comparison group. *American Journal of Geriatric Psychiatry, 18*(1), 57–67.

Witte, T. K., Gordon, K. H., Smith, P. N., & Van Orden, K. A. (2012). Stoicism and sensation seeking: Male vulnerabilities for the acquired capability for suicide. *Journal of Research in Personality, 46*(4), 384–392.

Wray, M., Colen, C., & Pescosolido, B. (2011). The sociology of suicide. *Annual Review of Sociology, 37*(1), 505–528.

Wyder, M., Ward, P., & De Leo, D. (2009). Separation as a suicide risk factor. *Journal of Affective Disorders, 116*(3), 208–213.

Chapter 7
Suicide as a Response to Trauma

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Suicide, the act of intentionally ending one's own life, is one of the most concerning health concerns that affect the world today. Completed suicide acts and non-fatal suicidal attempts result in substantial costs to society including institutionalization, sudden loss of life, and emotional suffering experienced by the individuals and their loved ones (Han et al., 2016). In the USA, it has been estimated that approximately 1.3 million adults attempted suicide in 2013 (SAMHSA, 2014). Additionally, suicide was the tenth leading cause of death among all age groups in 2014 (CDC, 2014a). Worldwide, suicide rates were determined to be over 800,000 annually (WHO, 2014). This estimate represents an average of one death by suicide every 40 seconds. However, studies reveal that suicide mortality rates are likely underreported and that actual deaths by suicide are much higher (Katz, Bolton, & Sareen, 2016). Cultural factors and religiosity in some countries may lead to unreported suicides, while some certain methods of suicide, such as self-poisoning, are often miscategorized as accidental deaths (Han et al., 2016; Katz et al. 2016). Additionally, less developed countries often lack the resources to collect reliable data concerning the prevalence of suicidality rates among their citizens (Han et al., 2016). More troubling is the prediction that suicide rates will increase twofold by the year 2020 (WHO, 2014). The World Health Organization estimates that suicidal acts will account for 1.5 million deaths yearly.

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Throughout the world, men are much more likely than women to carry out and succeed in suicide attempts (Nock et al., 2008). Some notable exceptions are in China (8.7 vs. 7.1 per 100,000 people) and Bangladesh (8.7 vs. 6.8 per 100,000) where women complete suicides at higher rates than men (WHO, 2012). Some suggest that males use more lethal means in their attempts resulting in this gender gap in suicide deaths (Nock et al., 2008). On the other hand, females are more likely to commit non-fatal suicide attempts (Nock et al., 2008). Moreover, younger men and women who are unmarried exhibit elevated rates of suicidal behaviour (Nock et al., 2008).

Accessibility to firearms greatly increases the risk for suicide (Bongar & Sullivan, 2013). In the U.S., more individuals commit suicide using firearms than by all other means combined (Miller, Azrael, & Hemenway, 2002). Additionally, geographic areas with higher rates of gun ownership had significantly more suicides by firearm and other means (Miller et al., 2002). Among U.S. states, greater access to firearms was associated with elevated suicide risk (Kposowa, 2013).

Risk Factors for Suicide

Assessing for suicidal risk continues to be a significant challenge for clinicians (Bongar & Sullivan, 2013). Since base rates for completed suicides among specific groups are considerably smaller among the general population, it is impractical to develop an assessment tool that will accurately estimate future suicidal behaviour (Bongar & Sullivan, 2013). However, while it is difficult to predict when individuals will commit suicidal acts, the prevalence of certain biological, psychological, and cultural factors greatly influences the risk for individuals to experience suicidal thoughts and follow through on their suicidal plans. Risk factors for suicide include having a mental disorder, psychological traits such as impulsivity and aggression, feelings of loneliness and alienation, and belonging to particular cultural groups.

Psychopathology Past literature has been in agreement concerning the high prevalence of psychopathology among those who exhibit suicidal behaviour (Bongar & Sullivan, 2013; Gvion & Apter, 2011). Nine out of ten of suicide attempters met criteria for a psychological disorder (Gvion & Apter, 2011). A meta-review of suicide among those with a diagnosed mental disorder found that most mental disorders were associated with increased suicide risk (Chesney, Goodwin, & Fazel, 2014). Mood disorders, borderline personality disorder, substance use disorders, and schizophrenia were all associated with higher levels of suicide risk (Chesney et al., 2014). While most suicide attempters do suffer from a form of psychopathology, and often multiple disorders, it is a key to note that having a mental disorder does not equate to suicidal behaviour (Gvion & Apter, 2012). In fact, most individuals with a mental disorder do not attempt suicide (Gvion & Apter, 2012). However, the prevalence of psychopathology is one of the strongest predictors of suicidal risk (Gvion & Apter, 2012).

Mood Disorders Mood disorders are commonly associated with increased suicidal behaviour (Antypa et al., 2016). The DSM-5 specifically lists suicidality as one of the criteria for major depressive disorder (APA, 2013). A strong correlation has been found between past suicide attempts and the existence of current depressive symptoms (Antypa et al., 2016). Additionally, comorbid anxiety disorders are a significant predictor for current suicide risk among those diagnosed with major depression or bipolar disorder (Antypa et al., 2016). Children and adolescents taking selective serotonin reuptake inhibitors for their depressive symptoms are particularly susceptible to suicidal ideation and suicide attempts (Barbui, Esposito, & Cipriani, 2009).

Borderline Personality Disorder Borderline personality disorder (BPD) is also strongly associated with suicide attempts and completed suicides (Gvion & Apter, 2012). Along with major depressive disorder, BPD is the only other diagnosis to have suicidality listed as one of its criteria (APA, 2013). As many as three-fourths of individuals with BPD will attempt suicide over their lifetime, and one-tenth of BPD patients will die from suicide (Soloff, Lis, Kelly, Cornelius, & Ulrich, 1994). Clients diagnosed with BPD make an average of 3.4 suicide attempts in their lifetime (Soloff et al., 1994). High levels of impulsivity among individuals with BPD have been implicated in both the lethality and the number of past suicide attempts (Chesin, Jeglic, & Stanley, 2010).

Substance Use Disorders Individuals diagnosed with alcohol use disorder and high levels of impulsivity have been found to be more likely to attempt suicide (Wojnar et al., 2009). One study found that 43% of those with severe alcohol dependence had made at least one suicide attempt in their lifetime and impulsive individuals lacked premeditation in their attempt 63% of the time (Wojnar et al., 2009). Comorbidity of substance use with another psychological disorder is significantly associated with suicidal behaviour (Carrà, Bartoli, Crocamo, Brady, & Clerici, 2014). Abuse or dependence of either alcohol or cannabis among individuals with bipolar disorder was related to higher likelihood of committing suicidal acts (Carrà et al., 2014). Moreover, those that have been diagnosed with substance use disorder at any time during their life also correlated with higher risk (Carrà et al., 2014).

Schizophrenia About half of patients with schizophrenia attempt suicide in their lifetime with five percent dying from their suicidal act (Bertelsen et al., 2007). A recent study revealed that men diagnosed with schizophrenia who have been recently discharged after being hospitalized are at greatest risk of suicide (Weiser et al., 2015). Moreover, individuals who had lower IQ levels prior to being hospitalized were shown to exhibit the highest levels of suicidal behaviour (Weiser et al., 2015). Comorbid substance uses disorder and depressive symptoms among those with schizophrenia and also increased risk of suicide attempts (Fuller-Thomson & Hollister, 2016).

Aggression Research has found that people that exhibit elevated levels of emotionally charged, impulsive aggression are at risk for suicide (Conner, Swogger, & Houston, 2009). More aggressive acts lead to increased risk for suicidal behaviour (past planned suicide attempts) but not necessarily higher levels of suicidal

ideation (Swogger, Van Orden, & Conner, 2014). The presence of aggressive behaviour has also been shown to be related to the use of more lethal means in suicide attempts (Swogger et al., 2014). However, not all research findings are in agreement concerning evidence of a relationship between aggression and the severity of suicide attempts (Gvion & Apter, 2012). One biological link that has been explored linking aggression with suicide has been the level of serotonin among suicide attempters (Mann & Malone, 1997). Lower serotonergic activity which has been implicated in aggression correlated with more violent attempts among those with depression (Mann & Malone, 1997).

Impulsivity The diminished capacity to regulate one's behaviours and to perform adequate planning is associated with a preference of immediate rewards among impulsive individuals (Evenden, 1999). The impaired ability to adequately consider consequences before taking action has been related to increased suicidal behaviour (Klonsky & May, 2010). Individuals who tend to act impulsively when faced with stressful situations strongly correlate with increased suicidal ideation and behaviour (Klonsky & May, 2010). A recent study concluded that heightened attentional impulsivity was a common among suicide attempters regardless of the severity of the individual's psychological symptoms (Wu et al., 2009).

Loneliness and Alienation Chronic feelings of loneliness and alienation can cause some to see suicide as a way out of a miserable existence (Gvion & Apter, 2012). While there are those who are able to share their difficulties with friends and loved ones, individuals who have difficulty in communicating with others or lack a support structure suffer with loneliness and alienation (Gvion & Apter, 2012). Additionally, living alone and being single greatly increase one's risk for suicide (Bongar & Sullivan, 2013). The interpersonal theory of suicide hypothesizes that thwarted belongingness and perceived burdensomeness are two constructs that can lead to suicidal ideation (Van Orden et al., 2010). Thwarted belongingness deals with being socially isolated and having a lack of connectedness with others. On the other hand, perceived burdensomeness deals with feeling like one is a burden on others and is a liability to family, friends, and others. Over time, a lack of social connection and feelings of being a burden on others lead to hopelessness if they feel that these two conditions will not improve (Chu et al., 2015).

Psychache and Mental Pain The chronic experience of negative emotions, such as shame, hopelessness, and defeat, can develop into a state of perturbed and unbearable emotionality—often known as psychache or mental pain (Gvion & Apter, 2012; Pompili, Lester, Leenaars, Tatarelli, & Girardi, 2008). Psychache can result from traumatic experiences that deny individuals from their essential needs (Gvion & Apter, 2012). It has been argued that most suicidal acts are initiated by long periods of psychache and motivated by an intent to terminate the enduring pain (Pompili et al., 2008). Attempting suicide becomes a suitable option for individuals suffering with psychache who are looking to escape their unending psychological pain (Bongar & Sullivan, 2013; Gvion & Apter, 2012).

Cultural Groups Belonging to certain minority cultural groups has been associated with increased suicidal risk (Chu et al., 2013). Death by suicide is particularly high for African-American adolescents and young adults (Heron, 2007)

as well as older Asian-American adults (Bartels et al., 2002). At 2.5 times the national average, Native American young people aged 15–24 years have the highest suicide rate among cultural/age groups in the USA (CDC, 2012). LGBTQ youth has considerably higher rates of suicidal behaviour than their heterosexual and cisgender peers (McDaniel, Purcell, & D'Augelli, 2001). Additionally, gay, lesbian, and bisexual people that identify with an ethnic/racial minority have been found to have significantly higher risk of suicide compared to White individuals (O'Donnell, Meyer, & Schwartz, 2011).

Overview of Trauma

Trauma Defined

Trauma has been defined in a number of different ways across various fields, which has raised controversy regarding a "true" definition of trauma. Professionals often reference the Diagnostic and Statistical Manual of Mental Disorders (DSM; American Psychiatric Association [APA]) when attempting to define or understand this complicated concept. There are criticisms between the definitions presented in the DSM's third edition (DSM-III-R; APA, 1987), fourth edition (DSM-IV-TR; APA, 2000), and the current fifth edition (DSM-5; APA, 2013). Briere and Scott (2006) explain that the DSM-IV-TR definition of trauma is a lengthy encompassment of events or acts involving death or serious injury. The definition also describes physical harm, violence, and harm that occurs to self or family members as well and proceeds to give a list of examples of traumas (e.g. combat, sexual or physical assault, torture, and disasters). Yet, Briere and Scott (2006) argue that this definition appears to neglect other forms of trauma such as psychologically involved forms of trauma, which is in fact referenced in the definition provided in the DSM-III-R version. Therefore, Briere and Scott (2006) determined that the best way to begin to consider trauma in a broader way is as an event that is "extremely upsetting and at least temporarily overwhelms the individual's internal resources".

Trauma can occur in a number of different ways and impact people in various ways as well. Symptoms following trauma exposure may be experienced as anxiety or fear; however, it may also be experienced with symptoms of anger, aggression, anhedonia, dysphoria, dissociation, or even a combination of these (APA, 2013). Since there is variable interpretations and experiences of distress caused by trauma, the DSM-5 has mapped out different possible expressions.

Types of Trauma

There are various types of trauma that impact the aforementioned expressions of distress, and a high prevalence rate of experiences among adults in the USA. Trauma can involve individual trauma experiences or collective traumas experiences.

Individual Traumas Traumas of this nature involve interpersonal acts between individuals or small groups that could be directly experienced or also witnessed. Some examples of these traumas include physical assault, sexual assault, violence, death, torture, abuse, and battery.

Rape, Sexual Assault, and Sexual Abuse Trauma Rape is commonly defined as the violation by another person through oral, vaginal, or anal penetration without consent (Bierie & Davis-Siegel, 2015), whereas sexual assault is a more inclusive term that includes rape and other forms of unwanted sexual contact (e.g. fondling, kissing, or groping; Abbey & McAuslan, 2004). Sexual abuse often refers to repeated forced sexual behaviour by another person. According to Herman (1997), the intrusive symptoms associated with trauma decrease or subside after 3–6 months; however, survivors reported fearfulness and anxiousness persistence one year after the rape occurred. In many cases, survivors continued to experience symptoms related to the rape 2–3 years after the initial trauma. Even though it has been reported that over time trauma-related symptoms subside, it is also likely that when survivors are reminded of the original trauma, the symptoms return. The symptoms that appear to most greatly impact survivors' lives are fears, sexual problems, and restrictions of daily life activities (Herman, 1997). Sexual abuse in children may have a stronger impact on those who are younger than those who are older, and the younger aged children are increasingly vulnerable to trauma-related disorders (Herman, 1997). Strong feelings of shame and guilt are frequently experienced by survivors after enduring these forms of trauma. These traumas are more frequently experienced by women compared to men.

In fact, as of 2010, one in every five women and one in 71 men experience rape in their lives at some point. According to study by the National Center for Injury Prevention and Control (NCIPC, 2003), intimate partner victimization (i.e. stalking, assault, and rape) presented in nearly 5.3 million cases. Of these 5.3 million cases, 2 million people presented with injuries severe enough to require hospitalization, and roughly 1300 of these individuals died due to the victimization they experienced (NCIPC, 2003).

Physical Assault Trauma and Partner Battery Physical assault is often described as an act or encounter at the hands of a stranger or unknown assailant. Typically, physical assaults are violent acts in the form of strangulations, stabbings, shootings, beatings, and muggings. According to Currier and Briere (2000), these traumatic events can occur in a number of ways, including random acts of violence, robberies, or even gang-related violence (e.g. drive by shootings, or "turf wars"). This type of trauma, in fact, is more frequently experienced by men than women. On the other hand, partner battery is more frequently experienced by women compared to men and can be behaviour in the form of physical or sexual assaults

(Briere & Scott, 2006). These forms of assault are highly emotional and can involve others in the home such as children, property, and pets (Straus & Gelles, 1990; Briere & Scott, 2006). In the USA, more than one million acts of aggravated physical assault were reported in 2014 alone.

Child Abuse In the USA, child abuse involves the maltreatment of those under the age of 18 in the form of neglect or physical, emotional, or psychological harm (Rogers & Turner, 2012). In 2014, it was reported by Child Protective Services (CPS) that just over 700,000 children were victims of maltreatment, which is about one in four children in the USA (CDC, 2014b). An estimated 1650 of these children died due to their maltreatment such as physical abuse, sexual abuse, or neglect (CDC, 2014b). According to ChildHelp.org, every 10 seconds, a child abuse report is made in the USA. This adds up to roughly eight million children who suffer physical injury a year from physical abuse; of this eight million, 200,000 of these require hospitalization (McIntosh & Mata, 2008). Following the injuries caused by the abuse, about 90,000 children go on to suffer from disabilities (McIntosh & Mata, 2008).

Torture While there has been some controversy about what acts constitute torture, most agree that torture involves the infliction of severe physical or psychological pain in a way or for a reason that is considered either immoral or illegal (Barnes, 2015). According to Amnesty International (2014), torture acts have been reported in over three-fourths of the world's countries.

Collective Traumas These traumas are large-scale traumas that impact societies, communities, and cultures as a whole and can have a direct impact on the functioning of the cultural and societal system (Young, 1998).

Natural Disasters Natural disasters are considered any non-human-caused, environmental large-scale event that causes injury or death, impacting significant amounts of people directly involved or not (Briere & Scott, 2006). Some examples of natural disasters include tornados, earthquakes, hurricanes, volcanoes, floods, fires, and avalanches. Small-scale fires (e.g. house fires or smaller) can also often produce traumatization and impact individuals not only physically, but mentally as well (Briere & Scott, 2006). More than 15% of individuals report directly experiencing natural disasters at some point over their lifetime (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

Mass Traumas and War These traumas are also often referred to as interpersonal violence or human-caused intentional violence. These traumas target high numbers of people typically causing large numbers of injuries or deaths and are typically in the form of bombings or terrorist attacks (Briere & Scott, 2006). In the war-torn region of the Gaza, lifetime PTSD prevalence is estimated to be as high as 18% (de Jong et al., 2001). Approximately 24% of the survivors of the Rwandan genocide met criteria for post-traumatic stress disorder (Pham, Weinstein, & Longman, 2004).

Transportation Accidents There are two categories that fall into transportation accidents, which include large-scale and small-scale accidents. Large-scale accidents are those that involve large transportation vessels such as aircrafts, trains, and boat or ship accidents, which typically result in higher numbers of injuries and

deaths (Briere & Scott, 2006). Individuals who experience these types of traumas may later experience fear of death or ongoing terror related to the event. Small-scale accidents (i.e. motor vehicle accidents) impact individuals in similar ways, especially if they experience injury or witness death because of the accident. Often times, these individuals will also experience feelings of grief-self-blame, and survivor's guilt. According to Briere and Scott (2006), these type of accidents are more likely to produce post-traumatic stress disorder (PTSD) compared to other non-interpersonal traumas, but are the least recognized and asked about among mental health care. According to statistics provided by the CDC (2014c), roughly 37,000 people die in road-related crashes or accidents every year. It has been estimated that approximately 20% of individuals experience serious motor vehicle accidents in the USA that may result in experiences of PTSD (Krysinska, Lester, & Martin, 2009).

Rescue Responder's Exposure to Trauma/Vicarious Trauma Firefighters, emergency personnel, mental health professionals, and social workers can experience vicarious trauma after repeated exposure to others who suffer or tragically die during a severely traumatic event (Smith et al., 2014). These individuals can develop psychological symptoms similar to those experienced by those directly exposed to trauma, including PTSD (Smith et al., 2014). Therapists exposed to details of their client's traumatic story can become overly empathetic and become at high risk of developing trauma symptoms (Finklestein, Stein, Greene, Bronstein, & Solomon, 2015). In a study of clinicians who worked directly with survivors of Hurricane Katrina, 73% reported high levels of anxiety and 35% suffered from depressive symptoms (Culver, McKinney, & Paradise, 2011).

Cultural Traumas When members of a minority ethnic, racial, religious, sociopolitical, or other suppressed social group have collectively been exposed to an extremely distressing event, the experience is often referred to as a cultural trauma (Alexander, 2016). The trauma evokes painful memories and forever undermines the essence of community among individuals belonging to a cultural group (Alexander, 2016). Cultural traumas can involve multiple individual experiences that collectively affect a cultural group (hate crimes) or occur for longer periods of time and impact many generations (slavery).

Hate Crimes A hate crime involves violence and victimization of a member of a cultural group where the main factor instigating the event is hatred and bias towards the victim's race, ethnicity, religion, or sexual orientation (Johnson, 2013). Trauma that results from hate crimes has been found to be more severe and painful than other forms of trauma (Johnson, 2013). In the USA, over 6,600 hate crimes were reported in 2009 alone (Berfanger, 2011).

Large-Scale Intergenerational and Historic Traumatic Events Large-scale traumatic events such as the Holocaust can have lasting detrimental effects on members of the affected cultural group (Matz, Vogel, Mattar, & Montenegro, 2015). In fact, not only do the survivors of the Holocaust experience high levels of trauma symptoms but so do their children and grandchildren (Matz et al., 2015). Among offspring of survivors, studies have found higher levels of depression, anxiety, aggression, and sleep disturbances (Matz et al., 2015). After the abolition

of slavery, African Americans continued to suffer from shame and extraordinary pain due to memories of the exploitation of their enslaved predecessors (Graff, 2014). Transmission of secondary trauma through the generations continues today as members of the African-American community still experience prejudice, racism, and disenfranchisement (Graff, 2014).

Correlation Between Trauma and Suicide

Consequences of Trauma There are high correlations between the experiences of trauma and increases in suicidal ideations and behaviours; in fact, trauma is a leading risk factor for thoughts and behaviours related to suicide (Krysinska et al., 2009). In the USA alone, Kessler et al. (1999) reported that over 50% of females and 60% of males would experience at least one traumatic event in their lives. Additionally, there are significantly higher risks for developing mental health problems among people who have experienced trauma (Krysinska et al. 2009).

Post-traumatic Stress Disorder (PTSD) Davidson, Stein, Shalev, and Yehuda (2004), found an estimated 1.3–7.8% prevalence rate of lifetime post-traumatic stress disorder (PTSD) in the general population. However, these rates are much higher in the veteran population. In one study, about 16% of an American Vietnam War veteran sample met full criteria for a lifetime diagnosis of PTSD, and 11% met criteria for a partial PTSD diagnosis (Scurfield, 1993). It has been determined that PTSD is not only a diagnosis among war veterans, but can be seen among various groups following a traumatic experience. For example, during the wars in Croatia, Bosnia, and Herzegovina, many women were being raped throughout these countries. A sample of these women was assessed and 31% of them were diagnosed with PTSD following the assault (Loncar, Medved, Jovanovic, & Hotujac, 2006). Following a rape, women have a 50–90% chance of developing PTSD (Kilpatrick, 2000). Similarly, Sharhabani-Arzy, Amir, Kotler, and Liran (2003) found that 52% of a sample of Israeli women who were battered met full criteria for PTSD. Those with a history of torture and imprisonment are at extremely high risk for PTSD. Among a sample of Sweden refugees, 83% of the individuals suffered from PTSD (Ferrada-Noli, Asberg, Ormstad, Lundin, & Sundbom, 1998).

Influence of PTSD on the Correlation Between Suicide and Trauma Considering the information presented above, it may come as no surprise that there is a strong relationship between PTSD and suicidality (Sareen et al., 2007). Combinations of PTSD and mood disorders show even greater presence of suicide risks (Pico-Alfonso et al., 2006). In a study by Oquendo et al. (2003), patients diagnosed with depression without PTSD reported significantly less suicide attempts than patients diagnosed with depression and PTSD.

Personality Development and Childhood Trauma As was discussed previously, individuals with innate personality traits of aggression and impulsivity may be at higher risk of suicidal behaviour engagement. More significantly, trauma experiences have shown to impact children's personality development particularly

in the trait development of aggression and impulsivity (Conner et al., 2009). Children who experienced physical or sexual abuse indicated higher scores on impulsivity measures and aggression measures, more reports of attempted suicide, and greater likelihood to develop borderline personality disorder later in life (Brodsky et al., 2001). Dissociative tendencies, which may occur as a result from childhood traumas, are also factors associated with increased risk of suicidal behaviours (Saxe, Chawla, & van der Kolk, 2002). Similarly, as a result of childhood traumas, cognitive functioning (e.g., problem solving abilities, hopelessness, self-esteem, memory and learning abilities, processing speed, and emotional regulation) may be greatly impacted by those experiences of trauma leading to higher likelihood of engaging in suicidal and risk behaviours (Yang & Clum, 2000).

Correlates of Childhood Abuse Trauma and Suicide Analogous to adult physical trauma, child abuse and neglect yield comparable results in terms of risk for suicide. Paolucci, Genius, and Violato (2001) found that there is a 150% increase in risk of becoming suicidal after being sexually abused as a child. Another study indicates that women have higher rates of suicide attempts and self-harming behaviours if they were childhood sexual abuse victims (Gladstone et al., 2004). Therefore, a history of sexual abuse or neglect experienced as a child greatly impacts psychological functioning and has been shown to increase suicidal thinking, attempts, and other high risk behaviours. However, among these groups, the individuals that show the highest risk of suicide attempts are women with a history of combined trauma. For example, women who were victims of sexual assault in both childhood and as an adult attempted suicide more frequently compared to those who were victims in either childhood or adulthood but not both (Cloitre, Scarvalone, & Difede, 1997; Ulman & Breckin, 2002).

Correlates of Assault and Suicide Simon, Anderson, Thompson, Crosby, and Sacks (2002) found that those who have experienced physical assault are at six times higher of a risk of suicidal ideation and behaviour than non-victims. It has also been determined that a history of rape and suicidal behaviours are strongly associated (Bridgeland, Duane, & Steward, 2001). According to Kilpatrick (2000), after the rape, victims are four times more likely to have thoughts of suicide and 13 times more likely to attempt suicide compared to non-victims of rape. Pico-Alfonso et al. (2006) determined that not only are experiences of physical and non-physical partner abuse risk factors for suicidal behaviour, but witnessing these events within the family is also highly correlated with suicidal thinking and attempts following the event.

Influence of Natural Disasters on Suicide Studies found that following a hurricane in the USA the mortality rate increased significantly and roughly five suicides and a number of homicide suicides were found to be related to trauma effects related to the hurricane (Lew & Wetli, 1996). After the earthquake in Kobe, Japan, suicide claimed 26 people; similarly, increased rates of suicide followed the earthquake in Taiwan in 1999, and in the same year, the earthquake in Turkey increased suicide rates among students. In 2005, the victims of Gulf Coast hurricanes in the USA were displaced; this included roughly about 366 people; and of

this number, one suicide was completed, and eleven other people made attempts (Larrance, Anastario, & Lawry, 2007). According to Larrance et al. (2007), "suicide completion rates after displacement were more than 14 times the baseline rates, and attempt rates were more than 78 times baseline". It was also determined that individuals who had unresolved stresses related to Hurricane Katrina showed higher rates of suicidal ideation (Kessler et al., 2008).

Increases of Suicidal Thinking Following Torture and Genocide Exposure Somasundaram (1993) found that 38% of survivors of torture, from a study of war in Sri Lanka, endorsed suicidal ideation. Lebanese refugees were subjected to torture and also indicated a history of thoughts of suicide (Hougen, 1998). Forty percent of tortured Sweden refugees were diagnosed with PTSD and made at least one suicide attempt (Ferrada-Noli, Asberg, & Ormstad, 1998). There has been a plethora of studies examining and evaluating the long-term effects that genocide exposure has on mental health and suicidal ideations. During the Holocaust, it is estimated that a rate of 44.3 completed suicide and 26.2 attempted suicide per 100,000 per year among Jewish prisoners (Krysinska & Lester, 2002). Unsurprisingly, it has been determined that in the concentrations camps, there was an extraordinarily high rate of suicide (Lester, 2005).

It is likely that there are long-term impacts of Holocaust trauma including increased risk for depression and increased risk for suicidal ideation. In fact, survivors with depression were 52% more likely than survivors without depression to report suicidal ideation (Clarke et al., 2004).

Levine, Levav, Yoffe, Becher, and Pugachova (2016) found that 70 years after Holocausts events, survivors presented more PTSD symptoms. They have linked Holocaust and other genocide type exposure to increase in depression, anxiety, suicidal thinking, and other risk behaviours. It was also determined there was an increased risk of suicide among refugees during the Holocaust who fled Europe (Levine et al., 2016).

Consequences of Vicarious Trauma It should also be noted that individuals may experience secondary or vicarious trauma, which is being impacted by a traumatic event that one was not directly a victim of (Bendek, Fullerton, & Ursano, 2007). This is more likely to occur among professionals who serve those directly impacted by traumas (e.g. family members, mental health professionals, medical professions, emergency services personnel, and rescue responders). However, this is also likely to occur within families when witnessing abuse, individuals who witness violence, and even partners of combat veterans (Bendek et al., 2007). All these individuals also show symptoms of PTSD and other psychological distress; furthermore, 15% of female partners to combat veterans reported suicidal thoughts and showed increased in psychological distress including symptoms of PTSD as well (Manguno-Mire et al., 2007).

Conclusion

Suicide ideation and suicidal behaviours are two of the most pressing health concerns in the world. Individuals that experience traumatic events are not only at high risk of developing a debilitating mental disorder such as PTSD and borderline personality disorder but are also more likely to think about suicide and act on their suicidal plans. The mental pain and anguish caused by trauma can be so severe that suicide seems to be the only way out. Given the strong correlation between trauma and suicide, it seems prudent to adequately assess suicidal risk after individuals suffer from traumatic experiences such as child abuse, rape, physical assault, natural disasters, or war. Additionally, providing sufficient resources and treatment to those who have had their sense of safety and well-being taken because of trauma may help curb the risk of suicide.

References

Abbey, A., & McAuslan, P. (2004). A longitudinal examination of male college students' perpetration of sexual assault. *Journal of Consulting and Clinical Psychology, 72*(5), 747–756.

Alexander, J. C. (2016). Culture trauma, morality and solidarity: The social construction of 'Holocaust' and other mass murders. *Thesis Eleven, 132*(1), 3–16.

American Psychiatric Association (APA). (1987). *Diagnostic and statistical manual of mental disorders* (3rd ed.). Arlington, VA: American Psychiatric Publishing.

American Psychiatric Association (APA). (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Arlington, VA: American Psychiatric Publishing.

American Psychiatric Association (APA). (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Amnesty International. (2014). *Torture in 2014*. London. Retrieved from https://www.amnestyusa.org/sites/default/files/act400042014en.pdf.

Antypa, N., Souery, D., Tomasini, M., Albani, D., Fusco, F., Mendlewicz, J., & Serretti, A. (2016). Clinical and genetic factors associated with suicide in mood disorder patients. *European Archives of Psychiatry and Clinical Neuroscience, 266*(2), 181–193.

Barbui, C., Esposito, E., & Cipriani, A. (2009). Selective serotonin reuptake inhibitors and risk of suicide: A systematic review of observational studies. *Canadian Medical Association Journal, 180*(3), 291–297.

Barnes, J. (2015). The "War on Terror" and the battle for the definition of torture. *International Relations, 30*(1), 102–124.

Bartels, S. J., Coakley, E., Oxman, T. E., Constantino, G., Oslin, D., Chen, H., & Sanchez, H. (2002). Suicide and death ideation in older primary care patients with depression, anxiety, and at-risk alcohol abuse. *American Journal of Geriatric Psychiatry, 10*(4), 417–427.

Bendek, D. M., Fullerton, C., & Ursano, R. J. (2007). First responders: Mental health consequences of natural human-made disasters for public health and public safety workers. *Annual Review of Public Health, 28,* 55–68.

Berfanger, R. (2011). FBI shares hate crime statistics. *Indiana Lawyer, 21*(22), 3–21.

Bertelsen, M., Jeppesen, P. I. A., Petersen, L., Thorup, A., Ohlenschlager, J., Quach, P. L. E., & Nordentoft, M . (2007). Suicidal behaviour and mortality in first-episode psychosis: The OPUS trial. *The British Journal of Psychiatry*, *191*(51), 140–146.

Bierie, D. M., & Davis-Siegel, J. C. (2015). Measurement matters: Comparing old and new definitions of rape in federal statistical reporting. *Sexual Abuse: Journal of Research And Treatment, 27*(5), 443–459.

Bongar, B., & Sullivan, G. (2013). The assessment of elevated risk. *The suicidal patient: Clinical and legal standards of care* (3rd ed., pp. 103–155). Washington, DC: American Psychological Association.

Bridgeland, W., Duane, E., & Steward, C. (2001). Victimization and attempted suicide among college students. *College Student Journal, 35*(1), 63–76.

Briere, J., & Scott, C. (2006). *Principles of trauma therapy: A guide to symptoms, evaluations, and treatment*. Thousand Oaks, CA: Sage Publications.

Brodsky, B., Oquendo, M., Ellis, S. P., Hass, G. L., Malone, K. M., & Mann, J. J. (2001). The relationship of childhood abuse to impulsivity and suicidal behaviour in adults with major depression. *American Journal of Psychiatry, 158*(11), 1871–1877.

Carrà, G., Bartoli, F., Crocamo, C., Brady, K. T., & Clerici, M. (2014). Attempted suicide in people with co-occurring bipolar and substance use disorders: Systematic review and meta-analysis. *Journal of Affective Disorders, 167,* 125–135.

Centers for Disease Control and Prevention (CDC). (2012). *Deaths: Leading causes for 2008, National Vital Statistics Reports*, 60(6), June 6, 2012. Retrieved from http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_05.pdf.

Centers for Disease Control and Prevention (CDC). (2014a). *10 leading causes of death, United States 2014, all races, both sexes.* Retrieved from http://webappa.cdc.gov/cgi-bin/broker.exe.

Centers for Disease Control and Prevention (CDC). (2014b). *Child abuse and neglect prevention.* Retrieved from http://www.cdc.gov/violenceprevention/childmaltreatment/.

Centers for Disease Control and Prevention (CDC). (2014c). *Injury prevention and control: Motor vehicle safety.* Retrieved from http://www.cdc.gov/motorvehiclesafety/.

Chesin, M. S., Jeglic, E. L., & Stanley, B. (2010). Pathways to high-lethality suicide attempts in individuals with borderline personality disorder. *Archives of Suicide Research, 14*(4), 342–362.

Chesney, E., Goodwin, G. M., & Fazel, S. (2014). Risks of all-cause and suicide mortality in mental disorders: A meta-review. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA), 13*(2), 153–160.

ChildHelp.org. (2014). *Child abuse statistics*. Retrieved from https://www.childhelp.org/child-abuse-statistics/.

Chu, J., Floyd, R., Diep, H., Pardo, S., Goldblum, P., & Bongar, B. (2013). A tool for the culturally competent assessment of suicide: The Cultural Assessment of Risk for Suicide (CARS) measure. *Psychological Assessment, 25*(2), 424–434.

Chu, C., Klein, K. M., Buchman-Schmitt, J. M., Hom, M. A., Hagan, C. R., & Joiner, T. E. (2015). Routinized assessment of suicide risk in clinical practice: An empirically informed update classification of suicide risk level. *Journal of Clinical Psychology, 71*(12), 1186–1200.

Clarke, D. E., Colantonio, A., Heslegrave, R., Rhodes, A., Links, P., & Conn, D. (2004). Holocaust experience and suicidal ideation in high-risk older adults. *American Journal of Geriatric Psychiatry, 12*(1), 65–74.

Cloitre, M., Scarvalone, P., & Difede, J. (1997). Posttraumatic stress disorder, self-and interpersonal dysfunction among sexually retraumatized women. *Journal of Trauma Stress, 10*(3), 437–452.

Conner, K. R., Swogger, M. T., & Houston, R. J. (2009). A test of the reactive aggression-suicidal behaviour hypothesis: Is there a case for proactive aggression? *Journal of Abnormal Psychology, 118*(1), 235–240.

Culver, L. M., McKinney, B. L., & Paradise, L. V. (2011). Mental health professionals' experiences of vicarious traumatization in post-hurricane Katrina New Orleans. *Journal of Loss & Trauma, 16*(1), 33–42.

Currier, G., & Briere, J. (2000). Trauma orientation and detection of violence histories in the psychiatric emergency service. *Journal of Nervous and Mental Disease, 188,* 622–624.

Davidson, J., Stein, D., Shalev, A., & Yehuda, R. (2004). Posttraumatic stress disorder: Acquisition, recognition, course, and treatment. *Journal of Neuropsychiatry Clinical Neuroscience, 16*(2), 135–147.

de Jong, J. M., Komproe, I. H., Van Ommeren, M., El Masri, M., Araya, M., Khaled, N., & Somasundaram, D. (2001). Lifetime events and posttraumatic stress disorder in 4 postconflict settings. *Journal of The American Medical Association*, *286*(5), 555–562.

Evenden, J. (1999). Impulsivity: A discussion of clinical and experimental findings. *Journal of Psychopharmacology, 13*(2), 180–192.

Ferrada-Noli, M., Asberge, M., & Ormstad, K. (1998). Suicidal behaviour after severe trauma Part 2: The association between methods of torture and of suicidal ideation in posttraumatic stress disorder. *Journal of Trauma Stress, 11*(1), 113–124.

Finklestein, M., Stein, E., Greene, T., Bronstein, I., & Solomon, Z. (2015). Posttraumatic stress disorder and vicarious trauma in mental health professionals. *Health and Social Work, 40*(2), e25–e31.

Fuller-Thomson, E., & Hollister, B. (2016). Schizophrenia and suicide attempts: Findings from a representative community-based canadian ample. *Schizophrenia Research & Treatment*, *Ahead of Publication*. doi:10.1155/2016/3165243.

Gladstone, G., Parker, G., Mitchell, P., Malhi, G., Wilhelm, K., & Austin, M. (2004). Implications of childhood trauma for depressed women: An analysis of pathways from childhood sexual abuse to deliberate self-harm and revictimization. *American Journal of Psychiatry, 161*(8), 1417–1425.

Graff, G. (2014). The intergenerational trauma of slavery and its aftermath. *The Journal of Psychohistory, 41*(3), 181–197.

Gvion, Y., & Apter, A. (2011). Aggression, impulsivity, and suicide behaviour: A review of the literature. *Archives of Suicide Research: Official Journal of the International Academy for Suicide Research, 15*(2), 93–112.

Gvion, Y., & Apter, A. (2012). Suicide and suicidal behaviour. *Public Health Reviews, 34*(2), 1–20.

Han, B., Kott, P. S., Hughes, A., McKeon, R., Blanco, C., & Compton, W. M. (2016). Estimating the rates of deaths by suicide among adults who attempt suicide in the United States. *Journal of Psychiatric Research, 77,* 125–133.

Herman, J. (1997). *Trauma and recovery*. New York: Basic Books.

Heron, M. (2007). *National vital statistics reports*. Retrieved from the Centers for Disease Control and Prevention http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_05.pdf.

Hougen, H. (1998). Physical and psychological sequelae to torture: A controlled clinical study of exiled asylum applicants. *Forensic Science International, 39,* 5–11.

Johnson, B. L. (2013). Hate crimes. In S. Loue (Ed.), *Mental health practitioner's guide to HIV/AIDS* (pp. 231–233). New York, NY: Springer.

Katz, C., Bolton, J., & Sareen, J. (2016). The prevalence rates of suicide are likely underestimated worldwide: Why it matters. *Social Psychiatry and Psychiatric Epidemiology, 51*(1), 125–127.

Kessler, R. C., Galea, S., Gruber, M. J., Sampson, N. A., Ursano, R. J., & Wessely, S. (2008). Trends in mental illness and suicidality after hurricane Katrina. *Journal of Molecular Psychiatry, 13*(4), 374–384.

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., & Nelson, C. B. (1995). Posttraumatic stress disorder in the national comorbidity survey. *Archives of General Psychiatry, 52*(12), 1048–1060.

Kessler, R. C., Sonnega, A., Bromet, E., Hughes, M., Nelson, C. B., & Breslau, N. (1999). Epidemiological risk factors for trauma and PTSD. In R. Yehuda (Ed.), *Risk factors for posttraumatic stress disorder* (pp. 23–59). Washington, DC: American Psychiatric Press.

Kilpatrick, D. (2000). *The mental health impact of rape*. Charleston, SC: Medical University of South Carolina.

Klonsky, E. D., & May, A. M. (2010). Rethinking impulsivity in suicide. *Suicide & Life-Threatening Behaviour, 40*(6), 612–619.

Kposowa, A. (2013). Association of suicide rates, gun ownership, conservatism and individual suicide risk. *Social Psychiatry and Psychiatric Epidemiology, 48*(9), 1467–1479.

Krysinska, K., & Lester, D. (2002). Suicide in the Lodz ghetto 1941–1944. *Polish Psychological Bullit, 33*(2), 21–26.

Krysinska, K., Lester, D., & Martin, G. (2009). Suicidal behaviour after a traumatic event. *Journal of Trauma Nursing, 16*(2), 103–110.

Larrance, R., Anastario, M., & Lawry, L. (2007). Health status among internally displaced persons in Louisiana and Mississippi travel trailer parks. *Annuals of Emergency Medicine, 49*(5), 590–601.

Lester, D. (2005). *Suicide and the Holocaust*. Hauppauge, NY: Nova Science.

Levine, S., Levav, I., Yoffe, R., Becher, Y., & Pugachova, I. (2016). Genocide exposure and subsequent suicide risk: A population-based study. *Public Library of Science, 11*(2), 1–16.

Lew, E., & Wetli, C. (1996). Mortality from Hurricane Andrew. *Journal of Forensic Science, 41*(3), 449–452.

Loncar, M., Meved, V., Jovanovic, N., & Hotujac, L. (2006). Psychological consequences of rape on women in 1991–1995 war in Croatia and Bosnia and Herzegovina. *Croatian Medical Journal, 47*(1), 67–75.

Manguno-Mire, G., Sautter, F., Lyons, J., Myers, L., Perry, D., Sherman, M., Glynn, S., et al. (2007). Psychological distress and burden among female partners of combat veterans with PTSD. *The Journal of Nervous and Mental Disease, 195*(2), 144–151.

Mann, J. J., & Malone, K. M. (1997). Cerebrospinal fluid amines and higher-lethality suicide attempts in depressed inpatients. *Biological Psychiatry, 41*(2), 162–171.

Matz, D., Vogel, E. B., Mattar, S., & Montenegro, H. (2015). Interrupting intergenerational trauma: Children of holocaust survivors and the third Reich. *Journal of Phenomenological Psychology, 46*(2), 185–205.

McDaniel, J. S., Purcell, D., & D'Augelli, A. R. (2001). The relationship between sexual orientation and risk for suicide: Research findings and future directions for research and prevention. *Suicide & Life-Threatening Behaviour, 31*(1), 84–105.

McIntosh, S., & Mata, M. (2008). Early detection of posttraumatic stress disorder in children. *Journal of Trauma Nursing, 15*(3), 126–130.

Miller, M., Azrael, D., & Hemenway, D. (2002). Household firearm ownership and suicide rates in the United States. *Epidemiology (Cambridge, Mass.)*, *13*(5), 517–524.

National Center for Injury Prevention and Control. (2003). *Costs of intimate partner violence against women in the United States*. Atlanta, GA: Centers for Disease Control and Prevention.

Nock, M. K., Borges, G., Bromet, E. J., Cha, C. B., Kessler, R. C., & Lee, S. (2008). Suicide and suicidal behaviour. *Epidemiologic Reviews, 30*(1), 133–154.

O'Donnell, S., Meyer, I. H., & Schwartz, S. (2011). Increased risk of suicide attempts among Black and Latino lesbians, gay men, and bisexuals. *American Journal of Public Health, 101*(6), 1055–1059.

Oquendo, M. A., Friend, J. M., Halberstam, B., Brodsky, B., Burke, A. K., Grunebaum, M. F., Malone, K. M., et al. (2003). Association of comorbid posttraumatic stress disorder and major depression with greater risk for suicidal behaviour. *American Journal of Psychiatry, 160*(3), 580–582.

Paolucci, E., Genius, M., & Violato, C. (2001). A metal-analysis of the published research on the effects of child sexual abuse. *Journal of Psychology, 135*(1), 17–36.

Pham, P. N., Weinstein, H. M., & Longman, T. (2004). Trauma and PTSD symptoms in Rwanda: Implications for attitudes toward justice and reconciliation. *Journal of the American Medical Association, 292*(5), 602–612.

Pico-Alfonso, M. A., Garcia-Linares, M., Celda-Navarro, N., Blasco-Ros, C., Echeburua, E., & Martinez, M. (2006). The impact of physical, psychological, and sexual intimate male partner violence on women's mental health: Depressive symptoms, posttraumatic stress disorder, state anxiety, and suicide. *Journal of Women's Health, 15*(5), 599–611.

Pompili, M., Lester, D., Leenaars, A. A., Tatarelli, R., & Girardi, P. (2008). Psychache and suicide: A preliminary investigation. *Suicide & Life-Threatening Behaviour, 38*(1), 116–121.

Rogers, H. O., & Turner, R. A. (2012). *Child abuse: Indicators, psychological impact and prevention*. New York: Nova Science Publishers Inc.

Sareen, J., Cox, B. J., Afifi, T. O., Stein, M. B., Belik, S. L., Meadows, G., & Asmundson, G. L. (2007). Combat and peacekeeping operations in relation to prevalence of mental disorders and perceived need for mental health care: Findings from a large representative sample of military personnel. *Archives of General Psychiatry, 64*(7), 843–852.

Saxe, G. N., Chawla, N., & van der Kolk, B. (2002). Self-destructive behaviour in patients with dissociative disorders. *Suicide & Life-Threatening Behaviour, 32*(3), 313–320.

Scurfield, R. M. (1993). Posttraumatic stress disorder in Vietman veterans. In J. P. Wilson & B. Raphael (Eds.), *International handbook of traumatic stress syndromes* (pp. 285–295). New York: Plenum Press.

Sharhabani-Arzy, R., Amir, M., Kotler, M., & Liran, R. (2003). The toll of domestic violence: PTSD among battered women in an Israeli sample. *Journal Interpersonal Violence, 18*(11), 1335–1346.

Simon, T., Anderson, M., Thompson, M., Crosby, A., & Sacks, J. (2002). Assault victimization and suicidal ideation or behaviour within a national sample of US adults. *Suicide & Life-Threatening Behaviour, 32*(1), 42–50.

Smith, L. E., Bernal, D. R., Schwartz, B. S., Whitt, C. L., Christman, S. T., Donnelly, S., & Kobetz, E. (2014). Coping with vicarious trauma in the aftermath of a natural disaster. *Journal of Multicultural Counseling and Development, 42*(1), 2–12.

Soloff, P. H., Lis, J. A., Kelly, T., Cornelius, J. R., & Ulrich, R. (1994). Risk factors for suicidal behaviour in borderline personality disorder. *The American Journal of Psychiatry, 151*(9), 1316–1323.

Somasundaram, D. J. (1993). Psychiatric morbidity due to war in Northern Sri Lanka. In J. P. Wilson & B. Raphael (Eds.), *International handbook of traumatic stress syndromes* (pp. 343–348). New York: Plenum Press.

Straus, M., & Gelles, R. (1990). Physical violence in American families: Risk factors and adaptations to violence. *The Canadian Journal of Sociology, 16*(3), 326–328.

Substance Abuse and Mental Health Services Administration (SAMSHA). (2014). *Results from the 2013 National Survey on Drug Use and Health: Summary of National Findings*. Rockville, MD. Retrieved from http://www.samhsa.gov/data/sites/default/files/NSDUHresultsPDFWHTML2013/Web/NSDUHresults2013.pdf.

Swogger, M. T., Van Orden, K. A., & Conner, K. R. (2014). The relationship of outwardly directed aggression to suicidal ideation and suicide attempts across two high-risk samples. *Psychology of Violence, 4*(2), 184–195.

Ulman, S., & Breckin, L. (2002). Sexual assault history and suicidal behaviour in a national sample of women. *Suicide & Life-Threatening Behaviour, 32*(2), 117–130.

Van Orden, K. A., Witte, T. K., Cukrowicz, K. C., Braithwaite, S. R., Selby, E. A., & Joiner, T. E., Jr. (2010). The interpersonal theory of suicide. *Psychological Review, 117*(2), 575–600.

Weiser, M., Kapara, O., Werbeloff, N., Goldberg, S., Fenchel, D., Reichenberg, A., …& Davidson, M. (2015). A population-based longitudinal study of suicide risk in male schizophrenia patients: Proximity to hospital discharge and the moderating effect of premorbid IQ. *Schizophrenia Research*, *169*(1–3), 159–164.

Wojnar, M., Ilgen, M. A., Czyz, E., Strobbe, S., Klimkiewicz, A., Jakubczyk, A., …& Brower, K. J. (2009). Impulsive and non-impulsive suicide attempts in patients treated for alcohol dependence. *Journal of Affective Disorders*, *115*(1–2), 131–139.

World Health Organization (WHO). (2012). *Suicide Rates Data by Country.* Retrieved from http://apps.who.int/gho/data/node.main.MHSUICIDE?lang=en.

World Health Organization (WHO). (2014). *Mental health: Suicide prevention.* Retrieved from http://www.who.int/mental_health/suicide-prevention/en/.

Wu, C., Liao, S., Lin, K., Tseng, M. M., Wu, E. C., & Liu, S. (2009). Multidimensional assessments of impulsivity in subjects with history of suicidal attempts. *Comprehensive Psychiatry, 50*(4), 315–321.

Yang, B., & Clum, G. A. (2000). Childhood stress leads to later suicidality via its effects on cognitive functioning. *Suicide & Life-Threatening Behaviour, 30*(3), 183–198.

Young, M. D., (1998). Collective trauma: Insights from a research errand. *The American Academy of Experts in Traumatic Stress, Inc.* Retrieved from http://www.aaets.org/article55.htm.

Chapter 8
Suicide Terrorism

Mark Dechesne and Bryn Bandt-Law

Suicide Terrorism

Suicide is a puzzling and intellectually challenging phenomenon. Do individuals who attempt or complete suicide constitute an anomaly—an exception from the human condition and our natural fear of death? The complexities of suicide tasks one to contemplate life, its meaning, and our ultimate existential demise. The emergence of suicide terrorism in recent decades has strained our intellectual capacities even further (Crenshaw, 2007; Kumar & Mandal, 2014; Pape, 2003; Weinberg & Pedahzur, 2010). It adds a strategic dimension to suicide (Hoffman & McCormick, 2004; Pape, 2003, 2005). Suicide terrorists are willing to kill themselves and others in the service of a perceived greater cause, one that is typically associated with battling an oppressive force (Pape, 2005; Victoroff, Adelman, & Matthews, 2012). The willingness to engage in this act oftentimes only occurs after diligent organizational planning and/or sequential stages of mental preparation (Hafez, 2003). Suicide terrorism is on the rise and countering it constitutes a daunting challenge (Horowitz, 2015). Suicide terrorism enables "terrorists" to achieve what other tactics cannot: it maximizes penetration through the target's defences, as well as exposure, attention, confusion, and fear among the general public (e.g. Hoffman & McCormick, 2004; Pape, 2003). Given these tactical advantages of suicide terrorism, its only apparent drawback from a military perspective is that it necessitates an individual to sacrifice his/her life for the tactical and strategic interests of the militant

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organization. From an organizational perspective, however, suicide terrorism may also elicit considerable risk and potential damage (Kalyvas & Sánchez-Cuenca, 2005). This includes the loss of organizational reputation because it is considered a savage militant tactic, as well as the loss of qualified and devoted members of the organization. Suicide terrorism should thus best be considered the outcome of a risk/benefit analysis of the potential advantages of suicide terrorism relative to its potential damage (Weinberg & Pedahzur, 2010). The present contribution seeks to describe the multi-level factors and processes that encourage acts of suicide terrorism. It will review academic insights regarding the nature of the phenomenon, trends and statistics regarding the development of suicide terrorism, and the organizational, contextual, individual, and motivational factors involved.

What Is Suicide Terrorism?

There is a long history of reflection on the definition of terrorism (Hoffman, 2006; Schmid & Jongman, 1988), and the additional facet of "suicide" contributes to these definitional challenges (Crenshaw, 2007). First, terrorism is typically defined by its violence or threat of violence, and its specific motivational dynamics related to the social, religious, or ideological objectives it aims to achieve (Hoffman, 2006). Furthermore, several analyses emphasize the importance of the communicative aspects of terrorism (Schmid & De Graaf, 1982). It can invoke terror among potential targets and the community. Jenkins (1975) has famously stated that "terrorists want a lot of people watching, not a lot of people dead" (p. 15). "Terrorism" is sometimes argued to necessitate the sole involvement of non-state actors (while state actors may terrorize, it does not make them terrorists) and the targeting of civilians. It can also denote specific strategy and tactics. Terrorism is sometimes considered an insurgency tactic used by an underlying party against a stronger adversary (Forest, 2007). Definitions oftentimes differ in the number of elements they incorporate. For academic empirical analysis, broader definitions are more practical, while complex definitions come with such specific descriptions that it becomes impossible to identify general trends (Schmid, 1992). One of the broadest definitions has been formulated by the US Department of Defense, describing terrorism as:

> The calculated use of unlawful violence or threat of violence to inculcate fear; intended to coerce or to intimidate governments or societies in the pursuit of goals that are generally political, religious, or ideological objectives. (Hoffman, 2006, p. 31)

In a sense, even when we are not explicitly dealing with suicide terrorism, terrorism has a sacrificial element. Kruglanski et al. (2014), for example, note that terrorism and its preceding radicalization and associated extremism can be understood as an increasing commitment to particular means to achieve a social, political, or religious goal. A single means (i.e. the use of violence in the case of terrorism) is considered the only means to achieve the goal, and alternative options, even those

with greater prospect of achieving the goal (e.g. participation in the democratic process) become less attractive simply because of this perceived unifinal relationship between the violent means and the goal. The terrorist group essentially sacrifices its potential to bring about social, political, or religious goal by its arduous attachment to violence as the only means to achieve this goal.

In the definitions that explicitly deal with the phenomenon of suicide terrorism, several additional complications in its description have come to the forefront. There is even controversy on whether the concept has any meaning (see Crenshaw, 2007 for review). To begin, there is conceptual concern as to whether suicide terrorism should be considered an act of sacrifice. Pape (2003), for example, focuses his analysis of suicide terrorism primarily on its strategic implications; the use of suicide is advantageous despite its potential costs. According to Pape (2003), suicide terrorism is the most aggressive form of terrorism aimed at coercion of an opponent, and more than any other terrorist tactic, able to instil fear on the target population. However, Pape's analysis precedes occurrences of Fedayeen or "Mumbai style" attacks (Dechesne, 2014). In "Mumbai style", the perpetrator continues to kill and wreak havoc until he or she is killed by security forces. The level of fear and damage these "Mumbai Style" attacks inflict is likely to be higher because the perpetrator, unlike in suicide terrorism, can continue to kill for a prolonged period of time. These attacks also use coercion and punitiveness through continuous attacks, perhaps to a greater extent than suicide terrorism.

A key difference between "Mumbai style" and suicide terrorism lies in the motivation behind the attack, which is also a contentious issue in the context of suicide terrorism (see Crenshaw, 2007). Although both "Mumbai style" perpetrators and suicide terrorists know they will—almost inevitably die as a result of the attack, there is a conceptual difference. "Mumbai Style" perpetrators will seek to avoid death as long as possible, whereas suicide terrorists will actually seek to approach death. There are, however, contentious debates concerning the motivation of suicide terrorists and their "willingness to die" (Gambetta, 2005). Is it only suicide terrorism if the perpetrator himself/herself has a willingness to die? In many instances, this is difficult to determine. Individuals often become suicide terrorists after a prolonged period of indoctrination and in the face of economic or socio-cultural circumstances that promote the perception that suicide terrorism is necessary (Khosrokhavar, 2005). Furthermore, some psychologists suggest that "free will's" influence over individual's actions is limited (Wegner & Wheatley, 1999). Even though an individual may claim to act out of free will (perhaps in the service of a higher goal), psychologists may propose that this claim is more a justification of the action rather than a cause (Nisbett & Wilson, 1977).

Culture represents a factor that further complicates the challenge of defining suicide terrorism. Some researchers use the term "Martyrdom" or even more specifically *Ishtihad* ("martyr") to emphasize the culture-specific meaning of an act of suicide terrorism (Mukherjee, Kumar, & Mandal, 2014). The cultural context of a suicide terrorist attack is important to determine whether the perpetrator is actively pursuing suicide. Cultural narratives may sublimate suicide into an act that grants an individual considerable spiritual rewards and a long-lasting status as hero within

one's community (Juergensmeyer, 2005). The sacrifice may not be experienced as death, but as an opportunity for a better life and an opportunity for symbolic immortality (Pyszczynski, Solomon, & Greenberg, 2003). Although the definition of this better life may vary from culture to culture, virtually all cultures come with narratives that define special circumstances under which self-chosen death is imbued with heroic connotations. James (1969), one of the founding fathers of psychology, has eloquently described it:

> Mankind's common instinct for reality has always held the world to be essentially a theatre for heroism. In heroism, we feel, life's supreme mystery is hidden. We tolerate no one who has no capacity whatever for it in any direction. On the other hand, no matter what a man's frailties otherwise may be, if he be willing to risk death, and still more if he suffer it heroically, in the service he has chosen, the fact consecrates him forever. (p. 330)

Statistics and Trends in Suicide Terrorism

Various databases are publically available that allow to track trends in suicide terrorism over time. Three primary sources of information on terrorist incidents appear to converge that suicide terrorism has risen dramatically since the terrorist attacks in New York City and Washington DC of 11 September 2001. In particular, the RAND Database of Worldwide Terrorist Incidents (RAND, 2016), the Chicago Project on Security and Terrorism (CPOST, 2016), and the Global Terrorism

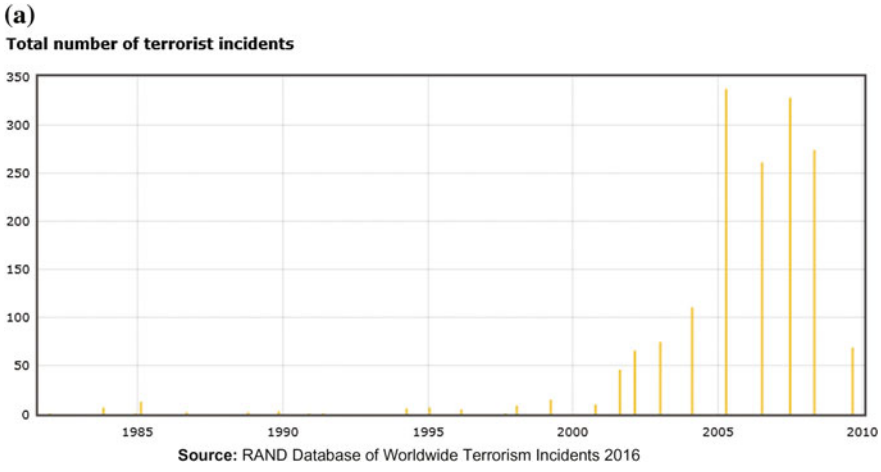
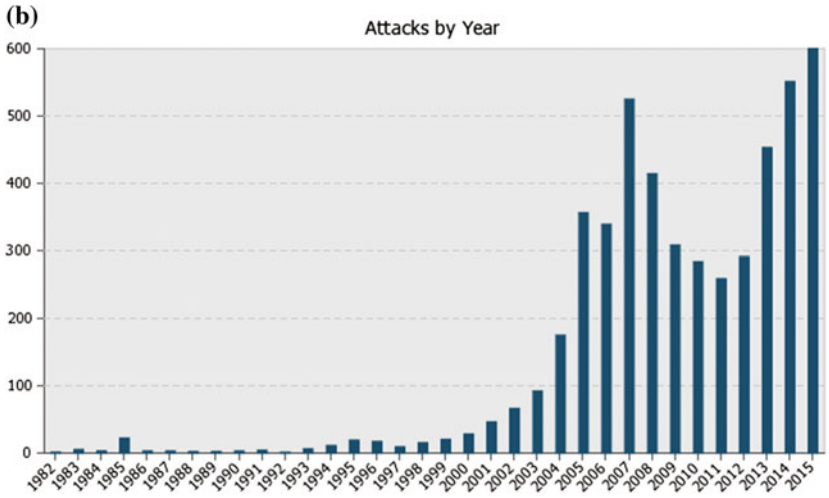
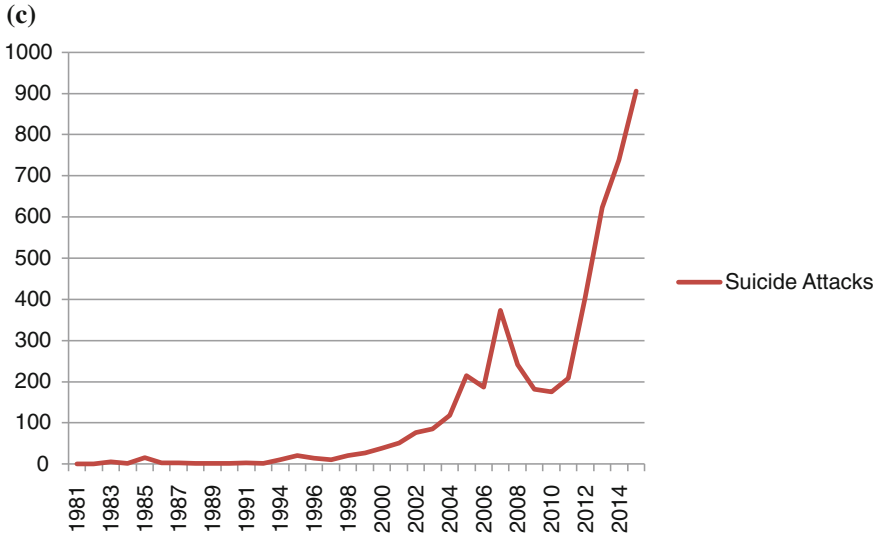


Fig. 8.1 **a** Annual frequency of suicide attacks per year according to the RAND Database of Worldwide Terrorism Incidents. *Source* RAND Database of Worldwide Terrorism Incidents, http://www.rand.org/nsrd/projects/terrorism-incidents.html. **b** Annual frequency of suicide attacks per year according to the Chicago Project on Security and Terrorism Database. *Source* Chicago Project on Security and Terrorism, https://cpost.uchicago.edu/. **c** Annual frequency of suicide attacks per year according to the Global Terrorism Database. *Source* Global Terrorism Database, http://www.start.umd.edu/gtd



Source: Chicago Project on Security and Terrorism 2016



Source: Global Terrorism Database 2016

Fig. 8.1 (continued)

Database (NC-START, 2016) all show a clear upward trend since 2001 with peaks in 2006–2007 (see Fig. 8.1a–c).

The Chicago Project and the Global Terrorism Database (GTD) also show a spike in suicide terrorism in the most recent years. Closer inspection using the GTD

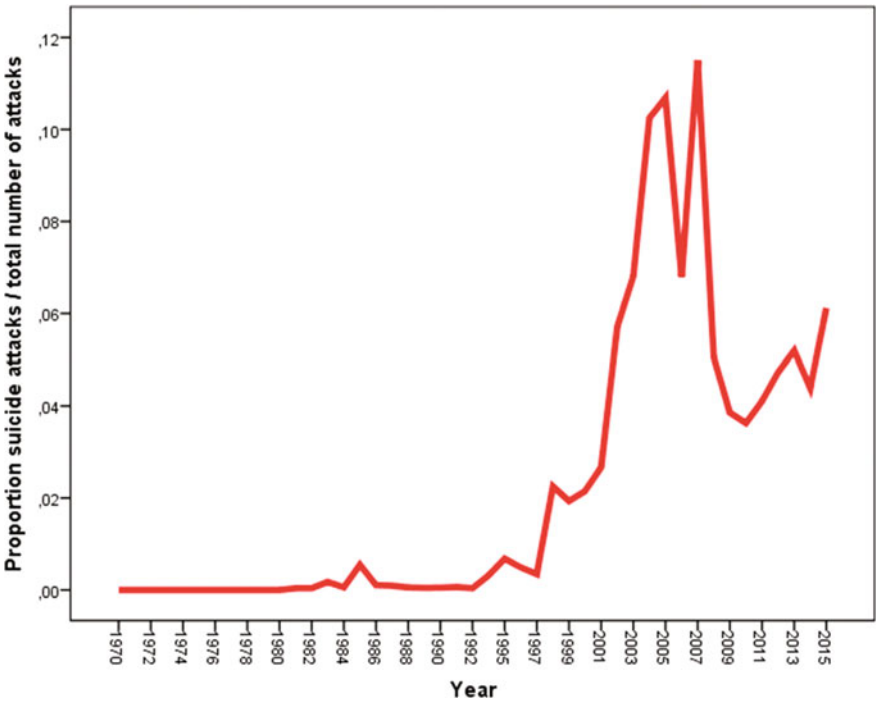


Fig. 8.2 Proportion of suicide attacks relative to total number of attacks per year according to the global terrorism database. *Source* Global Terrorism Database 2016, http://www.start.umd.edu/gtd

demonstrates that the relative importance of suicide terrorism has not increased in recent years (see Fig. 8.2).

The conflicts in the Middle East, Syria and Iraq have caused a stark increase in terrorism in general. Although many organizations involved in the conflict, including the notorious terrorist group Islamic State (IS) use suicide terrorism as part of their repertoire, closer inspection of the number of suicide attacks relative to the total number of attacks suggests that suicide terrorism is not on the increase relative to terrorism in general.

Figure 8.3 provides an overview of the geographical spread of suicide terrorism. The Middle East, Iraq and Syria in particular, Afghanistan and Pakistan, Nigeria, Sri Lanka, and Somalia are hotbeds for suicide terrorism.

Table 8.1 provides an overview of the countries that have been affected the most by suicide terrorism (source: GTD). Iraq, Afghanistan, Pakistan, Nigeria, and Syria are attacked most frequently.

Table 8.2 illustrates the relative occurrence of suicide attacks relative to the total number of attacks within a particular country. A substantial number of countries in Western Africa can be found in these rankings. Of interest, Morocco, Mauritania, Chad, Cameroon, Mali, Niger are all part of what the French Minister of Defense, Le Drain (2014), termed the potential "highway … where jihadist groups between Libya

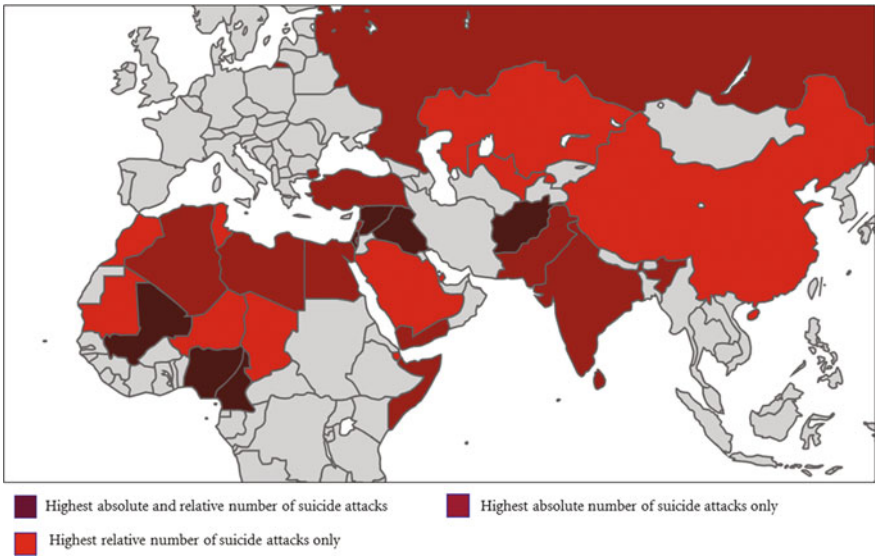


Fig. 8.3 Geographical spread of suicide attacks. *Source* Global Terrorism Database 2016, http://www.start.umd.edu/gtd

Table 8.1 Countries' most affected by suicide terrorism

Country	# of suicide attacks
1. Iraq	1815
2. Afghanistan	982
3. Pakistan	448
4. Nigeria	211
5. Syria	206
6. Yemen	151
7. Israel	129
8. Sri Lanka	114
9. Somalia	104
10. Russia	79
11. West Bank and Gaza Strip	61
12. Lebanon	60
13. Libya	44
14. Turkey	44
15. India	32
16. Egypt	31
17. Algeria	29
18. Mali	28
19. Cameroon	23
20. Saudi Arabia	17

Source Global Terrorism Database (NC-START, 2016), http://www.start.umd.edu/gtd

Table 8.2 Suicide attacks relative to the total number of attacks

Country with rank	Suicide attacks/total number of attacks	Suicide attacks	Total attacks
1. Morocco	0.31	11	36
2. Uzbekistan	0.29	6	21
3. Mauritania	0.17	3	18
4. Chad	0.16	13	80
5. Qatar	0.14	1	7
6. Syria	0.14	206	1468
7. Cameroon	0.13	23	180
8. Afghanistan	0.10	982	9690
9. Iraq	0.10	1815	18770
10. Saudi Arabia	0.09	17	193
11. Mali	0.09	28	319
12. Kazakhstan	0.08	2	24
13. Tunisia	0.08	7	92
14. Nigeria	0.07	211	2888
15. China	0.07	17	242
16. Niger	0.07	8	116
17. Finland	0.07	1	15
18. Israel	0.06	129	2085
19. Yemen	0.06	151	2598
20. Djibouti	0.05	1	21

Source Global Terrorism Database (NC-START, 2016), http://www.start.umd.edu/gtd

and the Atlantic Ocean can rebuild themselves, which would lead to serious consequences for our security" (in Bacchi, 2014). Uzbekistan and Kazakhstan are also on the list and appear to provide a similar highway for jihadist groups into Russia.

The trajectories of annual frequencies of suicide terrorist attacks per country can provide further insight into the structure of suicide terrorism. These trajectories demonstrate that there are considerable similarities across specific countries. When subjected to Factor Analysis, four clusters of countries can be identified, with countries in each cluster sharing a similar pattern of suicide terrorism over time.

Figure 8.4 shows these clusters, with annual suicide terrorism rates per cluster. The first cluster groups together Iraq, Pakistan, Afghanistan, Somalia, Nigeria, Yemen, Libya, and Syria. The second cluster groups Russia, Israel, West Bank and Gaza, and India, and the third cluster brings together Pakistan, Sri Lanka, and Russia. The fourth cluster groups together Turkey and Sri Lanka. When the country incident data are averaged per cluster and plotted on a timeline from the early 1980s (when suicide terrorism first appeared), the four clusters appear to represent distinct "waves" of suicide terrorism. We first see activity in the 1990s in Turkey (by the PKK) and Sri Lanka (by the LTTE) (Cluster 1). Then, the second cluster illustrates heightened activity at the turn of the millennium. There was an increase in suicide terrorism in Israel, the West Bank, Russia (related to Chechnya), and India

Cluster 1:	Cluster 2:	Cluster 3:	Cluster 4:
Iraq	Russia	Russia	Turkey
Pakistan	Israel	Pakistan	Sri Lanka
Afghanistan	West Bank and Gaza	Sri Lanka	
Somalia	India		
Nigeria			
Yemen			
Libya			
Syria			

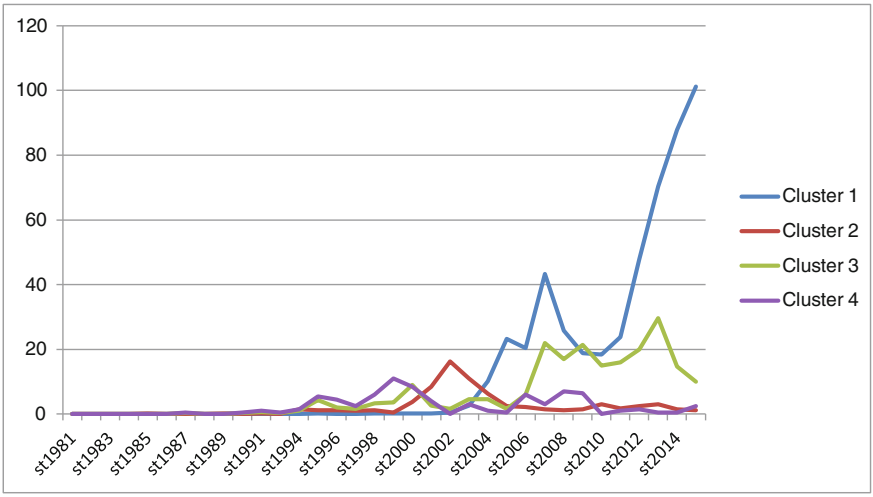


Fig. 8.4 Clusters of countries most affected by suicide terrorism with annual attack rates per cluster. *Source* Global Terrorism Database (NC-START, 2016), http://www.start.umd.edu/gtd

(most notably Kashmir). The third cluster comprising activity in Pakistan, Russia, and Sri Lanka illustrates elevation in the early 2000s (primarily in Sri Lanka, and Russia) and shows a surge in 2007/2008 (now in Pakistan, Russia, and Sri Lanka). Around 2004, we see the emergence of the cluster that is now widespread and involved parallel episodes of suicide terrorism in Iraq, Pakistan, Afghanistan, Somalia, Nigeria, Yemen, Libya, and Syria. It also demonstrates a recent dramatic increase in the number of suicide attacks in Iraq, Syria, Afghanistan, Yemen, Somalia, and Nigeria.

The "Global Suicide Attack Network"

These "four waves" converge with the analysis by Acosta and Childs (2013) of "the Global Suicide-Attack Network". The authors cite from the documentary *The Cult of the Suicide Bomber* (Baer, 2005) and narrate the evolution of suicide terrorism

from its alleged inception during the early days of the Iran–Iraq War (1980–1988). Acosta and Childs' (2013) key argument is that suicide terrorism has been developed, used, and exported by specific networks.

When a 13-year-old Iranian volunteer Mahammed Hussein Fahmidah jumped in front of an Iraqi tank while detonating collected hand grenades at the Battle of Khorramshahr (1980), it became a pivotal event in the evolution of suicide terrorism. It was soon hailed by the Iranian regime as exemplification Shia's martyrdom. As the story attracted hundreds of thousands to follow in Fahmidah's footsteps, a new paramilitary force was created that consisted of very young and old volunteers (Khosrokhavar, 2005). They specialized in missions characterized by extremely low chances of survival, such as human mine-sweeping missions. Self-sacrifice to achieve strategic or tactical objectives thus became an accepted and revered component of warfare. This modus operandi also soon proved to be effective outside of the Iran–Iraq War. In Beirut multiple suicide bombers detonated trucks in the US Embassy and in military barracks of US and French marines. They killed over 300 people, and eventually causing the USA to retreat from Lebanon. The Civil War in Lebanon of the 1970s and 1980s served as a significant testing ground for suicide terrorism. Here, suicide terrorism was shown to achieve the same objectives that technologically advanced armies could achieve through airpower (cf. Baer, 2005). It brought forth death and destruction far behind the front line, and the targets had no opportunity for self-defence. For these purposes, terrorist organizations from around the world soon flocked to South Lebanon and nearby Syria to learn about suicide terrorism.

Acosta and Child (2013) identify various networks that were involved in the proliferation of suicide terrorism. Apart from the earliest network consisting of Hezbollah, the Syrian Nationalist Socialist Party, Jammoul, the Syrian Ba'ath Organization, and small parties involved in the Civil War in Lebanon, the network appears related to the four clusters described above. In the early 1990s, the Sri Lankan LTTE shows up as an organization using suicide terrorism that is separate from the earlier identified network related to the Lebanese Civil War. The LTTE is subsequently identified to have formed an alliance with the PKK. The connection between the LTTE and the PKK is reflected in parallel activity in Sri Lanka and Turkey in the mid-1990s (Cluster 4 in Fig. 8.4). Also in the early 1990s, Acosta and Child identify a new network consisting of Hamas and the Palestinian Islamic Jihad (PIJ), who were educated by Hezbollah on the practical and ideological elements of suicide terrorism. These groups would soon set off attacks in Israel, West Bank, and Gaza, with later activity in Chechnya (Cluster 2 in Fig. 8.4). Around 2000, Hamas, PIJ, and Fatah form a suicide attack network, while a second separate network is also identified, consisting of Al-Qaida, Lashkar-e-Taiba, and Jaish Mohammed. This latter network expands to include the Taliban and Chechnyan rebels and to evolve into Cluster 3 in Fig. 8.4. Around 2003, the occupation of Iraq by Western forces instigates further suicide terrorism in Iraq, most notably inspired by the Al-Qaida in Iraq, the forerunner of the Islamic State. At the end of the first decade of the twenty-first century, we see essentially two networks. In Cluster 1, there is the Islamic State, a central node, which is clustered with Al-Qaida in the Arabic

Peninsula (active in Yemen), As-Shabab (in Somalia), Al-Qaida in the Islamic Maghreb (in north-western Africa), Boko Haram (Nigeria), and rebels in Libya, comprising Cluster 1 in Fig. 8.4. Cluster 2 groups the Taliban, the Pakistani Taliban, and various other Pakistani-based terrorist groups together (Fig. 8.4). While these two networks appear to be linked via Al-Qaida from 2005 to 2009, in more recent years, Al-Qaida appears to have lost its position as the central node within the global suicide network.

The analysis of Acosta and Child (2013), combined with the patterns of country clusters shown in Fig. 8.4, provide important insights into the function of suicide terrorism. It demonstrates that suicide terrorism primarily appears to be a weapon of war used by specific organizations that are part of global suicide networks. Second, these suicide networks appear to have come in various waves. The Iran–Iraq war of the 1980s served as pivotal event that led to the implementation of suicide terrorism as a key military tactic in the Civil War in Lebanon. Its success and technology in Lebanon would later be shared with separatists groups such as the LTTE and the PKK (Wave 1), while Sunni groups, most notably Hamas, PIJ, and Fatah adopted the tactic to influence events in Israel, Gaza, and the West Bank (Wave 2). Currently, its main users appear to comprise two distinct networks. One network comprises the terrorist groups that are primarily active in Pakistan, such as the Taliban and the Pakistani Therik-e-Taliban as main forces. The other network has been responsible for an unprecedented number of attacks and is active throughout the Islamic world. This network includes ISIS, Boko Haraam, As Shabab, Al-Qaida in the Islamic Maghreb, and Al-Qaida in the Arabic Peninsula (Wave 4).

Although the networks described by Acosta and Child seem to generally overlap with the clusters identified in Fig. 8.4, there are also notable discrepancies between the network analysis and the clustering of Fig. 8.4. Sri Lanka and Russia, for example, occur twice in the clustering. To the extent that the clustering reflects activity by a specific network in specific countries, the finding that suicide terrorist activity in Sri Lanka coincides with suicide terrorist activity in Pakistan and in Chechnya suggests that the same network carries out the attacks in Sri Lanka and Pakistan and Chechnya. Similarly, the finding that suicide terrorist activity in Russia (related to Chechnya) occurred not only in a cluster with Israel, Gaza, the West Bank, and India, but also in a cluster together with Pakistan and Chechnya is not easily explained by the current (public) understanding of suicide networks and their operations. Indian readers may be curious about the occurrence of suicide terrorism in India alongside suicide terrorism in Israel, Gaza, and the West Bank. Further research is needed to elucidate these findings.

Suicide Terrorism "Firms"

The idea central to Acosta and Child's notion of global suicide attack network is that suicide terrorism is essentially an organizational phenomenon. It can be considered what Iannaccone (2006) has termed a "firm" with distinct inputs,

productions, and outputs (see also Hafez, 2006). On the organizational level, the benefits of suicide attacks relative to other forms of attacks are abundant. Suicide terrorist are more difficult to detect and to defend against. After all, it is a considerable challenge to deter individuals who are ready to die (Pape, 2003). Moreover, suicide attacks demonstrate devotion to the cause and are therefore more likely to instil fear among the opponents and the general public. Also, crafting a suicide mission, from recruitment to preparation, to execution, shows mastery of the highest valued skills among terrorist organizations. This ensures the respect of rival terrorist organizations (Bloom, 2005).

On a practical level, suicide terrorist attacks create considerably more human casualties than non-suicide terrorist attacks (Hoffman & McCormick, 2004). The GTD suggests that in the top 15 countries most heavily targeted by suicide terrorists, the attacks are highly efficient and successful. On average, these suicide attacks kill 9.28 people and wound 20.08 people ($N = 4075$), whereas non-suicide attacks kill 1.92 people and wound 3.07. This suggests it is beneficial for organizations to utilize suicide terrorism. There are, however, also costs associated with the use of suicide terrorism. Iannaccone (2006) argues that potential threats of capture, imprisonment, or execution force suicide terrorist organization to "adopt internal structure that are larger, more complex, and more vertically integrated than would otherwise be efficient" (p. 13). Suicide terrorist organizations can, thereby, be characterized by their complex structure. Iannaccone (2006), further argues that this complexity also applies to the organization's inputs, such as weaponry and explosives that need to be clandestinely acquired through complex and costly channels. Also, the furtive natures of manufacturing suicide attacks require vertical integration, which is the integration of production processes within a single organization. This leads to various specialized subunits and cells. Iannaccone (2006) notes that a feature of suicide terrorism production involves the social processes and indoctrination that transforms a normal individual into someone who is willing to die for the organization's cause. Careful recruitment, interaction, and training, only maintained and operated by clear social boundaries, significant pressure exerted by the group, heavy penalties for disobedience, and a strong presence of leadership, are essential ingredients of suicide terrorist organizations (Post, Sprinzak, & Denny, 2003). Iannaccone (2006) identifies tenants of organizational design that are relevant to understanding the successes and failures of suicide terrorist organizations. An organization that expands may not only develop greater power and professionalism, but may also be easier to infiltrate and engage free-riders who are weakly tied to the cause. The optimal size of the organization therefore should be considered an important strategic concern. Competition is a further strategic concern. Other organizations may enter the same "market" by claiming attacks and trying to outbid the organization.

The Broader Social Context

The foregoing organizational characteristics apply to all terrorist organizations, not just those who are involved in suicide terrorism. There appears to be, however, only a limited number of terrorist organizations that actually have adopted suicide terrorism as a modus operandi (Kalyvas & Sánchez-Cuenca, 2005). Bloom and Horgan (2008), among others, describe how the IRA in Northern Ireland considered "proxy bombs", which involves the coercion of an individual (e.g. by threatening relatives) to drive a car with explosives to particular designated areas. It should be noted that "proxy bombing" is considered atactic separate from suicide terrorism, because in suicide terrorism (at least theoretically) the individual is assumed to partake in the attack on voluntary basis. But "proxy bombing" is mentioned here because it led to considerable resentment among important stakeholders and constituency, which led the organization to abandon the tactic (Moloney, 2003). In other social contexts, however, suicide terrorism is oftentimes part of a cult of martyrdom and is valued and revered within a cultural context (Hafez, 2007; Khosrokhavar, 2005; Pedahzur, 2006; Post, 2005). What factors contribute to the condoning of suicide attacks by this broader social context?

The Role of Religion Religion is often denoted as an important contributing factor for suicide terrorism (Juergensmeyer, 2005; Stern, 2003). Iran's leadership, for example, was quick to claim Fahmideh's sacrifice in the Iran–Iraq War as an expression of Shia Martyrdom (Khosrokhavar, 2005). Furthermore, statistics indicate that the vast majority of terrorist attacks are carried out in the name of religion, particularly Islam (Hafez, 2003). Facets of religion can be manipulated to instigate the use of suicide terrorism (Hafez, 2007). Religious organizations can claim rewards for the self-sacrifice to be obtained in the hereafter (the promise of virgins in the afterlife), whereas secular organizations may be more reluctant to do so because secularism lacks a clear conception of the afterlife (Juergensmeyer, 2005). Moreover, suicide terrorism is indicative of extreme commitment a particular cause (Kruglanski, Chen, Dechesne, Fishman, & Orehek, 2009). Such radical commitment aligns with extremist ideology and faith represented by violent religious organizations. Pape (2003), however, argues that nationalism is the root of suicide terrorism, although it can be infused with elements of religious ideology. He notes that separatists movements, in particular the LTTE and the PKK, who espoused strictly secular world views, were among the first to use suicide terrorism. Upon the perception of a foreign occupancy, suicide terrorism may become a viable strategy to scare the foreign occupant and foremost, to strike targets that would be impossible to reach without operatives willing to consider a mission from which there will not be a return or without an air force.

Martyrdom Cults Even in the absence of a specific religious motivation, suicide bombers can still participate in a Cult of Martyrdom that contribute to suicide terrorism (Baer, 2005; Pedahzur, 2006). These cultic ideologies can be utilized to justify and glorify suicide terrorism (Khosrokhavar, 2005). There are oftentimes rituals and ceremonies that portray suicide terrorists as heroic martyrs. Kruglanski

et al. (2009) suggest that such ideological convictions espouse to address perceived injustices one's group has suffered by attacking the culprit responsible. Suicide terrorism is perceived as legitimate way to correct such misdeeds. Furthermore, within secular cults of martyrdom the suicide attacker will be highly valued and revered. The LTTE, for example, provided its suicide squads, the "Black tigers", with special privileges, and only allowed the most loyal and skilled to be the members of these squads. The documentary The Cult of the Suicide Bomber (Baer, 2005) provides graphic examples of the ways in which suicide bombers are celebrated and revered. It depicts a shrine in which Hezbollah commemorate its suicide bombers and a popular festival with a parade for Hamas suicide bombers who are received with applause.

Socio-economic and Political Conditions Socio-economic and political conditions also contribute to the acceptance and spread cultic martyrdom ideologies, which further encourage suicide terrorism. Income disparities, economic instability, displacement, and a prolonged period of war can invoke the sense of relative deprivation and perceived injustices at the hands of another group, tribe or nation (Atran, 2003; Hafez, 2003). This legitimizes the use of violence against the out group to remedy and avenge the culprit's maltreatment and oppression. Socio-economic conditions may also directly contribute to the appeal of joining organizations that use suicide terrorism. Rarely do these organizations specialize only in suicide terrorism. Organizations such as Hezbollah, Hamas, the LTTE, and PKK also provide services to the communities they claim to represent, services in the form of food, schooling, and monetary compensation for work. Poverty, unemployment, and lack of educational opportunities may thus be considered contributing factors to the appeal of joining (or having children joining) terrorist organizations (Benmelech, Berrebi, & Klor, 2012). Krueger and Malečková (2003), however, found that members of Hezbollah tended to be better educated and financially secure than non-members. But these findings not necessarily denounce the poverty–terrorism link. A terrorist organization may specifically recruit better educated individuals, as they may be more skilled to carry out attacks (Benmelech & Berrebi, 2007). Moreover, the higher levels of education may reflect education granted to its members by the terrorist organization. Similarly, higher income among members of terrorist organizations may reflect financial compensation by the organization.

Individual Psychology

Organizations that use suicide terrorism take advantage of these cultural and social factors to recruit and persuade individuals to die for them. At the moment one joins an organization, it has yet to be decided whether he/she qualifies for a suicide bombing operation. What Horgan (2005) has aptly noted about the psychology of terrorism in general, then, seems to also apply to the psychology of suicide bombers: it is a matter of becoming, more than about being. These individuals cannot be

reduced to the pathological outliers of society who are innately capable of committing horrendous acts of violence. Rather, becoming a suicide bomber is a complicated, dynamic process that is influenced by culture, education, social interactions, and personality and character dispositions (Bloom, 2009).

Trajectories of Suicide Bombers In one of the earliest publications that reported on first-hand interviews with 35 incarcerated suicide terrorist, Post et al. (2003) provide a detailed account of the various stages the interviewees underwent before engaging in an unsuccessful attack and becoming incarcerated. They interviewed both religiously motivated and more secularly oriented suicide terrorists. Their responses shed light on the numerous factors that contribute to the development of a suicide terrorist.

Early Socialization The authors found little evidence that parental attitudes and ideology directly contribute to the formation of suicide terrorists. Although some of the interviewed terrorists had politically active parents, the majority of interviewees were not influenced by their parents' political involvement. Post et al. (2003) do note, however, that most of the interviewees grew up in politically active villages or refugee camps.

Peer Influence Post et al. (2003) observed that the most important influence in the decision to join the terrorist organization was the interviewees' peer group. Friends, schoolmates, or members of the same community, youth club, or mosque were primarily responsible for introducing and encouraging the suicide bomber to join the organization, and oftentimes joined themselves. Individuals were also primarily recruited by friends and relatives. The role of peers in the recruitment is also a central theme in e.g. Sageman's (2008) analysis of "terror networks in the twenty-first century".

Merging of Organizational Goals and Individual Identity After the new recruits have entered the organization, the central aim of the organization is to have the new recruits fully committed to the cause. Post et al. observe that the merger of organization and individual constitutes the central theme in the indoctrination and training process. The individual member learns the legitimacy of the mission while social and career opportunities outside of the organization are gradually cut-off. The individual engages in acts of terror during the training with an audience witnessing the act, and before carrying out the attack the suicide bomber leaves a public message. These functions not only provide a justification for the organization's mission, but also place immense pressure on the individual because he/she will experience shame and ostracization if he/she fails to engage in the attack. They create a moment of no-return for the individual, which increases the likelihood of attack.

Traits of Suicide Bombers Give the limited size of the population of suicide bombers and the difficulty of accessing them, it is no surprise that limited research is available to identify distinct personality traits associated with suicide terrorism. The idea that suicide terrorism is primarily instigated by organizations rather than by individual initiative further makes attempts to identify suicide bombers on the basis of individual traits unlikely to succeed. Indeed, the notion that individual psychological characteristics can account for involvement in terrorist organizations is controversial in the psychology of terrorism in general, and this also applies to

the specific case of suicide terrorism. Several authors have considered gender as an individually distinguishing feature. Merari, Diamant, Bibi, Broshi, and Zakin (2009) are the only researchers who have attempted to systematically identify psychological traits associated with suicide terrorists.

Gender Although the vast majority of suicide bombers are male, there are several cases of female suicide bombers. The LTTE, the PKK, and Chechen insurgents have all been known for their incorporation of women into the organization's rank including the entrance into the elite group of suicide bombers. Bloom (2011) identifies practical and social reasons for the involvement of women. On a practical level, women may be less suspect of having hostile intent and can use their dress to more easily hide explosives. Female suicide bombers may emerge when a society considers the fate of women to be intrinsically tied to their husbands, and especially in war zones with many male casualties, becoming a suicide bomber may be the only way for widows of deceased soldiers to assert themselves (Speckhard & Ahkmedova, 2006).

Ego Strength, Personality Style, Suicidal and Depressive Tendencies, PTSD, and Psychopathic Tendency In a very rare systematic investigation of the personality characteristics of (incarcerated) suicide terrorists, Merari et al. (2009) compared suicide terrorists to organizers of suicide terrorism and to a control group of prisoners who were convicted for non-suicidal political violence. Findings show that relative to controls, the suicide terrorists exhibited lower ego strength and organizers exhibited higher ego strength, respectively, indicating lower and higher ability to efficiently cope with stress. Furthermore, the suicide bombers exhibited higher levels of personality disorders related to anxiety and tension (dependency and avoidance in particular) whereas organizers showed greater incidence of personality disorders associated with impulsivity and emotional instability in particular. Additionally, there were indications of heightened, but subclinical, suicidal tendencies among the group of suicide bombers. There were also some indications of heightened depression and PTSD among this group. However, the relatively small sample and the circumstances under which the study was conducted warrant caution regarding the generality of these findings.

Individual- and Group-Level Motivational Dynamics

The foregoing analysis primarily emphasizes the factors that contribute to organization's use of suicide attacks and factors that promote individuals to carry them out. But these factors do not necessarily form a unified perspective of why suicide terrorism occurs. Kruglanski et al. have recently formulated a "significance quest" analysis of suicide terrorism to that effect (Bélanger, Caouette, Sharvit, & Dugas, 2014; Kruglanski et al., 2009, 2013, 2014). Kruglanski et al. argue that suicide terrorism's appeal to individual perpetrators largely derives from its potential to grant the individual significance and personal redemption in the face of personal trauma, humiliation, or social exclusion. In a cultural and social sphere that believes

such acts of martyrdom benefit the general community (e.g. tribe, nation, or religion) or address grievances (e.g. occupation, displacement, and humiliation), suicide attacks can result in monetary, social, religious, and personal rewards that contribute to an individual's significance gain in a given community. It is a way in which an individual can become a hero and hold an exalting, significant life that will live on in the group's collective memory. Individual characteristics (e.g. a strong need to belong, narcissism) and social factors (consensual validation of the ideology by peers and training and indoctrination by an organization) will facilitate the perception by the individual that engaging in the suicide terrorism act will yield the significance gain.

Kruglanski's analysis of socio-psychological motivation as described above is complemented by a recent analysis of the organizational drivers of the use of suicide terrorism by Acosta (2016). Acosta argues that organizations incorporate suicide attacks in their repertoire to bolster support for the organization and to boost or preserve status among the organization's constituency. Also, according to Acosta, the use of suicide bombing helps to establish network connections to other organizations with a similar mission. Suicide bombing can thus be considered a prestige object, or what Acosta terms a "political fashion" within particular milieus that once implemented enhances the status of the organization that instigates it, both in the eyes of the constituency that harbours potential recruits, and in the eyes of organizations that share similar political objectives. This contributes to an expansion of resources, which means that using suicide bombing is likely to contribute to the survival of the terrorist organizations. An interesting observation made by Acosta (2016) is that terrorist organizations still use suicide bombing despite the very limited evidence of its strategic/tactical effectiveness. Although the attacks by Hezbollah in the early in 1980s were hailed as an important strategic success because it led to the withdrawal of American troops from Lebanon, scholars have provided systematic evidence to put under considerable doubt whether suicide terrorism is generally effective (Abrahms, 2006; Cronin, 2009). Still, suicide terrorism is used, and likely to contribute to the significance (*sic*) of an organization in the eyes of its constituency and other terrorist organizations.

Closing

In recent years, suicide terrorism has shown a fairly dramatic increase in its use. The trends and statistics reviewed in this chapter clearly show that in absolute numbers suicide terrorism is on the rise, and also importantly, it is expanding geographically. There are now more countries affected by suicide terrorism than ever before. An analysis of the networks involved in suicide terrorism provided by Acosta and Child (2013) further show that the currently most active organizations have ties among them that would allow the organizations to use each other's training grounds and expertise. This considerably complicates efforts to counter suicide terrorism. The convergence by scholars on the notion that suicide terrorism is strongly

associated with significance rather than strategic/tactical yield should be noted by counterterrorism practitioners. Demonstrating that suicide terrorism is not contributing to the achievement of specific strategic objectives may not deter organizations to use it. Suicide terrorism is a source of prestige, both for organizations and for individuals than engage in it. Even when considered a strategic failure, suicide missions may yield a sense of significance once considered in the light of suicide terrorism condoning ideologies. It is for good reason that interviewed incarcerated terrorists emphasize the importance of differentiating Martyrdom operations from suicidal behaviour (Post et al., 2003). Suicide and "Martyrdom" are clearly diverging phenomena, requiring their own proper psychological analysis. When it comes to the psychology of martyrdom, it should be apparent that only a comprehensive consideration of the strategic, organizational, ideological, cultural, socio-economic, and psychological factors at play will provide the insights that could help to genuinely understand and counter it.

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References

Abrahms, M. (2006). Why terrorism does not work. *International Security, 31*(2), 42–78.

Acosta, B. (2016). Dying for survival: Why militant organizations continue to conduct suicide attacks. *Journal of Peace Research, 53,* 180–196.

Acosta, B., & Childs, S. J. (2013). Illuminating the global suicide-attack network. *Studies in Conflict & Terrorism, 36*(1), 49–76.

Atran, S. (2003). Genesis of suicide terrorism. *Science, 299*(5612), 1534–1539.

Bacchi, U. (2014). France Launches New Sahel Counter-Terrorism Operation Barkhane. *International Business Times*. Retrieved from http://www.ibtimes.co.uk/france-launches-new-sahel-counter-terrorism-operation-barkhane-1456646.

Baer, R. (2005). *The cult of the suicide bomber, [DVD]*. London: Many Rivers Films.

Bélanger, J. J., Caouette, J., Sharvit, K., & Dugas, M. (2014). The psychology of martyrdom: Making the ultimate sacrifice in the name of a cause. *Journal of Personality and Social Psychology, 107*(3), 494–515.

Benmelech, E., & Berrebi, C. (2007). Human capital and the productivity of suicide bombers. *The Journal of Economic Perspectives, 21*(3), 223–238.

Benmelech, E., Berrebi, C., & Klor, E. F. (2012). Economic conditions and the quality of suicide terrorism. *The Journal of Politics, 74*(01), 113–128.

Bloom, M. (2005). *Dying to kill: The allure of suicide terror*. New York: Columbia University Press.

Bloom, M. (2009). Chasing butterflies and rainbows: A critique of Kruglanski et al.'s "Fully committed: Suicide bombers' Motivation and the quest for personal significance". *Political Psychology, 30*(3), 387–395.

Bloom, M. (2011). Bombshells: Women and terror. *Gender Issues, 28*(1–2), 1–21.

Bloom, M., & Horgan, J. (2008). Missing their mark: The IRA's proxy bomb campaign. *Social Research, 75*(2), 579–614.

CPOST. (2016). Chicago project on security & terrorism. Retrieved October 11, 2016, from https://cpost.uchicago.edu/.

Crenshaw, M. (2007). Explaining suicide terrorism: A review essay. *Security Studies, 16*(1), 133–162.

Cronin, A. K. (2009). *How terrorism ends: Understanding the decline and demise of terrorist campaigns*. Princeton: Princeton University Press.

Dechesne, M. (2014). 'Mumbai Style': Exploration of a concept. In U. Kumar & M. K. Mandal (Eds.), *Understanding suicide terrorism: Psychosocial dynamics* (pp. 76–92). New Delhi: Sage Publications.

Forest, J. J. (2007). *Countering terrorism and insurgency in the 21st century: Lessons from the fight against terrorism* (Vol. 3). Westport: Greenwood Publishing Group.

Gambetta, D. (2005). *Making sense of suicide missions*. Oxford: Oxford University Press on Demand.

Hafez, M. M. (2003). *Why Muslims rebel: Repression and resistance in the Islamic world*. Boulder, CO: Lynne Rienner Publishers.

Hafez, M. M. (2006). *Manufacturing human bombs: The making of Palestinian suicide bombers*. Washington, DC: United States Institute of Peace.

Hafez, M. M. (2007). Martyrdom mythology in Iraq: How jihadists frame suicide terrorism in videos and biographies. *Terrorism and Political Violence, 19*(1), 95–115.

Hoffman, B. (2006). *Inside terrorism*. New York: Columbia University Press.

Hoffman, B., & McCormick, G. H. (2004). Terrorism, signaling, and suicide attack. *Studies in Conflict & Terrorism, 27*(4), 243–281.

Horgan, J. (2005). *The psychology of terrorism*. Oxon: Routledge.

Horowitz, M. C. (2015). The rise and spread of suicide bombing. *Annual Review of Political Science, 18,* 69–84.

Iannaccone, L. R. (2006). The market for martyrs. *Interdisciplinary Journal of Research on Religion, 2*.

James, W. (1969). *The varieties of religious experience: A study in human nature*. New York: Doubleday.

Jenkins, B. M. (1975). International terrorism: A new mode of conflict. In D. Carlton & C. Schaerf (Eds.), *International terrorism and world security*. London: Croom Helm.

Juergensmeyer, M. (2005). *Terror in the mind of god: The global rise of religious violence*. Berkeley: Taylor & Francis.

Kalyvas, S., & Sánchez-Cuenca, I. (2005). Killing without dying: The absence of suicide missions. In D. Gambetta (Ed.), *Making sense of suicide missions* (pp. 209–232). Oxford: Oxford University Press.

Khosrokhavar, F. (2005). *Suicide bombers: Allah's new martyrs*. London: Pluto Press.

Krueger, A. B., & Malečková, J. (2003). Education, poverty and terrorism: Is there a causal connection? *The Journal of Economic Perspectives, 17*(4), 119–144.

Kruglanski, A. W., Bélanger, J. J., Gelfand, M., Gunaratna, R., Hettiarachchi, M., Reinares, F., … Sharvit, K. (2013). Terrorism—A (self) love story: Redirecting the significance quest can end violence. *American Psychologist, 68*(7), 559–575.

Kruglanski, A. W., Chen, X., Dechesne, M., Fishman, S., & Orehek, E. (2009). Fully committed: Suicide bombers' motivation and the quest for personal significance. *Political Psychology, 30* (3), 331–357.

Kruglanski, A. W., Gelfand, M. J., Bélanger, J. J., Sheveland, A., Hetiarachchi, M., & Gunaratna, R. (2014). The psychology of radicalization and deradicalization: How significance quest impacts violent extremism. *Political Psychology, 35*(S1), 69–93.

Kumar, U., & Mandal, M. K. (2014). *Understanding suicide terrorism: Psychosocial dynamics*. New Delhi: SAGE Publications.

Merari, A., Diamant, I., Bibi, A., Broshi, Y., & Zakin, G. (2009). Personality characteristics of "self martyrs"/"suicide bombers" and organizers of suicide attacks. *Terrorism and Political Violence, 22*(1), 87–101.

Moloney, E. (2003). *A secret history of the IRA*. New York: WW Norton & Company.

Mukherjee, S., Kumar, U., & Mandal, M. K. (2014). Suicide terrorism: Delineating the construct. In U. Kumar & M. K. Mandal (Eds.), *Understanding suicide terrorism: Psychosocial dynamics* (pp. 3–18). New Delhi: SAGE Publications.

NC-START. (2016). Global terrorism database. Retrieved October 11, 2016, from https://www.start.umd.edu/gtd/.

Nisbett, R. E., & Wilson, T. D. (1977). Telling more than we can know: Verbal reports on mental processes. *Psychological Review, 84*(3), 231–259.

Pape, R. (2003). The strategic logic of suicide terrorism. *American Political Science Review, 97*(3), 343–361.

Pape, R. (2005). *Dying to win: The strategic logic of suicide terrorism*. New York: Random House.

Pedahzur, A. (2006). *Root causes of suicide terrorism: The globalization of martyrdom*. Abingdon: Routledge.

Post, J. (2005). When hatred is bred in the bone: Psycho-cultural foundations of contemporary terrorism. *Political Psychology, 26*(4), 615–636.

Post, J., Sprinzak, E., & Denny, L. (2003). The terrorists in their own words: Interviews with 35 incarcerated Middle Eastern terrorists∗∗ This research was conducted with the support of the Smith Richardson Foundation. *Terrorism and Political Violence, 15*(1), 171–184.

Pyszczynski, T., Solomon, S., & Greenberg, J. (2003). *In the wake of 9/11: The psychology of terror*. Washington, DC: American Psychological Association.

RAND. (2016). RAND database of worldwide terrorist incidents. Retrieved October 11, 2016, from http://www.rand.org/nsrd/projects/terrorism-incidents.html.

Schmid, A. (1992). The response problem as a definition problem. *Terrorism and Political Violence, 4*(4), 7–13.

Schmid, A., & De Graaf, J. (1982). *Violence as communication: Insurgent terrorism and the Western news media*. Thousand Oaks, CA: Sage Publications.

Schmid, A., & Jongman, A. (1988). *Political terrorism: A research guide to concepts, theories, databases and literature* (1988th ed.). New Brunswick: Transaction Publishers.

Speckhard, A., & Ahkmedova, K. (2006). The making of a martyr: Chechen suicide terrorism. *Studies in Conflict & Terrorism, 29*(5), 429–492.

Stern, J. (2003). *Terror in the name of God: Why religious militants kill*. New York: Ecco.

Victoroff, J., Adelman, J. R., & Matthews, M. (2012). Psychological factors associated with support for suicide bombing in the Muslim diaspora. *Political Psychology, 33*(6), 791–809.

Wegner, D. M., & Wheatley, T. (1999). Apparent mental causation: Sources of the experience of will. *American Psychologist, 54*(7), 480.

Weinberg, L., & Pedahzur, A. (2010). Suicide terrorism. *Religion Compass, 4*(4), 234–244.

Chapter 9
The Communication of Suicide Terrorism

Jonathan Matusitz

Suicide terrorism refers to a terrorist attack in which a person intentionally kills others so as to create substantial damage, while being conscious that he or she will also perish in the attack. As Pedhazur (2004) explains, suicide terrorism refers to "a diversity of violent actions perpetrated by people who are aware that the odds they will return alive are close to zero" (p. 8). Methodologically, this chapter is a conceptual analysis of suicide terrorism. The main premise of this analysis is that suicide terrorism is, first and foremost, a communicative act. Suicide terrorists do not simply engage in suicide/murder. Rather, they communicate something to us; they do so by exploiting both their own death and their victims' death as a symbolic signal. It is a means of propaganda that conveys a message of superiority vis-à-vis enemies (e.g. infidels) and loyalty towards a particular cause, culture, religion, or Supreme Power. Overall, this analysis examines the communication of suicide terrorism in five different ways: (1) The weapon of mass persuasion, (2) nonverbal communication, (3) the martyrdom video, (4) a form of status symbol and (5) the culture of death. Scholarship on suicide terrorism has barely looked at that phenomenon from a communicative standpoint—at least not by integrating all five different communicative perspectives in one single study. Hence, the author hopes to add fresh insights to a subject that has become increasingly prominent in both Western and non-Western media.

To begin, a weapon of mass persuasion alludes to any terrorist strategy that can shape the mind and behaviour of the targeted population. As a means of propaganda, it is a psychological procedure that causes the target to frame the world in a (new) specific way in order to influence subsequent judgment. Nonverbal communication refers to communication through sending and receiving wordless messages. Examples include facial expressions, kinesics (body language),

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proxemics (distance), haptics (touch) and paralanguage (voice). In the context of suicide terrorism, an example of nonverbal communication is the "smile of joy." The "smile of joy" is translated as *bassamat al-farah* in Arabic. It symbolizes the would-be jihadist's belief that he or she will be recompensed by Allah with eternal life in *janna* (i.e. the Heavenly Garden) if the suicide mission is accomplished successfully. Hence, the suicide jihadist will openly display his or her cheering thoughts before the final act (Yungher, 2008). A martyrdom video is a footage recorded by a jihadist in whom he or she extols the virtues of fulfilling a suicide attack and dying as a martyr (i.e. hero) in holy war.

An immense motivator for people to commit suicide terrorism is the ability to attain status symbols if the suicide mission succeeds. There are multiple examples of status symbols, including sacred Muslim burials, posters, websites, public exhibits, and, of course, public accolades for the martyrs' friends and relatives. Finally, martyrdom includes the notion of "culture of death," also called martyropathy, which alludes to the deep-rooted focus on eternal life in *janna*. For this reason, Osama bin Laden used death cult language profusely. Martyropathy would be less meaningful without blood sacrifice, which is sacrifice of one's life for a culture, nation, cause, or religion. Terrorist organizations have been able to make martyrdom operations achievable by playing up the importance of self-destruction as an act of redemption. Redemption is the exploit of saving oneself (and/or others) from sin so as to avoid eternal damnation. To this effect, redemption is about commitment to one's values and meeting the criteria embedded in those values.

Suicide Terrorism: A Description

Suicide terrorism is an attack upon a target, in which a terrorist intends to kill others and/or create significant damage, while being aware that he or she will die in the process (Moghadam, 2003; Pedhazur, 2006). As Pedhazur (2004) puts it, suicide terrorism refers to "a diversity of violent actions perpetrated by people who are aware that the odds they will return alive are close to zero" (p. 8). For Ganor (2001), it is an "operational method in which the very act of the attack is dependent upon the death of the perpetrator" (p. 6). Suicide terrorism diverges from other terrorist methods in the sense that the accomplishment of a suicide attack hinges solely on the death of the attacker him- or herself—e.g. through an intentional explosion—whose body is used as a weapon against enemies (Baloch, 2010). By extension, the distinction between ordinary suicide and suicide terrorism lies in one crucial point: the terrorists are willing to not only risk their lives, but also to do it for their cause or Supreme Being. From a criminal/legal perspective, suicide terrorism is defined as a murderous act with a particular *mens rea* (i.e. "guilty mind"); it is the intention to kill in consort with the willingness to die (Ahmad & Dein, 2016; Alvanou, 2006).

Synonyms for suicide terrorism include, but are not limited to, suicide bombing, suicide-homicide bombing and martyrdom operation. Suicide attacks are often perpetrated in four different ways: human-borne suicide (e.g. by using a suicide

bodysuit), vehicle-borne suicide (including the use of trucks, automobiles and motorcycles), marine-borne suicide (including the use of watercraft and scuba divers) and aerial-borne suicide (including the use of gliders, mini-helicopters and airplanes) (Falk, 2009). Because of the enormity of devastation that these methods can cause, suicide terrorism is useful to militant groups as they can massacre a large number of individuals in a short amount of time (Matusitz, 2014).

Martyrdom

A specific kind of suicide terrorism is martyrdom. By and large, martyrdom is heroic death (generally in battle) which, according to holy texts, is hallowed or blessed by a Supreme Being (Perry & Long, 2016). Martyrdom bestows immortality and the deceased is lionized as a hero because he or she gave up his or her life in sacrifice—hence, the term "martyr." The martyr is not born or self-made; martyrdom operations are seldom the consequence of lone nuts (Barlow, 2015; Boudry & Coyne, 2016). For example, in the Gaza Strip, Hamas, the Palestinian Islamic Jihad (PIJ), and other Palestinian organizations enlist, brainwash and train their future suicide bombers. Therefore, martyrs are often the product of their system. Their creation depends, to a large extent, on the type of social environment and other cultural factors (Acosta, 2016). There is an increasing tendency to adopt martyrdom as an emblem of resistance and terrorism. When a suicide bomber kills him- or herself under the banner of jihad, but does it alone (without any assistance whatsoever), it is called predatory martyrdom. Predatory martyrs are only few and far between. They are usually self-radicalized through internet blogs, podcasts, revolutionary books, extremist websites and their own admiration for militant teachers and leaders with terrorist agendas (Barlow, 2007).

Istishhad

For a scholar like Kobrin (2010), Islamic suicide terrorism is akin to group-assisted massacre through suicide bombings. It is the product of a collective fantasy of killing the People of the Book (i.e. Jews and Christians, in the Qur'an) and the apostates (fellow Muslims who have abandoned the Muslim religion). Over the years, martyrdom operations have been developed as an ideal approach to mortality —even at the hands of the enemy—and as a justifiable deed for the will of Allah. To this point, a certain number of terrorist leaders claim that Allah, and not the martyr, determines whether the latter will die, and whether women and children will perish alongside the martyr (Eke, 2015; Halman, 2012; Matusitz, 2016). The essence of this passage can be summed up in one concept: *istishhad*. *Istishhad* is the

Arabic term for martyrdom, the process of dying as a martyr (or heroic death). When translated word-for-word, it essentially means "self-chosen martyrdom" (Juergensmeyer, 2000; Lewis & Churchill, 2008).

As a religious expression, *istishhad* epitomizes the ultimate surrender of one's life to Allah. In common jihadist phraseology, the term also highlights heroism in the accomplishment of sacrifice (rather than anonymous death in battle). This mindset has been anchored within mainstream military and political tactics of jihadist operations (Abufarha, 2009; Haddad, 2004; Post, 2010). An individual who performs *istishhad* is called *istishhadi* (which is the same as *shahid*, see later section). The roots of modern *istishhad* are based in Iranian Shia Islam during the Iran–Iraq War of 1980–1988. One of the first instances of earth-shattering *istishhad* was the event whereby Iranian children were walking on minefields to detonate buried landmines—so as to pave a safe way for adult soldiers. However, the first famous case of *istishhad* in that Iran–Iraq War was Mohammed Hossein Fahmideh, a 13-year-old boy soldier, who became the very first renowned martyr of the late twentieth century. In November 1980, Fahmideh attached rocket-propelled grenades to his body and blew himself up under an Iraqi tank. The Grand Ayatollah Khomeini transformed Fahmideh into a national hero, who became an instant inspiration for people who were contemplating *istishhad* (Andreescu & Cosea, 2013; Baer, 2006).

Hamas

In Arabic, the martyr is termed *shahid* (*shuhada* in the plural). Hamas releases public announcements in which they glorify their *shuhada*, claiming responsibility for martyrdom operations in the Gaza Strip and Israel. Each of those suicide attacks is listed on the official Internet site of the Palestinian resistance movement (through its Palestine Information Center). In Arabic, the site is titled "Sijil Al-Majid" (which means "Record of Glory"). For each *shahid* killed in holy war, Hamas posts a memorial page on its "Sijil Al-Majid" site. The memorial section is called "Shuhada' wa mu'ataqalun" in Arabic ("Martyrs and Prisoners") (Independent Media Review Analysis, 2004).

Since the mid-1990s, Hamas terrorism has been greatly associated with *istishhad*. The *shahid* can attain high status when he or she becomes a martyr. In jihadist terminology, the term "suicide bomber" is never used; rather, jihadist groups evoke the very concept of martyrdom or *istishhad* (Juergensmeyer, 2000). For Abdul Aziz Rantisi, a key Hamas founder, the "suicide bomber" categorization suggests an impulsive action by a deranged individual. However, for Hamas, the ultimate act of martyrdom is resolute and cleverly chosen, arising from intensely felt religious obligation. Thus, when a jihadist sacrifices his or her life in combat, he or she is bequeathed permanent symbolic immortality. The *shahid* is then raised to a higher spiritual level and sits next to Allah in Paradise (Lukasik, 2016; Msellemu, 2016).

Some Statistics

Between 1980 and 2001, each suicide terrorist attack caused the death of thirteen people on average, while other terrorist tactics only killed one person on average—apart from 11 September 2001 which made the death ratio much higher (Pape, 2005). More recently, according to Rosner, Yogev, and Schweitzer (2014), working for the Institute for National Security Studies, eighteen countries suffered extreme cases of suicide terrorism in 2013. Almost 300 suicide bombings were perpetrated, causing about 3100 deaths. This number equaled to a 25% increase from the year 2012. In another study, conducted by the Chicago Project on Security and Terrorism (2016), between 1981 and September 2015, almost 5000 suicide attacks took place in more than forty countries, killing over 45,000 people. Taken as a whole, suicide attacks are moderately cheap because they wreak the highest volume of damage with the lowest number of wrongdoers. Suicide terrorism does not require a "way out" and leaves no one to be caught and interrogated afterwards. So, in theory, no betrayal is possible (Hafez, 2006).

A Weapon of Mass Persuasion

When a suicide terrorist attack is so successful that it causes people—or even an entire society—to change, it becomes a massive persuader. Suicide terrorism, then, is a vehicle of communication called "weapon of mass persuasion." A weapon of mass persuasion refers to any lethal communicative method devised to sway the minds and/or conduct of the targeted audience. As a type of propaganda, it is a psychological apparatus that manipulates salience so as to form subsequent judgment (Corman, Trethewey, & Goodall, 2008). Suicide terrorism inherently includes the targeted population in the persuasive process, making it a mammoth device to shape minds. Of all the vehicles of terrorist propaganda, suicide terrorism remains the most powerful and efficient weapon of mass persuasion in the modern history humankind.

The appeal of suicide terrorism has not reached a universal scope along the entire ideological spectrum. To this day, suicide terrorism has been embraced predominantly by jihadist organizations and South Asian extremist groups such as the Tamil Tigers (in Sri Lanka). In regards to the concept of "weapons of mass persuasion" itself, the objective of ideology-based violence and resistance is to foist beliefs or will on enemies. Different expressions could be used to that effect. For example, in Ancient China, the philosophy of Sun Tzu (1963), a military tactician, was to "subdue the enemy" or "break the enemy's resistance." A weapon of mass persuasion also induces the idea of asymmetric warfare, a situation in which suicide attacks result from an imbalance of power. Groups with lesser power employ suicide bombings as a method to destabilize the group with higher power—such as the government and powers-that-be (Mansdorf & Kedar, 2008).

Influence Operations

In military jargon, weapons of mass persuasion are referred to as influence operations. Influence operations are actions taken in order to influence the actions, behaviour, attitudes, or views of the population (Hebert, 2005). The enemy consists of individuals, and there are many ways to influence them. On the one hand, a person can be killed. On the other hand, that same person can be convinced to acknowledge and eventually embrace a new philosophy. Put another way, influence operations are propagandistic in that they are capable of changing individuals' attitudes, behaviour, views, and, in the fullness of time and actions (Kagan, 2003). Hoffman and McCormick (2004) contend that suicide terrorism is a type of influence operations whereby terrorists convey (to their audience) their message of intention and determination. To this point, Pape (2006) ascribes more than 90% of suicide attacks before the Iraq Civil War to a desire that U.S. military forces disengage from that area. In similar vein, Atran (2006) advances the idea that, since 2004, most suicide bombers have been motivated by Islamist ideology and, as a result, Islamist suicide attacks have happened much more frequently. In just a two-year frame (2004–2005), more suicide attacks were perpetrated than ever before—if truth be told, approximately 600 more than Pape's entire sample.

Acting Out

Suicide terrorists do not simply engage in suicide/murder. Rather, they communicate something to us; they do so by exploiting both their own death and their victims' death as a symbolic signal. As a symbol in and of itself, the suicide-killing becomes a conduit for the transmission of ideas and ideologies. In spite of having no clear or concrete message, the act is all there is; it describes everything. It is a category of communication that is so significant that it becomes a weapon of mass persuasion that pushes victims (and the audience that witnessed the atrocities) to make significant changes. On 23 October 1983, two Hezbollah suicide bombers died in self-detonated truck bombs at U.S. Marine barracks in Beirut, killing 241 U.S. and 58 French servicemen in the process (Jaber, 1997). Hezbollah was simply acting out a deep-seated desire to get the Western military to leave Lebanon—which they did after President Ronald Reagan withdrew the U.S. troops in the spring of 1984 (Winkler, 2015).

This anecdote is what psychoanalysts would refer to as "acting out." The symbolism is situated within the act itself; death is now its vehicle and meaning. The Beirut suicide attack unfolded itself through its own "eventness" (Douzinas, 2008). Acting out is a defense mechanism whereby a person expresses emotional conflict and sentiments through actions, not words (Bond, Gardner, & Christian, 1983).

"Acting out" deliberately means acting out (i.e. expressing) one's needs and yearnings that are desired by the Id. The Id is an element of human personality that comprises our primitive drives and functions primarily thanks to the pleasure principle (Flescher, 1955). The pleasure principle has two principal objectives: the seeking of pleasure and the avoidance of pain. It has very limited rationality and seeks to fulfil our needs through what Freud (1949) called the "primary processes" that regulate the life of the infant—including satisfaction and self-protection.

Biopolitics

A fourth way to explain the concept of "weapon of mass persuasion" is by discussing biopolitics. Biopolitics occurs when the body of the terrorist is used as a destructive weapon. His or her fragmented body parts are quickly transformed into destructive projectiles. It is a simple but lethal process: biopolitics involves using one's body as a weapon (Hardt & Negri, 2005). Murray (2006) comments that "the attacker's body is literally weaponized. Shards of bone become human shrapnel" (p. 207). The suicide terrorist's detonating body is at the axis between his or her achieved goal and the victims' eternal punishment (Douzinas, 2008). In biopolitics, the suicide terrorist is a smart bomb: he or she gets to choose where and when the detonation of the body will take place. The ultimate objective is to make it a weapon of mass persuasion: to wreck as much damage as possible in order to change minds. As Hoffman (2003), a notable terrorism expert, explains, the suicide bomber is "the ultimate smart bomb, or human cruise missile" (p. 3). And if the bomber is unmasked by people in its surroundings or law enforcement, he or she can detonate him- or herself instantly.

Reem Riyashi, a 21-year-old Palestinian would-be suicide bomber, read the following statement in her farewell video: "It was always my wish to turn my body into deadly shrapnel against the Zionists and to knock on Heaven's doors with the skulls of Zionists." The next day, she took four Israeli innocent lives with her in the suicide attack. Reem, or those who composed her last statement, believed that her ultimate mission would grant her admission into Paradise (Marcus & Crook, 2012). Smart bombs can make last-minute changes to ensure their operation works as planned. This is a centrepiece of biopolitics. The psychological impact on the audience witnessing the suicide attack, whether friend or enemy, is formidable. Biopolitics sends the message that the struggle is never-ending because would-be martyrs are ready to forfeit their bodies and souls for the cause. It also sends the message that ultimate sacrifices never happen in vain. Future heroes must keep on carrying the torch through similar or even grander acts (Hafez, 2006).

The Role of Nonverbal Communication in Suicide Terrorism

Nonverbal communication refers to communication that takes place through sending and receiving silent or gestured messages. Examples include facial expressions, kinesics (body language), proxemics (distance and the use of space), haptics (touch) and paralanguage (voice).

Body Language in Suicide Terrorism

In the same way that airport security screeners must learn to detect body language, we must learn to identify the "emotional" body language of the suicide bomber and the devastation that he or she may bring to the target site (Kobrin, 2010). Body language refers to language whereby physical behaviour, unlike words, is employed to convey feelings. Such behaviour incorporates facial expressions, posture, gestures, eye movement, haptics and proxemics. Body language is inherent to both animals and humans, but this section emphasizes primarily interpretations of human body language. It is also known as kinesics (Hassanabadi, 2016; Mahaffey & Wubbolding, 2016).

An expert on body language in suicide terrorism, al-Shumari (2015) explains how both law enforcement and ordinary citizens can recognize an Islamist suicide bomber. To begin, the would-be martyr has a different manner of walking; it usually looks strange because of the burden of explosives or the consumption of a narcotic substance. Second, his or her facial expressions are something to behold: signs of stiffness, anxiety, sweating and tremor in the facial muscles. Third, the suicide bomber's eyes adhere to a frequent pattern: he or she is looking directly at the target without looking to the left or right. Fourth, the person's lips are generally reciting Islamic prayers silently. In a similar fashion, Smith (2015) adds that the facial expressions of the suicide bomber range from jumpy and edgy to unresponsive with a blank stare. The would-be martyrs will likely have rigid movements because of the hidden explosives and may make "confidence touches" akin to those carrying firearms. Those with explosives hidden in the rectum or vagina may have a strange gait.

The Smile of Joy

As soon as a suicide bombing operation succeeds in places like Israel or the Palestinian territories, many survivors, when interviewed, reminisce that the suicide jihadist projected a smile on his or her face before blowing him- or herself up and killing the target in the course of action. The smile of joy comes from "bassamat al-farah" in Arabic. It represents the suicide jihadist's long-established belief that he

or she will be recompensed by Allah with eternal life in the Heavenly Garden. Hence, it is no wonder that the suicide killer exudes his or her cheering attitude before carrying the ultimate act (Yungher, 2008).

In regards to the aforementioned suicide bombing tragedy at the U.S. Marine barracks in Beirut, in October 1983, one of the witnesses, a U.S. guard, remembered one of the jihadists who was driving the truck full of explosives toward the barracks. The guard explained that the man radiated a big smile on his face; the smile was almost euphoric (Richardson, 2007). In the jihadist martyrdom code, instants before the terrorist's impending martyrdom, his or her fellow acolytes (occasionally in the same suicide unit) often say: "Your face has the smile of a martyr." The smile of joy is a type of body language that is tantamount to religious fervour—something that motivates them to commit sacrificial acts. Within the Muslim world, "The Smile of Joy" even became a *nasheed* (Islamic poem or hymn) after the collapse of the Twin Towers in New York on 11 September 2001 (Bartow, 2002).

Martyrdom Videos

A significant number of martyrs-to-be videotape their last statements for public consumption. These statements are edited into martyrdom videos. A martyrdom video is a video recording, usually by jihadists or Islamist activists, advocating the involvement in a suicide attack and glorifying the idea of dying as a hero in holy war (Matusitz, 2012). The video is a speech by the martyr-to-be who is ready to die for the cause. Even though most videos are of inferior quality, some of them combine text, music and sentimental segments—a concept called "emotive narratives" (Olson, Finnegan, & Hope, 2008). The martyr's statements can be personal. To enhance community approval, he or she also provides a rationale for committing the deadly action (Leenaars, 1988; Maris, 2000).

The script for the video testament is meticulously crafted before the filming. The recording itself is done the day before the suicide mission, which the martyrs-to-be watch repeatedly to strengthen their willpower and resolve. Pictures of them are taken and are displayed on propaganda posters after the successful mission is accomplished. These videos also feature firearms, the Qur'an, and other jihadist symbols. To be more precise, the future martyr sits or stands in front of a black Islamic flag. All these elements are integrated into a single message: the profound significance of martyrdom and its violent repercussions (Combating Terrorism Center, 2006). When the recording session is fully completed, the group's leaders assign their martyrs-to-be to pre-identified targets (The Economist, 2004).

A martyrdom video is a symbol of the iconographic art of suicide terrorism. This symbolism is often exploited by Palestinian terrorists. The videos they produce for their loved ones become a template for new generations; an educational tool to recruit future heroes (Israeli, 2002). Martyrdom videos can boost the symbolic influence of jihadist groups and their sympathizers. These videos not only solidify the martyrs as

immortal beings; they also operate as contracts with the "chosen ones." Backing down on a mission—especially after making an official proclamation of one's intentions on a videotape—would result in profound social and even spiritual costs (Atran, 2003). Finally, a certain number of martyrdom videos have claimed or disclaimed responsibility because they were made before a suicide operation and watched only after the operation succeeded (Hoffman, 2009; Nauta, 2013).

A Form of Status Symbol

A status symbol is a kind of societal recognition in material and/or social form. It is a visible sign of one's social position and a clear indicator of one's status in a specific community, society, or culture (Anudeep & Anuj, 2015; Cherrington, 1994). In many parts of the Muslim world, people consider martyrdom as a status symbol. The few "chosen ones" for accomplishing *istishhad* are acclaimed as heroes. The entire apparatus—consisting of friends, kinsfolks, teachers, religious leaders, correspondents and politicians—shares this delirium of the status symbol of martyrdom (Caracci, 2002). A theory that corroborates the importance of martyrdom as a status symbol is symbolic self-completion theory. Coined by Wicklund and Gollwitzer (1982), symbolic self-completion theory postulates that people with status anxiety are more likely to enact self-symbolization. Self-symbolization can be achieved thanks to some type of status symbol; this way, those people can boost their identity or find leverage for their own inadequacies. Self-symbolization is realized when a person's status is legitimized by others who interpret specific symbols as legitimate status markers (Gollwitzer & Wicklund, 1985). In Muslims areas like the Gaza Strip, reaching the level of martyr for Allah is a status symbol that attracts many disgruntled youths.

More Power to the Martyr

The martyr who sacrifices him- or herself becomes the one who carries symbols of power (Kimhi & Even, 2006). Recognizing such heroism as martyrdom propels the person's death to a dignified level (Barkun, 2007). For the *shahid*, "self-chosen martyrdom" is the most admirable act. As Sayed Abu Musamah, the Editor-in-Chief of the Hamas newspaper, "Al-Watan," explained, *istishhad* "is the highest form of courage" (Bartholet, 1995, p. 42). In the eyes of a significant minority of Palestinians, *istishhad* is the ultimate act of sacrifice: when suicide-killing Israelis, *shahids* engage in a form of ritual that elevates their status and communicate their invincibility to both their enemies and the entire world. By witnessing such "noble" acts, many of their Palestinian relatives and comrades feel for them (Hareven, 1983). During their last interview (before strapping their suicide vests or exploding their grenades), suicide bombers also wish their wives and children to become such powerful martyrs as well. After all, for a martyr's family, dying as a hero in holy war is the highest honour.

The concept that denotes the encouragement that martyrs receive to emulate their loved ones (to both please Allah and gain such status symbol) is called associational catalyst. An associational catalyst is an essential reminder of the greatness of being lionized as a martyr. Through associational catalysts, individuals are more likely to treasure martyrdom overall (Edelman, 1964).

Celebrating the Martyr's Life

Advocates of martyrdom communicate the greatness of *istishhad* through posters, websites and public exhibits to pay homage to their heroes and cherish their heroic sacrifice. Calendars include holidays such as "martyr of the month." Paintings praise the martyrs in Paradise; as a triumphant protagonist amid a flock of green birds. This latter symbol is associated with a proverb created by the Prophet Muhammad: the soul of a martyr is surrendered to Allah amid the green birds of Paradise. One profile of a martyr described how his soul rose to the sky on a splinter of a bomb (Hassan, 2001). The text included the martyr's name and the exact time of his or her death. The image depicted a mosque or shrine, a proverb and the martyr's pseudonyms. Of equal relevance is the fact that the image displayed the martyr's bloody face. At al-Najah University in Nablus (in the West Bank), a hotbed for a large number of martyrs-to-be, many martyrs' effigies are displayed on the walls and door entrances. Imams' orations are dedicated to honouring the martyrs' lives and extolling the virtues of their accomplishments (Hafez, 2006).

According to Sharia, the body of Islamic law, anyone who sacrifices his or her life for Islam has the right to a sacred Muslim burial—exclusive of the long-established ablution or purification ritual, or the change of clothing. The latter is usually required for those deceased people who did not become martyrs. As a status symbol, martyrdom has it that the hero's corpse becomes legally pure. In like fashion, when framing the picture of a martyr, jihadist discourse can invoke notions of familial sentimentality. These picture frames are a gentle reminder to viewers of their own family portraits; they convey the idea that these are normal citizens who sacrificed their lives in heroic acts. Therefore, anyone can do this as well; anyone who is physically and emotionally, capable of doing it (Combating Terrorism Center, 2006). To that point, architects of martyrdom operations will do what they can to respect the martyrs' mothers and fathers by bestowing them the title of "umm al-shahid" (mother of the martyr) or "abu al-shahid" (father of the martyr) (Hafez, 2006).

Culture of Death

"Culture of death" refers to the intentional destruction or degradation of human life to the point of engaging in murder or self-murder (Mahan & Griset, 2012). Motivated by a culture of death (which is the belief that one will go to Paradise

upon dying), suicide terrorists look at their enemies as weak because they, on the other hand, like to enjoy a "culture of life" (Halfmann, 2003).

Martyropathy

An alternative concept for "culture of death" is martyropathy. Martyropathy is "the result of an inversion born of resentment. The goal is no longer to realize an ideal, but to take leave of life by destroying the enemy in an apocalyptic vision that will put an end to life" (Khosrokhavar, 2005, p. 60). Explained differently, martyrs-to-be consider death, not life, as their aspiration. In the words of Shehzad Tanweer, one of the four 7 July 2005 London suicide bombers: "We are 100% committed to the cause of Islam. We love death the way you love life" (cited in Klausen, 2015; Maarouf, 2013). Tanweer said this in a video recorded some time before the terrorist attack.

A common denominator for many extremist movements—including Nazism—is that "culture of death." From "Viva la Muerte" of the Phalangists to the Nazi scalp symbol, from Heaven's Gate's obsession with progressing to an alien afterlife to Iranian fundamentalists' infatuation with martyrdom, there is an unparalleled love of death that is beyond comprehension. The martyr-to-be vehemently believes that he or she will go to Paradise. During the Iran–Iraq War of 1980–1988, Iranian boys and girls were awarded Taiwan-produced plastic keys around their necks before walking on the minefields. These plastic keys were called "keys to paradise." Upon dying, the martyr would enjoy the presence of 72 virgins in *janna* (i.e. the Heavenly Garden). Khomeini's favourite saying was, "To kill and get killed are the supreme duties of Muslims" (cited in Taheri, 2004).

Sometimes, the martyr-to-be is even recognized as wearing a shroud during street protests to display his or her commitment to die at any moment. In jihadism, no street or building is honoured after a living person; only the heroes who die in holy war are paid this honour. For example, the name of the street of the Egyptian embassy in Tehran is "Khalid Showqi al-Islambouli" (who was President Anwar Sadat's killer). In contrast, the name of "Naguib Mahfouz," an Egyptian author who won the Nobel Prize for Literature, is never brought up unless it is to insult him (Al-Dabbagh, 2015).

Death Cult Language

As stated by Ali Khamenei, the present-day Supreme Leader of Iran, it is "by dying for his faith that a Muslim becomes truly alive". Put simply, my life will have meaning only if I die. At the time these words were uttered by Khamenei, the latter was already ruling the Islamic Republic of Iran. On a similar note, one of Osama bin Laden's beloved poems is titled, "The Sweet Nectar of Death;" to inspire his

young followers, bin Laden employed death cult language, a type of discourse that glorified death (Lentini, 2015). The objective was simple: to shape the whole world and impose the caliphate. In his death cult language, bin Laden made the following declarations: "The Crusader army became dust," "Death is truth and the ultimate destiny," and "Courageous youth of Islam fear no danger." It is obvious that human sacrifice had an important place in bin Laden's world. As opposed to Christian martyrs who suffered torture and death for their beliefs, Muslim martyrs have remained ecstatic soldiers like Japanese kamikazes. After all, they will enter Paradise after slaughtering infidels and dying for Allah. Death cult language is not a new phenomenon: it was already present in early Muslim terrorist cults. The Assassins claimed that salvation was only for those who acquiesced to their leaders (e.g. imams), slayed enemies, and subsequently performed ritual suicide (Buruma & Margalit, 2004).

Blood Sacrifice

In the eyes of jihadists and Islamists, martyrdom is an example of righteous, high-minded sacrifice by determined people. It is sacrifice as a selfless noble deed (Carter, 2003). Symbolically, it is the ultimate act of communication of violence through the suicide terrorist's self-sacrificing deed. Self-sacrificial suicide is associated with identity formation founded on faith (Arena & Arrigo, 2005). In sacrifice, less risk is involved because planners and leaders are not really concerned about perpetrators being apprehended and interrogated. Suicide missions are also much cheaper and more likely to succeed than most other types of terrorist methods. Martyrdom-focused terrorist organizations tend to develop a sacrificial myth, a system of beliefs that involves complex symbols and rituals to boost the suicide bombers' potential to inflict harm and, at the same time, attract more recruits. Through sacrificial myths, any terrorist organization can create such symbols and rituals to make powerful statements (Pape, 2005). Frequent ritual performances solidify complex beliefs and concepts. An example is the system of rewards, which includes wonderful prospects in the afterlife. This sacrificial myth is a valuable method for energizing the commitment of suicide recruits to the martyrdom cause (Sosis, 2003).

A fundamentally symbolic act that illustrates the aforementioned points is blood sacrifice (Dingley & Kirk-Smith, 2002). Blood sacrifice is sacrifice of one's life for a culture, nation, cause, or religion. It can be dying for a fatherland or motherland, or even a political party or movement. Oftentimes, it denotes the martyrs' death for a specific cause. Put simply, blood sacrifice is sacrificial death for the greater good. It is used as "an avenue by which certain rewards are obtained" (Vernon, 1970, p. 40). Terrorism works when it occasions a common response from the terrorists' own community. It does so by taking advantage of shared cultural messages grounded on a group's sacrificial myths.

Given these circumstances, blood sacrifice and suffering as a martyr are pivotal in this dialogue on symbolism. In a certain number of cultures, dropping blood elicits a powerful emotional response that draws from key cultural mechanisms. These mechanisms communicate messages that bond individuals who live in the culture and, consequently, mold their attitude and behaviour (both communally and doctrinally). If one were to reject the blood-shedding tradition, no cultural message would be necessary (Dingley, 2008). One of the benefits of performing *istishhad* is the actual enjoyment of blood sacrifice: the first drop of blood cast by a hero in holy war redeems him or her by cleansing his or her sins immediately (Perlmutter, 2003).

Redemption

Speaking of redemption, in territories like the Gaza Strip, terrorist organizations that design and run suicide missions generate a tantalizing culture of death to attract as many volunteers as possible. Such terrorist organizations have managed to communicate the utmost importance of self-destruction as an act of redemption. Redemption is the ability of saving oneself (and/or others) from sin so as to avoid eternal damnation. To this effect, redemption is about commitment to one's values and meeting the criteria embedded in those values (Atran, 2016; Roose, 2016). Instead of eluding the challenge, the most determined people will choose to redeem their souls through heroic and self-sacrificial deeds—e.g. by taking outstanding steps to save their communities or countries from existential threats. It is not uncommon for martyrdom-focused terrorist organizations to beseech their constituents to participate in extreme violence so as to "measure up" to their cultural or religious values and make their relatives, friends, or community proud. Sidestepping this challenge would create conflict because it is regarded as a betrayal of one's principles and the public shaming of one's loved ones, nation, and God (Hafez, 2006, 2007).

Discussion

What this analysis has demonstrated is that suicide terrorism—a terrorist attack committed by a person who intends to kill others and/or inflict significant damage, while knowing fully that he or she will die as well—is first and foremost a communicative act. Suicide terrorists do not simply engage in suicide/murder. Rather, they communicate something to us; they do so by exploiting both their own death and their victims' death as a symbolic signal. As we have seen, it is a means of propaganda that conveys a message of superiority vis-à-vis enemies (e.g. infidels) and loyalty towards a particular cause, culture, religion, or Supreme Power. Five communicative methods of suicide terrorism were examined in this paper:

(1) The weapon of mass persuasion, (2) nonverbal communication, (3) the martyrdom video, (4) a form of status symbol and (5) the culture of death.

A specific kind of suicide terrorism is martyrdom. By and large, martyrdom is heroic death (generally in battle) which, according to holy texts, is hallowed or blessed by a deity. Thanks to heroic death in battle, one reaches the status of immortality. The Arabic term for martyrdom is *Istishhad*, the process of dying as a martyr (or heroic death). In the world of jihadism, it is "self-chosen martyrdom." As a religious expression, *istishhad* embodies the ultimate surrender of one's life to Allah. In common jihadist parlance, the term also highlights heroism in the accomplishment of sacrifice (rather than anonymous death in battle). A specific mode of communication that jihadists use to communicate many of the aforementioned points is the martyrdom video. A martyrdom video is a video recording, usually by jihadists or Islamist activists, advocating the involvement in a suicide attack and glorifying the idea of dying as a hero in holy war.

Using one's life and the body as a destructive weapon is called biopolitics. The martyr's fragmented body parts can quickly turn into destructive projectiles. Of equal relevance is the fact that suicide terrorism is a weapon of mass persuasion, which other scholars call "influence operations" and "acting out." While influence operations are propagandistic in that they are capable of changing individuals' attitudes, behaviour, views, and, in the fullness of time, actions, "acting out" is a defense mechanism whereby a person expresses emotional conflict and sentiments through actions, not words. The Hezbollah suicide attack in Beirut—on 23 October 1983—that took the lives of hundreds of U.S. and French servicemen is an example of "acting out."

In line with these contentions, the point was made that one must learn to identify the "emotional" body language of the suicide bomber and the devastation that he or she may bring to the target site. In this regard, in the jihadist martyrdom code, the smile of joy, moments before the terrorist's impending martyrdom, is a reminder that martyrs-to-be are not afraid of death, as 72 virgins and other wonders in *janna* will be soon available to them. Hence, the smile of joy is a type of body language that is tantamount to religious fervour—something that motivates them to commit sacrificial acts.

Another massive motivator for people to commit suicide terrorism is the ability to attain status symbols if the suicide mission succeeds. There are multiple examples of status symbols, including sacred Muslim burials, posters, websites, public exhibits, and, of course, public recognition of the martyrs' friends and relatives. Finally, martyrdom includes the notion of "culture of death," also called martyropathy, which alludes to the deep-rooted focus on eternal life in *janna*. For this reason, Osama bin Laden used death cult language profusely. Martyropathy would be less meaningful without blood sacrifice, which is sacrifice of one's life for a culture, nation, cause, or religion. Terrorist organizations have been able to make martyrdom operations achievable by playing up the importance of self-destruction as an act of redemption. Redemption is the exploit of saving oneself (and/or others) from sin so as to avoid eternal damnation. To this effect, redemption is about commitment to one's values and meeting the criteria embedded in those values.

It is the author's hope that this paper on the role of communication in suicide terrorism has contributed fresh insights to a subject that has become increasingly prominent in both Western and non-Western news media.

References

Abufarha, N. (2009). *The making of a human bomb: An ethnography of Palestinian resistance*. Durham, NC: Duke University Press.

Acosta, B. (2016). Dying for survival: Why militant organizations continue to conduct suicide attacks. *Journal of Peace Research, 53*(2), 180–196.

Ahmad, A., & Dein, S. (2016). Does culture impact on notions of criminal responsibility and action? The case of spirit possession. *Transcultural Psychiatry, 53*(5), 674–682.

Al-Dabbagh, U. K. (2015). Patrons and the translation of Arabic fiction into English: Guilty until proven otherwise. *Theory and Practice in Language Studies, 5*(4), 792–799.

al-Shumari, M. (2015). Syria Feature: 10 ways to recognize a suicide bomber. *Orient News*, p. A1. Retrieved from http://eaworldview.com/2015/06/syria-feature-10-ways-to-recognize-a-suicide-bomber/.

Alvanou, M. (2006). Criminological perspectives on female suicide terrorism. In Y. Schweitzer (Ed.), *Female suicide bombers: Dying for equality* (pp. 91–105). Tel Aviv: Jaffe Centre for Strategic Studies (JCSS).

Andreescu, A., & Cosea, R. (2013). Suicidal terrorism women: The new face of terrorism "black widows." In *international scientific conference "Strategies XXI," 1* (pp. 193–199).

Anudeep, A., & Anuj, T. (2015). Brand dictum or factum a critical focus to luxury goods. *South Asian Journal of Marketing & Management Research, 5*(6), 49–60.

Arena, M., & Arrigo, B. (2005). Social psychology, terrorism and identity: A preliminary reexamination of theory, culture, self, and society. *Behavioural Sciences and the Law, 23*(4), 485–506.

Atran, S. (2003). Genesis of suicide terrorism. *Science, 299,* 1534–1539.

Atran, S. (2006). The moral logic and growth of suicide terrorism. *The Washington Quarterly, 29* (2), 127–147.

Atran, S. (2016). The devoted actor: Unconditional commitment and intractable conflict across cultures. *Current Anthropology, 57*(13), 192–203.

Baer, R. (2006). The making of a suicide bomber. *Sunday Times*, p. A1. Retrieved from http://www.thesundaytimes.co.uk/sto/news/article167649.ece.

Baloch, Q. B. (2010). Suicide missions: Power of the powerless and powerlessness of the powerful. *The Dialogue, 2*(2), 45–66.

Barkun, M. (2007). Appropriated martyrs: The Branch Davidians and the radical right. *Terrorism and Political Violence, 19*(1), 117–124.

Barlow, H. D. (2007). *Dead for good*. New York, NY: Paradigm Publishers.

Barlow, H. D. (2015). *Dead for good: Martyrdom and the rise of the suicide bomber*. New York, NY: Routledge.

Bartholet, J. (1995). A guaranteed trip to heaven. *Newsweek, 125*(17), 42. Retrieved from http://connection.ebscohost.com/c/articles/9504187651/guaranteed-trip-heaven.

Bartow, C. (2002). Bassamat Al-Farah (the smile of joy). *Theology Today, 58*(4), 567–570.

Bond, M., Gardner, S. T., & Christian, J. (1983). Empirical study of self-rated defense styles. *Archives of General Psychiatry, 40*(3), 333–338.

Boudry, M., & Coyne, J. (2016). Fakers, fanatics, and false dilemmas: Reply to Van Leeuwen. *Philosophical Psychology, 29*(4), 622–627.

Buruma, I., & Margalit, A. (2004). *Occidentalism: The West in the eyes of its enemies*. New York, NY: Penguin.

Caracci, G. (2002). Cultural and contextual aspects of terrorism. In C. Stout (Ed.), *The psychology of terrorism: Theoretical underpinnings and perspectives* (pp. 57–83). London, UK: Praeger.
Carter, J. (2003). *Understanding religious sacrifice*. New York, NY: Continuum.
Cherrington, D. (1994). *Organizational behaviour*. Boston, MA: Allyn and Bacon.
Chicago Project on Security and Terrorism. (2016). *Suicide attack database*. Chicago: University of Chicago.
Combating Terrorism Center. (2006). *The Islamic imagery project: Visual motifs in jihadi internet propaganda*. West Point, NY: Combating Terrorism Center.
Corman, S., Trethewey, A., & Goodall, H. (2008). *Weapons of mass persuasion*. Bern, Switzerland: Peter Lang.
Dingley, J. (2008). *Combating terrorism in Northern Ireland*. New York, NY: Routledge.
Dingley, J., & Kirk-Smith, M. (2002). Symbolism and sacrifice in terrorism. *Small Wars & Insurgencies, 13*(1), 102–128.
Douzinas, C. (2008). July 2, July 7 and metaphysics. In A. Closs Stephens & N. Vaughan-Williams (Eds.), *Terrorism and the politics of response* (pp. 190–210). Abingdon, England: Routledge.
Edelman, M. (1964). *The symbolic uses of politics*. Urbana: University of Illinois Press.
Eke, S. J. (2015). How and why Boko Haram blossomed: Examining the fatal consequences of treating a purposive terrorist organisation as less so. *Defense & Security Analysis, 31*(4), 319–329.
Falk, O. (2009). Introduction: Overview and historical account of the weapon. In O. Falk & H. Morgenstern (Eds.), *Suicide terror: Understanding and confronting the threat* (pp. 1–30). New York, NY: Wiley.
Flescher, J. (1955). A dualistic viewpoint on anxiety. *Journal of the American Psychoanalytic Association, 3*(3), 415–445.
Freud, S. (1949). *The ego and the id*. London, UK: The Hogarth Press.
Ganor, B. (2001). *Countering suicide terrorism: An international conference*. Herzliya, Israel: ICT.
Gollwitzer, P., & Wicklund, R. (1985). Self-symbolizing and the neglect of others' perspectives. *Journal of Personality and Social Psychology, 48*(3), 702–715.
Haddad, S. (2004). A comparative study of Lebanese and Palestinian perceptions of suicide bombings: The role of militant Islam and socio-economic status. *International Journal of Comparative Sociology, 45*(5), 337–363.
Hafez, M. M. (2006). Dying to be martyrs: The symbolic dimension of suicide terrorism. In A. Pedahzur (Ed.), *Root causes of suicide terrorism: The globalization of martyrdom* (pp. 54–80). New York, NY: Routledge.
Hafez, M. M. (2007). Martyrdom mythology in Iraq: How jihadists frame suicide terrorism in videos and biographies. *Terrorism and Political Violence, 19*(1), 95–115.
Halfmann, J. (2003). *Fundamentalist terrorism: The assault on the symbols of secular power*. Berkeley: Institute of European Studies, UC Berkeley.
Halman, H. T. (2012). Death is its own conquest: The prestige of martyrdom in Palestine. In C. Staudt & M. Block (Eds.), *Unequal before death* (pp. 76–83). Newcastle upon Tyne: Cambridge Scholars Publishing.
Hardt, M., & Negri, A. (2005). *Multitude: War and democracy in the age of empire*. London: Hamish Hamilton.
Hareven, A. (1983). Victimization: Some comments by an Israeli. *Political Psychology, 4*(1), 145–155.
Hassan, N. (2001). An arsenal of believers: Talking to the "human bombs". *The New Yorker, 77* (36), 36–41.
Hassanabadi, F. M. (2016). Training language teachers: An educational semiotic model. *International Journal of Foreign Language Teaching and Research, 3*(12), 53–71.
Hebert, A. (2005). Information battleground. *Air Force Magazine, 7,* 64–67.
Hoffman, B. (2003). The logic of suicide terrorism. *The Atlantic Monthly, 291*(5), 1–10.

Hoffman, B. (2009). Radicalization and subversion: Al Qaeda and the 7 July 2005 bombings and the 2006 airline bombing plot. *Studies in Conflict & Terrorism, 32*(12), 1100–1116.
Hoffman, B., & McCormick, G. (2004). Terrorism, signaling, and suicide attack. *Studies in Conflict and Terrorism, 27*(4), 243–281.
Independent Media Review Analysis. (2004). *A chronology of terrorist attacks carried out by Hamas since September 2000*. Kfar Saba, Israel: Independent Media Review Analysis.
Israeli, R. (2002). A manual of Islamic fundamentalist terrorism. *Terrorism and Political Violence, 14*(4), 23–40.
Jaber, H. (1997). *Hezbollah: Born with a vengeance*. New York, NY: Columbia University Press.
Juergensmeyer, M. (2000). *Terror in the mind of god: The global rise of religious violence* (1st ed.). Berkeley: University of California Press.
Kagan, F. (2003). War and aftermath. *Policy Review, 12,* 10–21.
Khosrokhavar, F. (2005). *Suicide bombers: Allah's new martyrs*. London: Pluto Press.
Kimhi, S., & Even, S. (2006). The Palestinian human bombers. In J. I. Victoroff (Ed.), *Tangled roots: Social and psychological factors in the genesis of terrorism* (pp. 308–323). Landsdale, PA: IOS Press.
Klausen, J. (2015). Tweeting the jihad: Social media networks of Western foreign fighters in Syria and Iraq. *Studies in Conflict & Terrorism, 38*(1), 1–22.
Kobrin, N. H. (2010). *The banality of suicide terrorism: The naked truth about the psychology of Islamic suicide bombing*. Lincoln, NE: Potomac Books.
Leenaars, A. (1988). *Suicide notes*. New York, NY: Human Sciences Press.
Lentini, P. (2015). Demonizing ISIL and defending Muslims: Australian Muslim citizenship and Tony Abbott's "death cult" rhetoric. *Islam and Christian-Muslim Relations, 26*(2), 237–252.
Lewis, B., & Churchill, B. E. (2008). *Islam: The religion and the people*. Philadelphia: Wharton School Publishing.
Lukasik, C. (2016). Conquest of Paradise: Secular binds and Coptic political mobilization. *Middle East Critique, 25*(2), 107–125.
Maarouf, M. (2013). Suicide bombing: The cultural foundations of Morocco's new version of martyrdom. *Journal of Religion and Popular Culture, 25*(1), 10–21.
Mahaffey, B. A., & Wubbolding, R. (2016). Applying reality therapy's WDEP tenets to assist couples in creating new communication strategies. *The Family Journal, 24*(1), 38–43.
Mahan, S., & Griset, P. (2012). *Terrorism in perspective* (3rd ed.). Thousand Oaks, CA: Sage.
Mansdorf, I., & Kedar, M. (2008). The psychological asymmetry of Islamist warfare. *Middle East Quarterly, 15*(2), 37–44.
Marcus, I., & Crook, B. (2012). *Kill a Jew: Go to heaven*. Jerusalem: Palestinian Media Watch.
Maris, R. (2000). *Comprehensive textbook of suicidology*. New York, NY: Guilford Press.
Matusitz, J. (2012). *Terrorism & communication: A critical introduction*. Thousand Oaks, CA: Sage.
Matusitz, J. (2014). *Symbolism in terrorism: Motivation, communication, and behaviour*. Lanham, MD: Rowman & Littlefield.
Matusitz, J. (2016). Martyrdom as a result of psychosocial resilience: The case of Palestinian suicide terrorists. In U. Kumar (Ed.), *The Routledge international handbook of psychosocial resilience* (pp. 285–295). New York, NY: Routledge.
Moghadam, A. (2003). Palestinian suicide terrorism in the Second Intifada: Motivations and organizational aspects. *Studies in Conflict & Terrorism, 26*(2), 65–92.
Msellemu, S. A. (2016). From kamikaze to jihadist: What are its causes? *Journal of Education and Practice, 7*(2), 143–149.
Murray, S. (2006). Thanatopolitics: On the use of death for mobilizing political life. *Polygraph, 18,* 191–215.
Nauta, A. (2013). Radical Islam, globalisation and social media: Martyrdom videos on the internet. In M. Gillespie, D. E. J. Herbert, & A. Greenhill (Eds.), *Social media and religious change* (pp. 121–142). Berlin: De Gruyter.
Olson, L., Finnegan, C., & Hope, D. (2008). *Visual rhetoric: A reader in communication and American culture*. Thousand Oaks, CA: Sage.

Pape, R. (2005). *Dying to win: The strategic logic of suicide terrorism*. New York, NY: Random House.
Pape, R. (2006). *Dying to win: Why suicide terrorists do it*. London: Gibson Square.
Pedahzur, A. (2004). *Suicide terrorism*. New York: Polity.
Pedahzur, A. (2006). *Root causes of suicide terrorism: The globalization of martyrdom*. New York, NY: Routledge.
Perlmutter, D. (2003). *Investigating religious terrorism and ritualistic crimes*. Boca Raton, FL: CRC Press.
Perry, S. P., & Long, J. M. (2016). "Why would anyone sell paradise?" The Islamic State in Iraq and the making of a martyr. *Southern Communication Journal, 81*(1), 1–17.
Post, J. M. (2010). "When hatred is bred in the bone:" The social psychology of terrorism. *Annals of the New York Academy of Sciences, 1208*(1), 15–23.
Richardson, L. (2007). *What terrorists want: Understanding the enemy, containing the threat*. New York: Random House.
Roose, J. M. (2016). *Political Islam and masculinity: Muslim men in Australia*. New York: Palgrave Macmillan.
Rosner, Y., Yogev, E., & Schweitzer, Y. (2014). *A report on suicide bombings in 2013*. Tel Aviv: Institute for National Security Studies.
Smith, J. (2015). *Brodie's bombs and bombings: A handbook to protection, security, detection and investigation for industry, police and fire departments*. Springfield, IL: Charles C. Thomas Publisher.
Sosis, R. (2003). Why aren't we all Hutterites? Costly signaling theory and religion. *Human Nature, 14*(2), 91–127.
Sun Tzu (1963). *The art of war* (trans: Col Griffith, S. B.). London: Oxford University Press.
Taheri, A. (2004). Fascism in Muslim countries. *American Foreign Policy Interests, 26*(1), 21–30.
The Economist. (2004). Martyrdom and Murder. *The Economist, 388,* 10. Retrieved from http://www.economist.com/node/2329785.
Vernon, G. (1970). *Sociology of death: An analysis of death-related behaviour*. New York: The Ronald Press Company.
Wicklund, R., & Gollwitzer, P. (1982). *Symbolic self-completion*. Hillsdale, NJ: Lawrence Erlbaum.
Winkler, J. R. (2015). Reagan and the military. In A. L. Johns (Ed.), *A companion to Ronald Reagan* (pp. 167–183). Hoboken, NJ: Wiley-Blackwell.
Yungher, N. (2008). *Terrorism: The bottom line*. Upper Saddle River, NJ: Prentice Hall.

Part II
Risk Appraisal and Vulnerable Groups

Chapter 10
Suicidal Crises: The Clinical and Research Implications of Overlooking the Role of Suicidal Reactivity

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Despite the development of numerous theories of suicide, creation of various suicide risk assessment measures, and identification of hundreds of risk and protective factors, suicidologists have made very limited progress in the ability to predict suicidal behaviour—particularly within a clinically relevant time period (e.g. Franklin et al., 2017; Glen & Nock, 2014). The transient nature of suicidal thoughts and intentions presents a formidable barrier to accurately assessing near-term suicide risk. Many patients honestly report an absence of suicidal thoughts and urges upon interview, but then have these thoughts and urges quickly resurface under stress (Nock, Prinstein, & Sterba, 2009). Individuals differ in their likelihood of becoming suicidal in the presence of stressors. This "suicidal reactivity" (i.e. the ease with which suicide-relevant physiological, emotional, or cognitive processes are activated by suicide-relevant cues) is explicitly or implicitly included as a component of several extant theories of suicide, but is not consistently emphasized in suicide risk assessment or management. Too often the focus is on the presence or absence of risk and

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protective factors and current thoughts and behaviours, without a deeper examination of the dynamic nature of the way an individual's psychological states, emotional reactions and suicide-related thoughts influence their capacity to solve problems and cope under stress. In this chapter, we examine the construct of suicidal reactivity from the perspective of cognitive models of suicidal behaviour. We propose that the failure to adequately assess suicidal reactivity may be a large contributing factor to the lack of progress in suicide risk assessment, and we review assessment measures relevant to suicidal reactivity. We also describe ways in which suicidal reactivity can be treated and illustrate how better understanding, predicting and preparing for reactivity plays a crucial role in suicide risk assessment, management and treatment. Finally, we argue that a lack of attention to the impact of suicidal reactivity on behaviour during research participation likely impedes our ability to draw meaningful conclusions from suicide research. We propose that suicidal reactivity is in need of additional empirical scrutiny and identify avenues for future research.

What Is Suicidal Reactivity?

"Mark" is a 32-year-old combat Veteran with posttraumatic stress disorder (PTSD) and major depressive disorder, in remission. He struggled to fit back into civilian life after returning from Iraq in 2008. He had trouble controlling his anger, and his relationship with his wife quickly deteriorated. He felt responsible for "ruining" what had once been a loving and supportive marriage. Mark attempted suicide by hanging in 2009 after separating from his wife. After surviving his suicide attempt, he sought mental health treatment, became better able to cope with his PTSD symptoms, and eventually reconciled with his wife. One day while Mark was working in his garage, he put his wedding ring in his pocket to protect it from being damaged; however, when he went to put the ring back on, it had disappeared. He looked everywhere in the garage, but could not find the ring. He was overcome by physical sensations and emotions of panic, guilt and anxious agitation; these sensations and emotions closely mimicked the experiences he had encountered prior to his previous suicide attempt. His mind was flooded with thoughts of the inevitable argument that would follow and the prediction that his wife would leave again. These thoughts triggered patterns of rumination involving perceptions of incompetence and a sense of being a burden to his family. When he saw the rafters in his garage, images of hanging himself quickly came to mind. He felt an urgent need to do something to escape his pain and stop the impact he was having on his family. Mark experienced the activation of previous patterns of thinking (ruminating on thoughts that he was a burden to his family, having images of suicide come to mind), physical sensations (racing heart and nausea associated with panic) and emotions (guilt and anxious agitation), which he associated with suicidal thoughts and behaviours. In other words, the loss of the wedding ring reactivated a suicidal state.

The concept of suicidal reactivity is far from novel and is a component—either implicitly or explicitly—of many theories of suicide. Suicidal reactivity is consistent

with a diathesis-stress model of suicide in which people have or develop an underlying risk of experiencing suicide-related thoughts/images, emotions and physical sensations that increase their susceptibility to engaging in suicidal behaviour. After recovering from an acute episode of distress, this risk lies dormant, but places the individual at an increased likelihood of becoming suicidal when they experience a stressor (Mann, Waternaux, Haas, & Malone, 1999). The state–trait interaction described by the diathesis-stress model is reflected in most cognitive models of suicidal behaviour.

Cognitive Models of Suicidal Behaviour

Like other diathesis-stress models (Mann & Arango, 1992), cognitive models of suicidal behaviour suggest that there is an underlying vulnerability or diathesis as a distal risk factor, which predisposes individuals to suicide under stressful conditions. Figure 10.1 depicts one cognitive model proposed by Wenzel and Beck (2008). There are six key tenets to this model

1. Dispositional vulnerability factors (e.g., overgeneral cognitive style and problem-solving deficits) increase the likelihood that suicide-specific schemas (i.e. maladaptive cognitions and biased information processing) will be activated in the context of life stress either directly (**1a**) or through other pathways, such as through the emergence of psychiatric illness (e.g. mood, anxiety, trauma-related, psychotic disorders; **1b**).
2. Suicide-specific schema and their corresponding cognitive processes are generally believed to be latent or dormant until activation (**2**). Based on this assumption, even if a patient is at high risk of rapidly becoming suicidal, this *may not be evident* to the patient or clinician if the patient is in a fairly *low-stress environment*. However, once a patient is ***re-exposed*** to the stressors or conditions that previously triggered a suicidal crisis s/he may experience the re-emergence of suicidal cognitive contents and processes.
3. Regardless of which pathways (i.e. unique sets of predisposing factors, psychiatric disturbances and/or life events) increased a person's risk for suicide, all pathways eventually converge to activate suicide-specific schemas (**3**). Thus, it may not be the *resting* level of suicidal ideation (SI) and intent that engenders the most vulnerability for suicide, but rather *suicidal reactivity*, the ease with which this latent risk becomes activated (Williams, Van der Does, Barnhofer, Crane, & Segal, 2008) and the severity of activated suicidal thoughts and intentions under significant distress (Michaelis et al., 2004).
4. Suicide-specific schemas are characterized by two types of cognitive processes—maladaptive cognitive contents (i.e. *what* people think about suicide) and information processing biases (i.e. *how* people think when they are suicidal). Negative cognitive content often manifests as thoughts that one's current situation is unchangeable and intolerable (i.e. state hopelessness) (**4a**) and biased

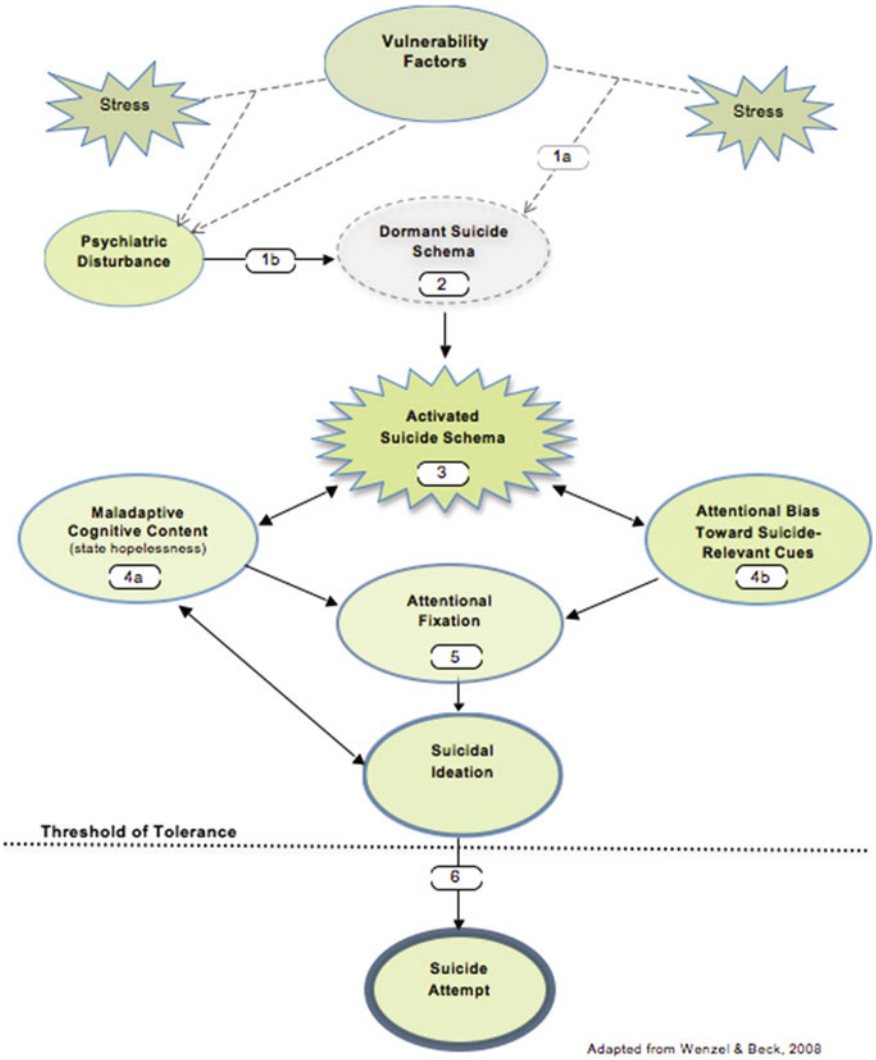

Fig. 10.1 A cognitive model of suicidal behavior. *Source* Adapted from Wenzel and Beck (2008)

information processing emerges as attentional bias toward suicide-relevant stimuli (**4b**).

5. When these two processes converge, individuals may have difficulty disengaging from suicide-relevant stimuli and fixate on suicide as the only viable solution to end suffering (**5**).
6. The transition from suicidal thoughts to behaviour is believed to occur when a person can no longer tolerate this cognitive-emotional state (i.e. the threshold of tolerance) (**6**).

Research on individuals with recurrent depression lends support to the critical role of mood-reactive maladaptive thinking. According to the differential activation hypothesis (Teasdale, 1988), as a result of learning processes, associations are formed between depressed mood and dysfunctional cognitions during periods of depression. These associations remain intact even during remission and can therefore become reactivated when an individual faces even mild mood challenges during remission periods. Importantly, research has supported the association between cognitive reactivity and risk for depressive relapse (Segal, Gemar, & Williams, 1999; Segal et al., 2006).

Given the overlap between depression and suicidal ideation and behaviour, researchers have examined whether suicidal ideation and behaviour may follow a similar pattern that underlies relapse and recurrence in depression. For example, researchers have conceptualized and argued that an extension of Teasdale's differential activation hypothesis (Teasdale, 1988) may be especially well suited to understanding SI and behaviour relapses (Lau, Segal, & Williams, 2004). Critical thought processes and cognitive deficits have been shown to be mood-dependent. For example, individuals with a history of SI during past depressive episodes experience significant decreases in interpersonal problem-solving ability following sad mood inductions (Williams, Barnhofer, Crane, & Beck, 2005). This is particularly relevant given that problem-solving deficits are believed to contribute to suicidal crises (Schotte, Cools, & Payvar, 1990). More recent research has also found that sad mood inductions significantly impact the ability of individuals who have been previously depressed and suicidal to think of positive future events (a skill likely related to hopelessness; Williams et al., 2008). Williams and colleagues noted that: "A small downward shift in sad mood has a subtle but critical impact on those who have been suicidal and hopeless in the past: it blocks the mind's access to positive events in the future" (Williams, Fennell, Barnhofer, Crane, & Silverton, 2015).

Williams et al. (2008) also found that individuals who experienced past SI when depressed were more likely to self-report higher scores on the hopelessness/suicidality subscale on the Leiden Index of Depression Sensitivity (LEIDS), a measure assessing cognitive reactivity to low mood, compared to individuals who had not experienced SI when depressed. Antypa, Van der Does, and Penninx (2010) also found evidence in support of higher LEIDS hopelessness/suicidality scores in individuals with recovered depression and past SI compared to individuals with recovered depression and no past SI; further, this association remained significant after controlling for current depression and SI. In sum, these preliminary studies support the notion that cognitive reactivity, especially reactivity specific to perceptions of hopelessness, may explain why and how SI and behaviours either become chronic and/or reemerge following periods of mild mood changes.

Despite the potential utility and promising findings of Williams et al. (2008) and Antypa et al. (2010), total reliance on cognitive reactivity to explain patterns of SI and behaviour may be too narrow. First, although it is true that a significant portion

of individuals who experience SI and behaviour meet criteria for a depressive diagnosis, a conceptual understanding of suicidal reactivity would benefit from including a broader array of mood-relevant antecedents (e.g. anger) that are not typically emphasized in cognitive reactivity paradigms. This is especially true for the LEIDS, which asks respondents to self-report patterns of behaviour when they are faced with *dysphoric* moods. Williams et al. (2015) themselves have speculated that suicidal thinking should also be associated with other moods that were present during previous episodes of suicidality so that the recurrence of these moods may trigger suicidal thinking. Second, the focus on cognitive reactivity alone may be especially problematic as associated *emotional* and *physiological* reactivity remain important precursors to SI and behaviour.

Rudd's Fluid Vulnerability Theory is another cognitive model of suicidal behaviour, but is transdiagnostic and elaborates on the affective, physiological and behavioural aspects of dynamic suicide risk in its description of the activation of the "suicidal mode" (Rudd, 2006; Rudd, Joiner, & Rajab, 2001). The suicidal mode characterizes suicidal states or episodes and is theorized to comprise four systems: (1) suicidal beliefs (cognitive), (2) affective, (3) physiological and (4) behavioural (motivational). The cognitive system pertains to information processing and recall, and beliefs about the self, others and future (e.g. core beliefs of unlovability, helplessness, poor distress tolerance). The affective system is theorized to produce a range of emotional experiences relevant to suicide (e.g. sadness, anger, anxiety, guilt, shame) and plays an important role in activating the suicidal mode. The physiological system includes the physical sensations associated with an activated suicidal mode (e.g. autonomic arousal). The behavioural (motivational) system includes death-related behaviours, such as preparatory behaviours, planning, rehearsal behaviours and attempts (Rudd et al., 2001). When suicide-relevant negative emotions are associated with an event and the mode is activated, it is more likely to be activated by similar events in the future. Rudd notes that this explains some patients' low threshold for activation of the suicidal mode. The longer patients' suicidal mode is activated, the more generalization to similar situations, leading to a lower activation threshold and a broader range of internal and external triggers. Thus Fluid Vulnerability Theory purports that suicide risk can be understood as a function of suicidal reactivity or the vulnerability to activation of the suicidal mode across all four components (Rudd, 2006).

A core message underlying cognitive models of suicide is that *resting states* are not as important as the *ease of activation* of symptoms in response to mood challenges and reminders of suicide. Despite this, the recognition of *suicidal* reactivity in research and clinical work on self-directed violence has historically been under emphasized. Next, we consider the potential implications of failing to assess suicidal reactivity.

Implications of Failing to Assess Suicidal Reactivity in Clinical Contexts

The consequences of failing to assess suicidal reactivity are notable, with important clinical implications. This becomes apparent when considering the substantial difficulty that clinicians and suicidologists encounter with regard to accurately predicting who will die by suicide and when that will occur (Franklin et al., 2017; Glen & Nock, 2014). We propose that lack of knowledge regarding an individual patient's suicidal reactivity, in addition to the extent and nature of their reactivity, may translate to difficulty obtaining an accurate assessment of suicide risk. Miscalculating a person's risk for suicide can result in failing to implement appropriate interventions to mitigate their risk. For example, judging a patient's acute suicide risk to be lower than it actually is (i.e. false negatives) can, in the worst of circumstances, potentially lead to death. Misclassification of suicide risk in the opposite direction can also produce undesirable consequences. For example, a clinician may overestimate a patient's risk of suicide based on history of a past attempt, despite the patient's low suicidal reactivity making it unlikely that a similarly severe suicidal state would be activated in the future. In such instances, this may result in the clinician erroneously assessing the patient to be at higher imminent risk than s/he actually is (i.e. a false positive) and implementing more intensive and restrictive interventions than what is required, potentially harming the therapeutic relationship, and dissuading the patient from subsequently disclosing suicidal thoughts. Over the long run, this could serve to increase chronic risk for suicide. Further, this does not begin to address the financial and emotional cost of inappropriate psychiatric hospitalization to patients, nor the stigma that many patients may also experience upon being hospitalized. Thus, any conceptual and empirical advances that can help clinicians more accurately estimate patients' risk for suicide and when this may occur is essential to preventing these adverse outcomes. We propose that assessing patients' suicidal reactivity may be one pathway to accomplish this.

Assessing Suicidal Reactivity Within Clinical Contexts

Considering this, how can clinicians assess suicidal reactivity with their patients? We are not aware of any measures that currently exist to comprehensively assess suicidal reactivity with patients in the manner described above (i.e. physiological, emotional and cognitive). Clearly, such measures are needed to advance research in this area and to facilitate assessing reactivity within clinical contexts. Given the theoretical emphasis on the importance of *activated* rather than *resting* states, it is not sufficient to merely assess current suicidal thoughts and behaviours.

However, without measures designed to assess suicidal reactivity, clinicians must rely on alternate methods. Below we describe several potential methods for assessing suicidal reactivity within a therapeutic context. A note of caution—however, these suggestions are based upon limited research. Future research is essential for ultimately determining the most appropriate and useful methods for assessing suicidal reactivity as we have conceptualized it in this chapter.

Self-report

To our knowledge, no self-report measures exist for comprehensively assessing suicidal reactivity, as it is conceptualized herein. However, measures have been developed to assess cognitive reactivity among depressed/formerly depressed individuals. The Leiden Index of Depression Sensitivity (LEIDS; Van der Does, 2002), a self-report measure, was developed to assess patients' cognitive reactivity to low mood in the absence of mood induction techniques. The items included in the LEIDS were derived from the authors' clinical experience, review of cognitive treatment resources and expert review (Van der Does, 2002). When completing the LEIDS, participants are instructed to "take a moment to imagine or recall a mildly sad mood state" (p. 2) and subsequently rate the extent to which a series of statements describe them when in such a state, with statements phrased conditionally (i.e. within that mood state) and relative to when they are not in a dysphoric state (Solis, Antypa, Conijn, Kelderman, & Van der Does, 2016). For example, "*When I feel sad, I feel as if I care less if I lived or died*" (Solis et al., 2016).

The LEIDS has been subjected to psychometric evaluation within different samples, resulting in multiple versions (Solis et al., 2016; Van der Does, 2002; Van der Does & Williams, 2003). The most recent version, the LEIDS-RR, includes 30 items and produces a total score for overall cognitive reactivity, in addition to five subscale scores: Acceptance, Control, Aggression, Hopelessness/Suicidality and Avoidant Coping (Solis et al.). Research suggests that the LEIDS is indeed associated with cognitive reactivity via mood induction (Van der Does, 2002). In addition, as described previously, individuals who experienced SI during a depressive mood episode report higher scores on the LEIDS Hopelessness/Suicidality subscale (Williams et al., 2008).

Although the LEIDS may be useful for assessing patients' cognitive reactivity to depressed mood, it does not assess the other two components proposed to comprise suicidal reactivity—physical or emotional reactivity. Another limitation of using the LEIDS to assess suicidal reactivity is that it assesses reactivity to depressed mood specifically, rather than to idiographically suicide-relevant moods. This is problematic considering that, for many patients, emotional precipitants to suicidal thoughts and behaviours may extend beyond depression and encompass other emotions (e.g. anger, agitation, anxiety).

Until methods are developed and validated for assessing all three components of suicidal reactivity, one option for clinicians is to administer existing measures of cognitions, emotions and physiological sensations, but to modify the instructions to ask patients to respond to the questions based on their experience/beliefs when they were "most suicidal." Depending on the ability of the patient to accurately recall these retrospectively, this may help the clinician ascertain the patient's idiographic triggers of suicidal states and gauge the extent of suicidal thoughts and behaviours if activation were to occur. However, "worst-point" suicidality might not necessarily reflect the ease with which a similar suicidal state will be reactivated in the future.

Clinical Interview

Given the paucity of measures that have been developed to assess suicidal reactivity, the clinical interview may be the most open-ended and flexible option for assessing suicidal reactivity. Some structured clinical interviews include questions about worst-point suicidal ideation and behaviours (e.g. the Self-Injurious Thoughts and Behaviours Interview; Nock, Holmberg, Photos, & Michel, 2007). One advantage of the clinical interview is that such questions can be tailored to assess all three components of suicidal reactivity (i.e. cognitive, emotional, physiological). In addition, the clinical interview can be used to assess the likelihood of suicidal reactivation, the extent of the activation (e.g. duration, intensity), as well as the specific situations that elicit the reactivity. Examples of questions that clinicians might ask their patients to assess this may include the following: *Immediately prior to experiencing the urge to kill yourself... what thoughts were going through your mind? what emotions were you experiencing? how did your body feel? How easily are these thoughts, emotions, and sensations triggered? What types of situations elicit these? When you experience these thoughts, emotions, and sensations how long do they last? How intense are those feelings/urges?* Utilizing the structure of the LEIDS (Van der Does, 2002), patients can also be asked to reflect on the times that they felt most suicidal and to complete the following statement: "*When I am suicidal, I…*" and then describe the specific emotions, thoughts and physiological sensations that accompany their experiences of suicidality. A limitation of relying exclusively upon the clinical interview, however, is that it is contingent upon the patient's ability to accurately discern their prior experiences, to effectively communicate these to the provider, and to be forthright in conveying these. For patients with memory impairment or whose most severe suicidal crises occurred more distally, this may present a particularly formidable challenge. Recalling these while in a non-suicidal state also may be challenging. One potential solution to this is utilizing chain analysis with patients.

Chain Analysis

Chain analysis is a technique often used within cognitive and behavioural therapies, including dialectical behavioural therapy (c.f. Rizvi & Ritschel, 2014) and cognitive behavioural therapy for suicide prevention (Stanley et al., 2009). This technique may be particularly useful for determining the specific stimuli that elicit the activation of suicidal states for an individual, as well as the potential consequences of this activation. In chain analysis, individuals identify a specific event or antecedent (e.g. being reprimanded by their boss) that elicited the problematic behaviour (e.g. stockpiling medications for an overdose) and then identify the specific thoughts, behaviours and emotions that connect the initial event to the subsequent behaviour. Thus, chain analysis can be used collaboratively with patients to elicit the specific experiences (cognitions, emotions and physiological sensations) that prompted them to engage in suicidal self-directed violence (Stanley et al., 2009). Chain analysis can also be applied to suicidal ideation, urges and preparatory behaviours (Rizvi & Ritschel, 2014). Once the clinician has a clear understanding of the patient's suicidal states and their triggers, the assessment can focus on the ease with which these states are triggered.

Final Comments

Finally, clinicians may find opportunities within their work with individual patients to assess their suicidal reactivity. For example, this may occur spontaneously through observation—such as when a patient calls in crisis, arrives at the therapy session immediately following a stressful event, or when the therapeutic content itself activates cognitions, emotions and sensations which cause the individual to desire suicide. Such opportunities may provide important context to augment information gleaned from clinical interview or chain analysis, particularly when accompanied by an open and supportive discussion with the patient.

Treatment Considerations

The following treatment considerations are based on the underlying concept of suicidal reactivity, which is grounded in a diathesis-stress framework. By taking into account both the underlying vulnerability processes (e.g. hopelessness, problem-solving difficulties, poor impulse control) and conditions that activate these processes (e.g. psychosocial stressors), we highlight interventions that focus on two main elements: modifying reactions to stressors to decrease the ease with which these vulnerability processes are activated; and increasing an individual's coping repertoire in the presence of suicidal reactivity. Both of these components

are designed to shift the trajectory of suicidal reactivity and mitigate its impact on suicidal behaviour, albeit at slightly different points along the trajectory (i.e. upstream to prevent suicidal reactivity and downstream following activation).

Research demonstrates that both hopelessness and problem-solving difficulties, proposed markers of vulnerability for suicide, improve rapidly in the days following a suicidal crisis, even in the absence of treatment (Schotte, Cools, & Payvar, 1990). This suggests that vulnerability processes may be latent between suicidal episodes, but are quickly and automatically reactivated by even small changes in mood and other internal states (Williams, Duggan, Crane, & Fennell, 2006). Furthermore, Rudd (2006) noted the importance of addressing the entire suicidal mode in treatment, rather than solely focusing on cognitive reactivity. A low threshold for activation in any of the four components of the suicidal mode (i.e. cognitive, affective, physiological and behavioural) would undermine progress in the other areas. Thus, interventions designed to stifle the activation of vulnerability processes by thoroughly addressing all aspects of suicidal reactivity and improving the ability to tolerate and cope with crises may be particularly important for reducing suicide risk. A number of intervention approaches may be well suited for this.

Traditional Cognitive-Behavioural Interventions

Exposure-Based Interventions. Exposure-based interventions [e.g. prolonged exposure therapy (PE); Foa, Hembree, & Rothbaum, 2007] can target the salience of specific stressors and triggers that elicit or activate vulnerability processes. For example, in the case of suicidal reactivity in the context of PTSD, exposure may focus on habituation of key triggers or states that are associated with suicide (e.g. physiological arousal or emotional distress associated with trauma reminders). Thorough assessment, as discussed earlier in this chapter, can aid this process and identify specific treatment targets for habituation. The main goal of exposure therapy is to help the patient stay in contact with the trigger (e.g. reminders of combat that contribute to feelings of guilt triggering SI), without engaging in avoidance or escape processes (e.g. substance use, SI). This can be done gradually and systematically both in session (imaginal exposure) and as part of homework outside of sessions (in vivo exposure). As individuals habituate to specific triggers or cues, the therapist can gradually increase the intensity or severity of triggers associated with the trauma that are targeted for habituation. Through this process, individuals learn that they can tolerate their distress, which allows them to confront and disconfirm maladaptive cognitions that often underlie and maintain PTSD. Another goal of exposure-based interventions is to help clients persist in previously avoided activities by using effective coping strategies (e.g. breathing techniques). Combining coping skills practice with exposure to stressors may be particularly important because, without a sufficient amount of affective stimulation, patients may not experience the emotional arousal necessary to develop an increased

tolerance for the stressors and triggers that contribute to suicidal reactivity (Brier & Scott, 2006).

Cognitive Re-appraisal. Cognitive re-appraisal may also be useful in preventing the escalation of suicide-specific vulnerability processes. Cognitive re-appraisal is a central component of cognitive and cognitive-behavioural therapies that involves reinterpreting or reframing an event to change the trajectory of an emotional response (Gross, 1998; Ray, McRae, Ochsner, & Gross, 2010). Numerous studies have demonstrated improvement in acute stress responses by altering appraisals of arousal (c.f. Jamieson, Mendes, & Nock, 2013). In these studies, participants who were prompted to reframe the meaning of the physiological signals associated with stress as functional and adaptive reported more positive physiological and cognitive outcomes (e.g. increased cardiac efficiency and decreased attentional bias) than those who did not engage in re-appraisal (Jamieson et al., 2013; Jamieson, Mendes, Blackstock, & Schmader, 2010; Jamieson, Nock, & Mendes, 2012). Moreover, re-appraisal instructions have been shown to sufficiently alter affective, physiological and cognitive processes, which suggests that changing cognitions does, in fact, produce beneficial downstream benefits (Jamieson et al., 2013). With respect to suicidal reactivity, cognitive re-appraisal of suicide-relevant cues may prevent further escalation of negative appraisals and other cognitive processes (e.g. rumination) that contribute to hopelessness. It may also be the case that re-appraisal frees up resources to engage in more effective problem solving, allowing individuals to think of more adaptive solutions in response to suicide-specific thoughts and urges.

Cognitive Therapy for Suicidal Patients (CT-SP). CBT-SP (Wenzel, Brown, & Beck, 2009) delineates the application of cognitive therapy to suicide prevention. Cognitive strategies (e.g. cognitive re-appraisal and restructuring) are used to address suicide-specific vulnerability factors and promote adaptive problem solving during suicidal crises (Wenzel et al., 2009). Specifically, CT-SP focuses on identifying acute risk factors and stressors, including emotional, cognitive and behavioural processes (e.g. deficits in problem solving, poor distress tolerance and hopelessness) associated with a recent suicidal crisis (Brown et al., 2005; Wenzel et al., 2009). These risk factors are identified by conducting a detailed chain analysis of the sequence of events and associated reactions that led to the suicidal crisis. Cognitive and behavioural strategies are subsequently used to help individuals develop more adaptive ways of coping with stressors. Another important component of CT-SP is the introduction of the relapse prevention task. This "in vivo" task consists of priming the specific thoughts, images and feelings associated with prior suicide attempts in the therapy session to determine if individuals are able to respond to such stimuli adaptively (Brown et al., 2005). This component of CT-SP is particularly important because it is designed to assess whether the skills and coping strategies acquired during earlier phases of treatment can be implemented to effectively manage vulnerability processes associated with acute suicidal crises.

Third-Wave Cognitive-Behavioural Interventions

Mindfulness-Based Cognitive Therapy (MBCT). Traditional cognitive-behavioural interventions often rely on techniques designed to change the form of cognitions (e.g. cognitive re-appraisal). In contrast, mindfulness is common in third-wave cognitive-behavioural interventions [e.g. MBCT (Segal, Williams, & Teasdale, 2002); Dialectical Behaviour Therapy (DBT; Linehan, Armstrong, Suarez, Allmon, & Heard, 1991); and Acceptance and Commitment Therapy (ACT; Hayes, Stosahl, & Wilson, 1999)] and is intended to help individuals develop a different relationship with the thoughts, feelings and physical sensations that often contribute to suicidal reactivity (Williams et al., 2006). Thus, the emphasis is on helping patients become more aware of these negative internal states and to respond differently to them, without trying to change them. In doing so, mindfulness skills are designed to decrease reactivity in the face of negative-affect producing stressors that may prompt a suicidal crisis. For example, MBCT has primarily been used to target vulnerability processes (i.e. cognitive reactivity) which play a causative role in depressive relapse (Segal et al., 2006). Moreover, recent research has shown that suicidal ideation and behaviour are associated with distinct patterns of cognitive reactivity (Lau et al., 2004; Williams et al., 2005, 2008). These findings have prompted the expansion of MBCT for use with patients who experience suicidal thoughts and behaviours during depressive episodes (Barnhofer et al., 2015; Hargus, Crane, Barnhofer, & Williams, 2010; Williams et al., 2015).

In MBCT, mindfulness is thought to contribute to an increased awareness that allows individuals to identify even subtle changes in mood and internal states that often trigger the reactivation of a suicidal state (Barnhofer & Crane, 2009). Individuals are taught to disengage from maladaptive responses such as rumination, which allows them to experience difficult and aversive thoughts and emotions in more adaptive ways, adopting an attitude of acceptance rather than avoidance (Barnhofer & Crane, 2009). MBCT teaches individuals to experience suicidal thoughts as part of a passing mind state, rather than truths to be acted upon (Williams, Duggan, Crane, & Fennell, 2006). Preliminary research suggests that MBCT enables patients to reflect on instances of previous suicidal crises in a more decentered way, allowing them to relate to such experiences in a way that reduces vulnerability for future relapses (Barnhofer et al., 2015; Hargus et al., 2010).

Dialectical Behaviour Therapy (DBT). Mindfulness techniques have been incorporated in other therapies designed to target suicidal self-directed violence, such as DBT (Linehan et al., 1991). DBT was developed for treating individuals with borderline personality disorder who engage in repeated suicidal and non-suicidal self-directed violence. Its overarching goal is reducing maladaptive behaviours (e.g. self-directed violence) associated with deficits in problem-solving, emotional regulation and impulse control. The four components of DBT (mindfulness, interpersonal effectiveness, emotional regulation and distress tolerance) have direct implications for treating vulnerability factors underlying suicidal reactivity, while also increasing an individual's coping repertoire in the presence of

suicidal thoughts and urges. Core *mindfulness skills* are taught to promote wise mind, the state of the mind that is a synthesis of reason and logic (reasonable mind) and emotions and intuition (emotion mind) (Linehan, 1993b). Mindfulness in this sense is also intended to increase awareness of experience, as well as distress tolerance, by encouraging acceptance.

Given that interpersonal stressors are often precursors to suicidal crisis, teaching *interpersonal effectiveness* can be particularly useful in mitigating triggers related to suicidal reactivity. For example, interpersonal effectiveness skills in DBT focus on effective strategies for asking for one's needs, saying no, and coping with interpersonal conflict. Moreover, DBT is intended to improve application of these skills to distressing situations to maximize opportunities for successfully mitigating conflict, and reduce suicidal reactivity. Other core treatment targets of DBT include improving *distress tolerance* and *emotional regulation*. Specifically, patients are taught that there will be times in life when pain is inevitable and that, rather than trying to avoid the pain, sometimes the best way forward is to learn to accept and tolerate it. Along these lines, distress tolerance behaviours are concerned with both tolerating and surviving crises and with accepting life as it is in the moment. Patients learn different sets of crisis survival strategies, including distraction, self-soothing, improving the moment and thinking of pros and cons (Linehan, 1993a, b). Finally, emotional regulation strategies focus on improving management of negative, distressing emotions and increasing positive experiences. This includes helping individuals to recognize and correctly label emotions, reduce emotional vulnerabilities (e.g. engage in positive behaviours, such as exercise, proper diet and sleep that will reduce susceptibility to negative emotions) and decrease emotional suffering (Linehan, 1993a, b). Together, these skills are intended to not only mitigate crisis, but also facilitate coping in the midst of crises (e.g. following activation of a suicidal state).

To date, several randomized controlled trials (RCTs) have demonstrated that DBT is an efficacious treatment for borderline personality disorder and associated problems, including suicidal self-directed violence. Studies examining the underlying mechanisms of change in DBT have not focused specifically on the concept of cognitive or suicidal reactivity per se, but have identified several potential mechanisms relevant to this concept. Specifically, many of the proposed mechanisms of change work to establish an internal context that maintains the extinction of unwanted responses and promotes the acquisition of new responses (Lynch et al., 2006). In other words, many of these mechanisms can be distilled down to the: (a) reduction of ineffective action tendencies (e.g. poor problem solving, suicidal behaviour) linked with dysregulated emotions and other negative internal states (Chapman & Linehan, 2005; Lynch et al., 2006) and (b) expansion of new behaviours and processes (e.g. mindfulness, distress tolerance) that work to reduce suicidal reactivity and improve coping in the presence of suicidal thoughts and urges.

Safety Planning

Improving adaptive responses in the midst of a suicidal crisis can improve people's ability to cope with future sources of suicidal activation. Thus, interventions designed to improve coping following suicidal activation (i.e. just prior to or during a suicidal crisis) are also needed to effectively prevent suicidal self-directed violence. Safety planning is one such intervention. Safety planning is a stand-alone intervention that provides patients with a hierarchical and prioritized list of coping strategies and sources of support that can be used during a suicidal crisis, including a section on means safety. Given mood-reactive deficits in problem solving, the intent of safety planning is to help individuals lower their acute risk for suicidal self-directed violence by developing a pre-established set of potential coping strategies and sources of support to avoid turning to suicide as a solution. Table 10.1 provides an overview of the six steps involved in the development of a safety plan.

Table 10.1 Six steps of the safety plan

Safety planning steps and purpose	Questions to ask
Step 1: Warning signs To help the individual identify and pay attention to his/her warning signs; promotes early coping to reduce impact of suicidal reactivity	"How will you know when the safety plan should be used?" "What do you experience when you start to think about suicide or feel extremely distressed?"
Step 2: Internal coping strategies To identify activities and coping strategies that the individual can engage in on their own; to reduce impact of suicidal reactivity	"What can you do on your own, if you become suicidal again, to help prevent yourself from acting on your thoughts or urges?"
Step 3: Social contacts who may distract from the crisis To engage with people and social settings that may offer distraction from the crisis without informing others that they are in distress	"Who or what social settings help you take your mind off your problems at least for a little while?" "Who helps you feel better when you socialize with them?"
Step 4: Family members and friends who may offer help To explicitly tell a family member or friend that he/she is in crisis and needs support	"Among your family or friends, who do you think you could contact for help during a crisis?" "Who is supportive of you and who do you feel that you can talk with when you're under stress?"
Step 5: Professionals and agencies to contact for help To contact a professional if the previous steps do not work to resolve the crisis	"Who are the mental health professionals/health care providers that we should identify to be on your safety plan?"
Step 6: Keeping the environment safe To eliminate or limit access to any potential lethal means. This step should be completed even if the individual has not identified a suicide plan	"What means do you have access to that you may use to attempt to kill yourself?" "How can we go about developing a plan to limit your access to these means?"

Source Adapted from Stanley and Brown (2008)

Anecdotally, the most common reason provided for a safety plan not "working" is that it is not used when an individual is in a suicidal crisis. To increase the likelihood that a safety plan will be utilized just prior to or following activation of a suicidal state, it is critical that individuals have practiced using their plan (e.g. monitoring for warning signs, practicing coping techniques) on a regular basis and that the safety plan is readily available at the time of a crisis. Providing patients with a strong rationale by tapping into their own experiences of difficulty making good decisions when distressed can help motivate this practice and encourage the adaptive behaviours to become over-learned and automatic (Stanley & Brown, 2008).

Many of the treatment considerations reviewed above are based on our conceptual understanding of suicidal reactivity. However, more research is needed to not only advance our empirical understanding of suicidal reactivity, but to also identify effective interventions that target suicidal reactivity. Thus, an important avenue for future research is to examine whether the psychological interventions discussed above can reduce suicidal reactivity by examining changes in suicidal reactivity before, during, and following these different modalities of treatment. Further implications for research are discussed below.

Research Implications and Future Directions

Although the research implications for not assessing suicidal reactivity overlap with those described in the suicide assessment section, in this section we consider the broader consequences of not incorporating suicidal reactivity in research endeavours. As previously mentioned, despite the fact that the concept of suicidal reactivity is an aspect embedded within several theories of suicide, there remains limited empirical research testing the construct directly, with an even greater paucity of evidence testing ways to incorporate the construct into research designs. As such, we discuss how lack of incorporation of suicidal reactivity may significantly limit suicide research and suggest possible areas for future research.

A significant portion of suicidology research has asked participants to self-report on an extensive array of possible risk factors to determine what factors differentiate those who do and do not experience various forms of suicidal thoughts and behaviours. Most participants, by the very proxy of being able to participate in research, are not in an active or acutely suicidal state. Nearly all database (i.e. medical record review, pre-deployment survey based datasets) methodological approaches also likely consist of individual-level data drawn from non-acute states. Research findings therefore, are being derived from *resting* states, which likely do not correspond to experiences that are encountered during suicidal crises or provide any data as to how *reactivity* may impact these states. For example, research participants may be asked to indicate the extent to which they agree or disagree with statements such as feeling like a burden or perceptions of not belonging. Although the extent to which the participant identifies with these statements is partially driven by their baseline cognitions, these beliefs would likely intensify immediately prior

to and during a suicidal crisis. Thus, by not accounting for these critical fluctuations, the predictive validity of empirical data on key suicide risk factors may be quite limited. Moreover, most research paradigms do not assess the ease by which these beliefs fluctuate, further reducing the ability to ascertain how this susceptibility may differentially be associated with increased risk for suicide.

To address the limitation of assessing individuals during *resting* states, an important first line of research is to directly assess aspects of suicidal reactivity in suicidology research. By incorporating assessment of suicidal reactivity, researchers could gain important information relevant to who is and who is not characterized as having an underlying susceptibility to future SI and behaviour by measuring the ease with which relevant stimuli activate physiological, emotional and cognitive processes associated with suicidal thoughts and behaviours. To facilitate future research on this topic, new self-report measures that assess aspects of suicidal reactivity need to be developed. Although this assessment tool may be similar in design to the LEIDS, ideally the measure will include instructions that prompt the individual to think about their most severe or recent episode of SI or behaviour instead of general dysphoric states. Furthermore, given the underlying conceptual model of suicidal reactivity, we believe it is necessary to structure an assessment to gather data across cognitive, emotional and physiological domains (cf., Rudd, Joiner, & Rajab, 2000). Not only would this diversified information assist with better understanding the role of suicidal reactivity in risk for suicide, it would also provide a comprehensive framework to inform psychological interventions across various modalities.

As is the case with general self-reporting of suicidal thoughts and behaviours, self-reports can be biased. Although this bias may not be intentional, individuals may inaccurately predict their experiences when asked to consider their responses during suicidal reactivity assessments. The use of behavioural paradigms when assessing suicidal reactivity may be additionally helpful as behavioural paradigms circumvent the need for individuals to accurately report on previous or potential future behaviours. Thus, it may be useful for future studies to not only collect suicidal reactivity data by self-report but also during behavioural paradigms designed to elicit the suicidal reactivation under assessment. Borrowing again from the depression literature, the use of a mood induction prior to assessment of suicidal reactivity could be especially useful. Given that suicidal states may be associated with emotions diversified from sadness, we again argue that mood inductions should be ideographically based and specific to suicide. We are currently validating and demonstrating the safety of one such mood induction procedure utilizing a suicide-related movie clip from the Dead Poets Society (Weir, 1989), to depict a character contemplating suicide while also playing a somber song, “Mad World” (Andrews & Jules, 2001). As described in previous research, the combined use of visual and audio clips may be especially effective at eliciting the desired emotional state (Gerrards-Hesse, Spies, & Hesse, 1994; Martin, 1990; Vastfjall, 2002; Westermann, Spies, Stahl, & Hesse, 1996), which would be key to maximizing the reliability and validity of the induction. Furthermore, the utilization of suicide-specific stimuli is especially important, as the antecedents to reactivity may be specific to suicidal states, and not just general dysphoric mood.

When researchers have developed valid methods to collect self-report and behavioural data on suicidal reactivity, we encourage an additional line of research that incorporates mood paradigms designed to safely elicit mild suicidal states prior to research methodologies that may be differentially impacted by resting versus activated states. For example, studies could evaluate the predictive validity of behavioural suicide risk assessments, such as the death/suicide Implicit Association Test (IAT; Nock et al., 2010), when participants either undergo a suicide-specific mood paradigm prior to the IAT versus no induction (i.e. resting state). Assessment following temporary activation of dormant risk may optimize capacity to predict suicidal behaviour and, one day, may inform treatment decisions.

Conclusion

Throughout this chapter, we have offered a conceptualization of suicidal reactivity that is drawn from theories of suicide and psychopathology more broadly. Although the concept of reactivity is not novel to the field of suicidology, we offer a broader framework upon which clinicians and researchers may begin to investigate the role that *suicidal* reactivity may play in suicide risk assessment, treatment and research methodology. Borrowing heavily from the depression literature, this chapter highlights several aspects of inquiry that may not only improve our understanding of who is at greatest risk for suicide, but offer new ways of considering when, why and how that risk dynamically fluctuates over time. We encourage continued research on this topic to further suicidology research and by extension, to improve our assessment, management and intervention of individuals at risk for suicide.

References

Andrews, M., & Jules, G. (2001). Mad World. *Trading snakeoil for wolftickets* [CD]. UK: Sanctuary Records.

Antypa, N., Van der Does, A. J. W., & Penninx, B. W. J. H. (2010). Cognitive reactivity: Investigation of a potentially treatable marker of suicide risk in depression. *Journal of Affective Disorders, 122*(1–2), 46–52.

Barnhofer, T., & Crane, C. (2009). Mindfulness-based cognitive therapy for depression and suicidality. In Didonna, F. (Ed.), *Clinical handbook of mindfulness* (pp. 221–243). New York: Springer.

Barnhofer, T., Crane, C., Brennan, K., Duggan, D. S., Crane, R. S., Eames, C., … Williams, J. M. G. (2015). Mindfulness-based cognitive therapy (MBCT) reduces the association between depressive symptoms and suicidal cognitions in patients with a history of suicidal depression. *Journal of Consulting and Clinical Psychology, 83*(6), 1013–1020.

Briere, J., & Scott, C. (2006). *Principles of trauma therapy: A guide to symptoms, evaluation, and treatment*. Thousand Oaks, CA: Sage Publications.

Brown, G. K., Ten Have, T., Henriques, G. R., Xie, S. X., Hollander, J. E., & Beck, A. T. (2005). Cognitive therapy for the prevention of suicide attempts: A randomized controlled trial. *Journal of American Medical Association, 294*(5), 563–570.

Chapman, A. L., & Linehan, M. M. (2005). Dialectical behaviour therapy for borderline personality disorder. In M. Zanarini (Ed.), *Borderline personality disorder* (pp. 211–242). Florida: Taylor & Francis.

Foa, E. B., Hembree, E. A., & Rothbaum, B. O. (2007). *Prolonged exposure therapy for PTSD: Emotional processing of traumatic experiences: Therapist guide*. New York: Oxford University Press.

Franklin, J. C., Ribeiro, J. D., Fox, K. R., Bentley, K. H., Kleiman, E. M., Huang, X., … Nock, M. K. (2017). Risk factors for suicidal thoughts and behaviours: A meta-analysis of 50 years of research. *Psychological Bulletin, 143*(2), 187–232.

Gerrards-Hesse, A., Spies, K., & Hesse, F. W. (1994). Experimental inductions of emotional states and their effectiveness: A review. *British Journal of Psychology, 85*(1), 55–78.

Glen, C. R., & Nock, M. K. (2014). Improving the short-term prediction of suicidal behaviour. *American Journal of Preventative Medicine, 47*(3S2), S176–S180.

Gross, J. J. (1998). Antecedent-and response-focused emotion regulation: Divergent consequences for experience, expression, and physiology. *Journal of Personality and Social Psychology, 74* (1), 224–237.

Hargus, E., Crane, C., Barnhofer, T., & Williams, J. M. G. (2010). Effects of mindfulness on meta-awareness and specificity of describing prodromal symptoms in suicidal depression. *Emotion, 10*(1), 34–42.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy: An experiential approach to behaviour change*. New York: The Guilford Press.

Jamieson, J. P., Mendes, W. B., Blackstock, E., & Schmader, T. (2010). Turning the knots in your stomach into bows: Reappraising arousal improves performance on the GRE. *Journal of Experimental Social Psychology, 46*(1), 208–212.

Jamieson, J. P., Mendes, W. B., & Nock, M. K. (2013). Improving acute stress responses the power of reappraisal. *Current Directions in Psychological Science, 22*(1), 51–56.

Jamieson, J. P., Nock, M. K., & Mendes, W. B. (2012). Mind over matter: Reappraising arousal improves cardiovascular and cognitive responses to stress. *Journal of Experimental Psychology: General, 141*(3), 417–422.

Lau, M. A., Segal, Z. V., & Williams, J. M. G. (2004). Teasdale's differential activation hypothesis: Implications for mechanisms of depressive relapse and suicidal behaviour. *Behaviour Research and Therapy, 42*(9), 1001–1017.

Linehan, M. M. (1993a). *Cognitive behavioural treatment of borderline personality dlisorder*. New York: Guilford.

Linehan, M. M. (1993b). *Skills training manual for treating borderline personality disorder*. New York: Guilford.

Linehan, M. M., Armstrong, H. E., Suarez, A., Allmon, D., & Heard, H. L. (1991). Cognitive-behavioural treatment of chronically parasuicidal borderline patients. *Archives of General Psychiatry, 48*(12), 1060–1064.

Lynch, T. R., Chapman, A. L., Rosenthal, M. Z., Kuo, J. R., & Linehan, M. M. (2006). Mechanisms of change in dialectical behaviour therapy: Theoretical and empirical observations. *Journal of Clinical Psychology, 62*(4), 459–480.

Mann, J. J., & Arango, V. (1992). Integration of neurobiology and psychopathology in a unified model of suicidal behaviour. *Journal of Clinical Psychopharmacology, 12*(2), 2S–7S.

Mann, J. J., Waternaux, C., Haas, G. L., & Malone, K. M. (1999). Toward a clinical model of suicidal behaviour in psychiatric patients. *American Journal of Psychiatry, 156*(2), 181–189.

Martin, M. (1990). On the induction of mood. *Clinical Psychology Review, 10*(6), 669–697.

Michaelis, B. H., Goldberg, J. F., Davis, G. P., Singer, T. M., Garno, J. L., & Wenze, S. J. (2004). Dimensions of impulsivity and aggression associated with suicide attempts among bipolar patients: A preliminary study. *Suicide and Life Threatening Behaviour, 34*(2), 172–176.

Nock, M. K., Holmberg, E. B., Photos, V. I., & Michel, B. D. (2007). Self-injurious thoughts and behaviours interview: Development, reliability, and validity in an adolescent sample. *Psychological Assessment, 19*(3), 309–317.

Nock, M. K., Park, J. M., Finn, C. T., Deliberto, T. L., Dour, H. J., & Banaji, M. R. (2010). Measuring the suicidal mind: Implicit cognition predicts suicidal behaviour. *Psychological Science, 21*(4), 511–517.

Nock, M. K., Prinstein, M. J., & Sterba, S. K. (2009). Revealing the form and function of self-injurious thoughts and behaviours: A real-time ecological assessment study among adolescents and young adults. *Journal of Abnormal Psychology, 118*(4), 816–827.

Ray, R. D., McRae, K., Ochsner, K. N., & Gross, J. J. (2010). Cognitive reappraisal of negative affect: Converging evidence from EMG and self-report. *Emotion, 10*(4), 587–592.

Rizvi, S. L., & Ritschel, L. A. (2014). Mastering the art of chain analysis in dialectical behaviour therapy. *Cognitive and Behavioural Practice, 21*(3), 335–349.

Rudd, M. D. (2006). Fluid vulnerability theory: A cognitive approach to understanding the process of acute and chronic suicide risk. In T. E. Ellis (Ed.), *Cognition and suicide: Theory, research, and therapy* (pp. 355–368). Washington, DC: American Psychological Association.

Rudd, M. D., Joiner, T. E., & Rajab, M. H. (2001). *Treating suicidal behaviour: An effective, time-limited approach*. New York, NY: Guilford Press.

Schotte, D. E., Cools, J., & Payvar, S. (1990). Problem-solving deficits in suicidal patients: Trait vulnerability or state phenomenon? *Journal of Consulting and Clinical Psychology, 58*(5), 562–564.

Segal, Z. V., Gemar, M., & Williams, S. (1999). Differential cognitive response to a mood challenge following successful cognitive therapy or pharmacotherapy for unipolar depression. *Journal of Abnormal Psychology, 108*(1), 3–10.

Segal, Z. V., Kennedy, S., Gemar, M., Hood, K., Pedersen, R., & Buis, T. (2006). Cognitive reactivity to sad mood provocation and the prediction of depressive relapse. *Archives of General Psychiatry, 63*(7), 749–755.

Segal, Z. V., Williams, J. M. G., & Teasdale, J. D. (2002). *Mindfulness-based cognitive therapy for depression: A new approach to relapse prevention*. New York: Guilford.

Solis, E., Antypa, N., Conijn, J. M., Kelderman, H., & Van der Does, W. (2016). Psychometric properties of the Leiden Index of Depression Sensitivity (LEIDS). *Psychological Assessment* (Advance online publication). doi:10.1037/pas0000326.

Stanley, B., & Brown, G. K. (2008). *The safety plan treatment manual to reduce suicide risk: Veteran version.* Washington, DC: United States Department of Veterans Affairs. Retrieved from http://www.mentalhealth.va.gov/docs/va_safety_planning_manual.pdf.

Stanley, B., Brown, G., Brent, D. A., Wells, K., Poling, K., Curry, J. … Goldstein, T.(2009). Cognitive-behavioural therapy for suicide prevention (CBT-SP): Treatment model, feasibility, and acceptability. *Journal of the American Academy of Child & Adolescent Psychiatry*, *48*(10), 1005–1013.

Teasdale, J. D. (1988). Cognitive vulnerability to persistent depression. *Cognition and Emotion, 2* (3), 247–274.

Van der Does, W. (2002). Cognitive reactivity to sad mood: Structure and validity of a new measure. *Behaviour Research and Therapy, 40*(1), 105–119.

Van der Does, A. J. W., & Williams, J. M. G. (2003). Leiden index of depression sensitivity-revised (LEIDS-R). *Leiden University*. Retrieved from http://www.dousa.nl/publications_depression.htm#LEIDS.

Västfjäll, D. (2002). Emotion induction through music: A review of the musical mood induction procedure. *Musicae Scientiae, 5*(1), 173–211.

Weir, P. (1989). *Dead poets society* [DVD]. Burbank, CA: Touchstone Pictures.

Wenzel, A., & Beck, A. T. (2008). A cognitive model of suicidal behaviour: Theory and treatment. *Applied and Preventative Psychology, 12*(4), 189–201.

Wenzel, A., Brown, G. K., & Beck, A. T. (2009). *Cognitive therapy for suicidal patients: Scientific and clinical applications*. Washington, DC: American Psychological Association.

Westermann, R., Spies, K., Stahl, G., & Hesse, F. (1996). Relative effectiveness and validity of mood induction procedures: Analysis. *European Journal of Social Psychology, 26*(4), 557–580.

Williams, J. M. G., Barnhofer, T., Crane, C., & Beck, A. T. (2005). Problem solving deteriorates following mood challenge in formerly depressed patients with a history of suicidal ideation. *Journal of Abnormal Psychology, 114*(3), 421–431.

Williams, J. M. G., Duggan, D. S., Crane, C., & Fennell, M. J. (2006). Mindfulness-based cognitive therapy for prevention of recurrence of suicidal behaviour. *Journal of Clinical Psychology, 62*(2), 201–210.

Williams, J. M. G., Fennell, M., Barnhofer, T., Silverton, S., & Crane, R. (2015). *Mindfulness and the transformation of despair: Working with people at risk of suicide*. New York: Guilford Publications.

Williams, J. M. G., Van der Does, A. J. W., Barnhofer, T., Crane, C., & Segal, Z. S. (2008). Cognitive reactivity, suicidal ideation and future fluency: Preliminary investigation of a differential activation theory of hopelessness/suicidality. *Cognitive Therapy and Research, 32*(1), 83–104.

Chapter 11
Lethal Means Restriction: Historical, International, and Professional Considerations

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Suicide takes over 800,000 lives globally each year, causing more annual deaths than homicide, war, and civil conflict (WHO, 2009). A study by the United States Department of Health and Human Services (2014) found that in the USA alone, over 1.3 million people in 2010 reported attempting suicide, and over 9.3 million people reported having serious thoughts about it (US Department of Health and Human Services, 2014). It is evident that suicide is a serious concern plaguing our society across different cultures and countries. One of the most promising techniques used to combat suicide rates found thus far is the utilization of lethal means restriction.

Lethal Means Restriction Explained

Means restriction is a technique of attempting to prevent suicide by denying access to lethal means (Yip et al., 2012). The National Action Alliance for Suicide Prevention (NASP) discusses how the restriction of lethal means can be done in one

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of three ways: (1) physically preventing access to the means, (2) reducing the lethality or toxicity of certain means, or (3) reducing cognitive access to the lethal means (NASP, 2014).[1] Research has shown that completed suicides depend heavily on the lethal means used and that preferences for lethal means vary worldwide (Spicer & Miller, 2000). Denying access to commonly used means through these methods can impede thoughts and actions of persons with suicidal ideations. While some researchers have argued that restriction of one type of lethal mean will only cause suicidal persons to turn to other methods, data collected on suicide rates after restrictions on popular and highly fatal lethal means had been implemented reflect otherwise (Daigle, 2005).[2]

The Importance of Means Restriction

Fatalities resulting from suicide attempts depend greatly on the lethal nature of the means being used. The lethality of a particular method can be influenced by multiple factors, including its inherent deadliness, ease of use, accessibility, ability to be interrupted or aborted halfway through an attempt, or acceptableness to an attempter (Barber & Miller, 2014). Certain objects and methods will be more lethal depending on the context as well as the perpetrator. However, restriction of the most lethal of means will not combat high suicide rates alone. A decline in rates after utilization of restriction techniques still depends on the popularity of the means being used in the population being restricted, and on the rank of lethality (Ajdacic-Gross et al., 2008). Results suggest lower rates of suicide when restrictions are placed on means found to be more lethal and popular in certain cultures.

Means restrictions prove to be effective because of characteristic traits that are common in people contemplating suicide. Suicidal persons often show preference towards one method of suicide over another. A questionnaire distributed by Lester (1988) to people whom had previously contemplated suicide showed that individuals often had a particular preference for a certain method of suicide, and that they were not likely to change the selected means. The preference towards one method over another is often found to be culturally specific, with many people showing preference towards certain lethal means that are commonly used in that particular culture (Lin & Lu, 2011). This popularity of methods across cultures might be due to a contagion effect, or possibly due to the distribution of certain personal and cultural factors among a specific subculture being restricted (Daigle, 2005).

[1]Using firearms as an example demonstrating the differences among these three methods of means restriction, physically preventing access would involve removing a firearm from an individual's possession; reducing lethality of certain means could include installing a gunlock or not having access to ammunition; reducing cognitive access would involve providing mental health treatment and means restriction counseling preventing planning harm by using the firearm.

[2]See discussion regarding the Method Substitution Hypothesis.

Thoughts and plans of suicide can be fleeting and short-lived. When preferences for suicide are restricted and not readily available, many people will either attempt with a less lethal method or not attempt at all. Of those who contemplate suicide, approximately 30% only seriously consider following through with an attempt for less than one hour (Drum, Brownson, Denmark & Smith, 2009). When preferences for means are restricted, this may combat the impulsive nature of many people contemplating suicide. For those who bypass the impulsive nature of suicide and switch to an alternative method, if the subsequent means is less lethal than the original preference, the prognosis can be better. The lethality of a certain method varies drastically across certain means and therefore plays a pivotal role in whether a suicide attempt is completed or not (Barber & Miller, 2014). For those who attempt and do not succeed due to the low lethality of the means used, 90% will not die from suicide later on (Owens, Horrocks, & House, 2002). Conversely, individuals using firearms as the method of suicide do not typically have a longstanding history of suicidal behaviour and more often than not, successful attempts using firearms tend to be the first and only suicide attempt for these individuals (Anestis, 2016).

Restrictions imposed on commonly used lethal means have shown to reduce suicide rates by up to 30–50% (Barber & Miller, 2014). Restriction techniques are effective by combating preferences of lethal means and exploiting the impulsive nature behind many suicidal thoughts. The idea behind these successful declines stems from the belief that people who cannot obtain a highly effective lethal means of suicide will turn to using a less effective method, if at all. Lethal means restrictions should be premised on characteristics of the lethality of means, and on the culture influenced by the restrictions. Imposing restrictions on one culture may cause dramatic decreases in suicide rates, whereas in another culture it may show no effect if the restriction is not found to be restrictive of the particular preferences of the cultures' suicidal inhabitants. Implementation of restrictions on lethal means can pose difficulties at the individual and societal levels, but evidence suggests that means restrictions are effective and should be a vital component of suicide-prevention strategies.

International Means Restriction

This section will examine the international impact of lethal means and discuss legislative measures that various countries have implemented to reduce their citizens' access to lethal means. A report by World Health Organization (WHO, 2009) determined that the most common lethal means of violence used worldwide include; firearms, sharp objects, and pesticides. Themes in the literature demonstrate that the introduction of bans, licensing schemes, storage requirements, background checks, and minimum age for buying firearms, at both the national or at least the local level, has had a dramatic impact on gun violence worldwide (WHO, 2009; United Nations Office of Drugs and Crime, 2013). Research regarding knives

and sharp objects are not as robust as that of gun control. Despite this, it is clear that legislative reforms have been occurring in various countries regarding knives and sharp item laws. Initial findings regarding such legislative reforms will be explored here, though the long-term impacts of these laws are expected to proliferate in the upcoming years. Pesticides have also become a worldwide public health concern, having been found to account for over 30% of all suicides internationally (Gunnell, Eddleston, Phillips & Konradsen, 2007).

International Gun Control Trends

There are over 875 million firearms in the world, only 10% of which are legally registered (WHO, 2009). A study by the United Nations Office of Drugs and Crime (UNODC, 2013) has determined that firearms are used in over 40% all homicides each year and are the most widely used weapon. This report determined that the rates of homicides in which firearms were used were 28% in Africa, 66% in the Americas, 28% in Asian, and 13%, in Europe. Additionally, firearms are a popular method of choice for suicidal behaviour. Over 800,000 people worldwide die due to suicide each year, with firearms being one of the most common lethal means (WHO, 2014). It is clear that firearm violence poses a serious risk of lethal outcomes, and as such, countries have begun to tighten their laws regarding civilian access to firearms.

Research has demonstrated that countries with strict firearms restrictions have lower levels of firearm violence (Ajdacic-Gross et al. 2008). These results have lead to the goals of strengthening international firearm legislation (WHO, 2009). Specifically, various countries have begun to examine and implement stricter laws regarding the sale, purchase, use, and storage of guns. Other ways that specific countries have strengthened their firearm laws has been by placing a minimum age for the purchase of firearms, requiring background checks for purchasers, limiting the quantity of firearms being purchased, and placing controls on the carrying of firearms.

The World Health Organization (2009) examined the various impacts that national firearm legislation changes have had among the countries that implement them and found many promising results. Australia, Austria, Brazil, and New Zealand had encouraging results due to their country's reformed firearm legislation. Australia prohibited semi-automatic and pump-action shot guns and rifles after a mass shooting resulting in significant public outcry. The government also implemented national licensing laws that included passing a written test. Additionally, they financially compensated individuals who surrendered their weapons. The Austrian government also created an age restriction regarding the purchasing of firearms. Apart from the age restriction, the law requires that a person wait a period of three days between receiving the licence and purchasing the firearm(s). The law also requires that individuals who intend to purchase firearms forgo background checks and psychological testing. Since the implementation of these new laws, both

suicide and homicide rates have begun to decrease. In 2003, Brazil changed their laws regarding firearms. Like Australia and Austria, Brazil created an age restriction and implemented background checks for those interested to purchase firearms. They also made it illegal to have unregistered firearms and to carry firearms outside from the individual's home or work place. Additionally, they created voluntary disarmament, which led to the collection of 450,000 firearms. In only 2 years, Brazil had a significant reduction in homicides, suicides, and accidental firearms deaths. New Zealand also found significant reductions in firearm-related suicides as a result of the licensing system that they implemented after a mass shooting in 1990. The law now requires that individuals be photographed and assessed by police, pass a gun law test, and have safe storage of both firearms and ammunition (in separate storage areas), prior to receiving a licence. The impact of strengthening the firearm laws in these countries have shown promising results thus far.

International Knife and Sharp Object Trends

There is less published information regarding knives and sharp object initiatives when compared to firearm legislation. This indicates a need for increased attention on this major public health issue. Lethal violence using knives and sharp objects is another international issue. The use of knives and sharp objects causes a significant amount of harm against others and the self each year. The UNODC revealed that sharp objects account for nearly 25% of homicides globally (UNODC, 2013). Additionally, "cutting" via sharp objects, is the most common form of self-harming behaviours in men and women, in many countries (Madge et al., 2008). Because of these staggering statistics, there have been many legislative initiatives created to limit the access of knives and sharp objects.

Over the past decade, the UK has created new legislative measures to limit the access to knives and sharp objects in order to address the significant rates of violence and homicide. The legislation was established through the Violent Crime Reduction Act of 2006 (Violent Crime Reduction Act, 2006). Within this act, the law determined that it is a criminal offense to carry sharp objects in public. The law also banned the possession of specific knives. Additionally, the age restriction for purchasing knives and the maximum prison sentence for possession were both increased. To enforce this new legislation, a "stop and search" tactic was also created that granting police permission to search anyone who is suspected to be carrying knives (Knives Act, 1997).

Other countries have implemented other laws to address violence related to knives and sharp objects. In Scotland, a licensing system was created for businesses that sold knives (Custodial Sentences and Weapons Act, 2007). Additionally, amnesties of knives have been implemented in England, Wales, London, and Scotland, though there has been little long-term efficacy thus far.

The World Health Organization (2009) also examined other ways that countries have targeted sharp object violence. One method has been to examine laws

regarding glass and reduce the presence of glass in public areas. The report revealed the unique considerations that both the UK and New Zealand made in order to decrease sharp object violence. In the UK, many local authorities have required the use of non-glass cups in areas that alcoholic beverages are consumed. Additionally, the UK and New Zealand have created bans on the consumption of alcohol in public places to decrease the propensity for and presence of broken glass in public places. Research has not examined the efficacy of such laws as of yet.

International Pesticide Trends

Pesticide ingestion, while rare in North America, is a serious health concern that accounts for more than one-third of all suicides worldwide (WHO, 2006, 2009). It has been estimated that between 60 and 90% of suicides in China, Malaysia, Sri Lanka, and Trinidad are a result to pesticide ingestion (WHO, 2006). The majority of individuals who ingest pesticides are from agricultural communities who live in low and middle-income countries (Gunnell et al. 2007). Results from research pertaining to means restriction and the method substitution hypothesis, to be discussed later in this chapter, have suggested that banning the use of highly toxic pesticides (Class 1) has dramatically reduced suicide rates in various countries, including Jordan and Sri Lanka (Gunnell et al. 2007).

The World Health Organization (2009) suggests that measures can be taken to reduce suicide rates involving pesticides. Themes in the literature reveal that individuals often impulsively commit suicide using pesticides. The WHO proposes that by having safer storage policies, access to pesticides will be reduced, in turn decreasing suicide rates. Ways to reduce access to pesticides can include having locked storage of pesticides, having centralized communal storage, and providing communities with information regarding safe storage practices.

Means Restriction in the USA

There are various national legislative measures in place to prevent access and use of lethal means among US citizens. There is an overwhelming amount of research done on access to firearms and gun control. Therefore, the majority of this section will explore national and state legislations regarding access and restrictions of firearms. Apart from outlining the US firearm legislation, this section will also briefly explore national and state initiatives regarding knives and sharp objects.

USA's Gun Control Trends

The WHO (2009) identified that of the world's civilians that own firearms, one-third of these civilians are in USA. Due in part to the Second Amendment of the United States Constitution, America has developed a strong relationship with firearms, often stemming from tradition and autonomy. However, firearms are used in 70% of homicides and 60% of suicides in the USA (Renzetti & Edleson, 2008). Given these frequencies and recent tragedies committed using firearms, gun control has become a major national concern in the USA. The USA has instituted various national and state-wide barriers with regards to firearms, including: bans on certain firearms, one gun a month laws, laws to prevent children for accessing firearms, gun show regulations, and limiting who can have legal rights to guns. However, given the state autonomy in the area of firearm legislation, these laws are ever evolving and inconsistent across states when federal law does not apply. This makes firearms law at the state level a difficult terrain to navigate. As such, the following section discusses federal restrictions on the public's access to firearms.[3]

The Federal Gun Control Act of 1968 (GCA) was created to regulate firearms. It is federal legislature that outlines various laws related to firearms. The GCA prohibits the sale of firearms for someone under the age of 18. Additionally, it prohibits the sale of firearms to someone who has been convicted a crime that is punishable by imprisonment for more than 1 year, to someone who is a fugitive, or to someone who is an unlawful user of or addicted to a controlled substance. The law also prohibits the sale of firearms to someone who had been deeming "mentally defective". This constitutes anyone who has been deemed a danger to themselves or others, had been deemed insane in court, has been found incompetent to stand trial, has been found guilty due to lack of mental responsibility, or has been involuntarily committed to a mental institution. Under the GCA, the sale of firearms is prohibited to someone who is dishonourably discharged from the military, has been convicted of a misdemeanour offense of domestic violence, or has received an intimate partner restraining order after a hearing that determined that the individual attempted or threatened physical violence against a partner or child. It is clear that the development of the GCA set extensive and firm restrictions on those individuals whom are not suited to have access to firearms, and therefore, they are prohibited to purchase them regardless of which state the individual resides.

The Federal Gun Control Act also prohibits anyone from selling firearms without a federal licence. In 1993, The Brady Handgun Violence Prevention Act created the requirement for federally licenced firearms dealers to perform background checks on individuals desiring to purchase firearms. These background checks ensure that firearm transfers will not violate federal, state, or local laws.

[3]Many states have strengthened the federal regulations. The federal laws pertaining to firearm ownership provides the bare minimum for state regulation. Unless developing legislation or intervention at a federal level, always investigate state-specific regulations before engaging in means restriction.

Additionally, this act prevents firearm dealers from selling a handgun to a resident of another state, from selling a shotgun or rifle to someone that is under the age of 18, or from selling a handgun to someone under the age of 21. The Brady Handgun Violence Prevention Act implemented various restrictions regarding the sale of firearms.

Congress passed the Protection of Lawful Commerce in Arms Act 2005, which made it unlawful for any importer, manufacturer, or dealer to sell or transfer handguns unless the purchaser is provided with a secured gun storage or safety device. Secure gun storage was defined as being a safe, a gun safe, a lock box, or another storage container that has a lock on it. A safety device is either installed or incorporated into the design of the firearm, and prevents a firearm from being operated without first deactivating it is installed. Since the act was established, a study by Grossman et al. (2005) found that four practices of keeping a gun locked, unloaded, storing ammunition locked and in a separate location are each associated with a protective effect for reducing self-inflicted firearm injuries.

State-Specific Firearm Trends

Many states have implemented more stringent firearm laws than those initially set forth by the federal government. These policies include stricter rules surrounding background checks, increased restriction regarding firearm access, restrictions based on mental illnesses or suspected dangerousness, as well as stricter firearm storage laws.

According to the Law Center to Prevent Gun Violence (2012), many states have implemented new laws requiring background checks at the point of transferring a firearm, even between private parties. States that require such background checks include: California, Colorado, Connecticut, Delaware, District of Columbia, New York, and Rhode Island. Additionally, in Maryland and Pennsylvania background checks are required only for the purchase of handguns (Law Center to Prevent Gun Violence, 2012). Other state-specific laws have been implemented to restrict access to firearms. With the exception of Vermont, all states restrict access to firearms by felons, or individuals who convicted a crime punishable by imprisonment for more than 1 year. Additionally, access is restricted for individuals who have convicted a violent firearm-related crime.

Most states (thirty-three) including the District of Columbia also have specific laws that restrict access of firearms for individuals with mental illness to handguns (Law Center to Prevent Gun Violence, 2012). In Connecticut, Illinois, Maryland, and the District of Columbia, individuals are prohibited from purchasing firearms within a specific time period of being voluntarily committed to a mental hospital. Several states further restrict the federal law that disqualifies individuals to possess

firearms due to mental illness. For example, in the state of California, individuals with mental illness who have communicated a serious threat of violence against an identifiable individual or have been placed on a 72-h hospital hold anytime in the past 5 years are disqualified from owning or purchasing firearms.

Laws regarding storage of firearms and requirement of safety features have also been strengthened in various states. A large nationwide survey study determined that 34% of children in the USA live in a home with firearms present (Schuster, Franke, Bastian, Sor, & Halfon, 2000). Of households with a presence of both children and firearms, 55% stored at least one firearm in an unlocked location. The Child-Access Prevention legislation (CAP, 2013) was created to limit a child's access to firearms. Various states have also created additional legislation to place criminal liability on adults who have engaged in negligent storage of firearms, leading to a child gaining access to a firearm (Law Center to Prevent Gun Violence, 2012). In addition to improving the inaccessibility of firearms to children, some states such as New York, California, and Connecticut have made laws requiring that individuals keep the firearm in a locked place if they live with someone who is prohibited to possess a firearm (Law Center to Prevent Gun Violence, 2012). The state of Massachusetts is the only state that requires all firearms to be stored in a locked place.

The Law Center to Prevent Gun Violence (2012) identifies various other state level legislations that have been implemented regarding gun control. Twenty-seven states and the District of Columbia prohibit people who are drug or alcohol abusers, people who have been convicted of drug or alcohol related misdemeanours, or people who are under the influence of controlled substances, from purchasing or possessing some or all firearms. Twenty-six states prohibit individuals with certain juvenile convictions from purchasing or possessing firearms, with some prohibitions ending after the person reaches a particular age, or after a certain time period has passed. In California, Connecticut, Indiana, and Texas, law enforcement may seize firearms from an individual that they believe to be dangerous, while Illinois and New York have specific procedures for removing firearms from individuals who have been identified as dangerous by mental health professionals. Additionally, in the state of Maryland placed a ban on small low-quality handguns. Though there was an initial spike of gun purchases and homicides in Maryland after this ban, ultimately homicides decreased as a result of the ban. In Virginia, a law was placed that limited an individual to only be allowed to purchase one gun per month. In the state of California, gun shows have become regulated, promoters must be licenced, and firearm sales have restrictions. As has been highlighted throughout this section, federal legislation set minimum standards with regard to particular law; however, the states reserved the right to place additional laws, if they deem it necessary to do so.

USA's Knife and Sharp Object Trends

In 1958, the Switchblade Knife Act was created, in which switchblades and ballistic knives were banned. A switchblade was defined as any knife that has a blade that opens automatically, either by pressing a button on the handle, or by operation of inertia, gravity, or both. The Switchblade Knife Act prohibits introducing, manufacturing, transporting, or distributing switchblades if doing so is part of a business transaction and if that transaction crosses over state or territory lines, or if the knives are coming from a foreign country. Much like the laws set fourth regarding gun control, individual states have differing laws regarding knife policies, and several states have enacted knife pre-emption laws, which allow the state to be the sole authority for knife laws. States that have knife pre-emption include: Alaska, Arizona, Georgia, Kansas, New Hampshire, Tennessee, Utah, Colorado, New Mexico, South Dakota, and Wyoming (American Knife and Tool Institute, n.d.). It is outside the scope of this chapter to examine each state law pertaining knifes and sharp object; however, it is noteworthy to address the importance of understanding that legislative differences exist.

Method Substitution Hypothesis

It has been hypothesized that restricting access to a cultures preferred methods of lethal means across a society might help to reduce suicide rates (Yip et al., 2012). The literature indicates that restricting popular methods of means will delay or eliminate the plan of impulsive pursuers, possibly due to their lack of desire to postpone plans or to turn to alternative methods of lethal means coupled with the fleeting nature of acute suicidality (Daigle, 2005). This section will outline restrictive legislation against popular means of lethality in certain countries, including asphyxiation in the UK, pesticides in Taiwan and Sri Lanka, train platforms in Japan, and bridge barriers in Australia and the USA, as well as discuss the outcomes of these restrictive measures.

Asphyxiation in the UK

In 1958, 49.8% of suicides in the UK were completed by means of asphyxiation (Daigle, 2005). Until this point, up to 20% of domestic gas in the UK contained carbon monoxide, and asphyxiation by poisonous gas inhalation was the leading cause of suicide in the UK from World War II through 1958 (Harvard T.H. Chan School of Public Health, 2016). When natural gas was introduced into the UK in 1958, it offered the country a virtually toxin-free gas alternative. Krietman (1976) observed that with the alternative means of natural gas eliminating the availability

of the previously used toxic gas, rates of suicide across the country decreased dramatically. The overall decrease in suicides by all lethal means was ultimately attributed to the unintentional physical restriction imposed on poisonous gas in the UK (Krietman, 1976).

Although suicides completed by asphyxiation reduced substantially, suicides by other means increased as a whole (Clarke, 1989). This increase in other suicidal means could be attributed to decreased access to lethal gases in the UK, and to people turning to new lethal means to commit suicide after already realizing asphyxiation is not an option. Although rates of suicide in other means increased, the total number of suicides committed after the naturalization of gases in the UK still dropped by over 30% (Gunnel, Middleton & Frankel, 2000). The cleaning of gases in the UK saved over six thousand lives in the 10 years following the act (Hawton, 2002). Krietman (1976) was puzzled that the effects a single change in gases could have on suicidality, but he did not consider the applied benefits lethal means restrictions could have on suicidal persons and on a population with a preference towards highly lethal suicidal behaviour.

Pesticides in Sri Lanka and Taiwan

The ingestion of pesticides is common among many countries and cultures as a means of self-harm and suicide. In industrialized countries, pesticides are relatively non-toxic and fatalities from their ingestion is extremely low (Gunnell & Eddleston, 2003). However, in developing countries, it is more common to consume agricultural pesticides, which can be fatal due to the more harmful toxins that are present in the formula (Gunnell & Eddleston, 2003). Fatalities from this particular method in developing countries increases to 10–20% on average compared to more developed nations (Eddleston, 2000). Some countries and cultures experience higher rates of pesticide ingestion suicides: in Sri Lanka, this method of poisoning accounted for 71% of all completed suicides, while in rural Taiwan, it accounted for 47% of all pesticide suicides in Taiwan, even though only 13% of Taiwan's population resided there (Lin & Lu, 2011; Chang et al., 2012).

In the 1990s, Sri Lanka's government placed a ban on the import and sales of toxic pesticides. In the 10 years following this restriction, almost 20,000 fewer suicides were completed compared to the 10 years prior to the ban (Barber & Miller, 2014). Although suicide rates declined substantially, attempted suicides and completed suicides by non-toxic pesticides did not decrease (Barber & Miller, 2014). The data gathered in Sri Lanka indicates that the act of choosing to commit suicide does not always decrease due to a restriction in place, but that a ban on a preferred lethal mean may result in less fatality.

The Taiwanese government imposed multiple bans throughout the 1980s to decrease access to harmful pesticides. These bans, coupled with an overall decrease in agricultural populations during this time, resulted in a major decrease in suicide rates in the 10-year period following the initial bans (Lin & Lu, 2011). Researchers

who observed these declines in suicide then explored whether suicidal persons instead used different methods of substitution. The literature described that no such substitutions were made and that rates of suicide across all other means decreased or did not change (Lin & Lu, 2011). It has been hypothesized that Taiwan's lack of means substitution may have differed from the UK's suicide rates after the ban on hazardous gases because of Taiwan's lack of popularity surrounding alternative lethal means. Before the government restrictions took place, 90% of suicides in Taiwan were completed by pesticide ingestion or hanging; the lack of popularity surrounding alternative ingestible lethal means could be a factor into the lack of method substitution used by persons contemplating suicide during this time (Lin & Lu 2011).

Train Platforms in Japan

Suicides committed by jumping in front of moving trains in Japan have been steadily increasing (Mishara, 2007). As a result, Japan incurred ghastly costs and sought to reduce these types of fatalities. Previous studies indicated that railroad doors were effective at reducing the number of people jumping in front of trains, but the costs of implementing them were extreme (Mishara, 2007). Certain Japanese railways instead installed blue LED lights on train platforms and at railway crossings to help deter people from committing suicide due to the calming effect such lights have been found to have on agitated people; the simple installation of blue lights at railways correlated with an 84% decrease in suicide rates with the means of jumping in front of oncoming trains (Matsubayashi, Sawada, & Ueda, 2013). Data from Japan demonstrates the possibilities for simplicity in the implementation of mean restrictions, as long as the restriction combats popular, highly lethal means of suicidality in a particular culture.

Bridge Barriers in Australia and the USA

Multiple studies have observed the impact that restrictions on bridges in Australia and the USA have had on the impact of suicide rates. In both countries, restrictive measures have been implemented on certain bridges, including suicide barriers or nets (Barber & Miller, 2014). Suicide rates decreased overall at most of the sites where the restrictive measures were implemented (Barber & Miller, 2014). However, it is surprising that suicides at nearby bridges did not increase (Daigle, 2005). Placing restrictions on bridges caused deterrence from suicides at those places, but did not cause an increased desire in method substitution to nearby fatal means of suicidality (Daigle, 2005). When restrictive measures were removed from popular bridges, however, suicides once again rose substantially at that particular spot (Beautrais, 2008). Suicides at bridges with restrictive measures in place can

reduce suicide rates by up to 90%, while causing other nonrestrictive means of suicide to remain stable (Pirkis et al., 2015).

Professional Considerations

Empirically supported methods to promote lethal means restriction in the field continue to develop. Means restriction is a complicated topic involving multiple fields, including psychology, law and politics. Often these fields clash and work at different paces, halting progress in developing an effective overall practice and appropriate standard of care. Individually, these fields have developed their own strategies to promote means restriction.

Psychological Resources

Suicide-prevention efforts and lethal means restriction strategies continue to be developed and implemented among mental health providers. Despite arguments against means restriction via the method substitution hypothesis or questions about a patient's motivation for follow-through, it is generally accepted that means restriction is a successful strategy to promote safety. However, the majority of means restriction research stops at its importance and fails to provide guidance as to how to appropriately and effectively engage in the process.

Mental health professionals rarely engage in the actual process of means restriction, but can be involved in preventing future harm by providing means restriction counselling to patients and their families. Means restriction counselling is an intervention that, through the use of psychoeducation and family collaboration, advocates for restricting an individual's access to lethal means (Bryan, Stone, & Rudd, 2011). This intervention is considered an evidence-based practice that can be used by emergency departments with proper training (Barber & Miller, 2014; Betz et al., 2013).

To address the need of training providers in means restriction counselling, programs such as CALM (Counseling on Access to Lethal Means) at Children's Hospital at Dartmouth and Means Matter at Harvard School of Public Health have been founded. The goal of these programs is to train providers in a structured procedure guiding professionals through the means restriction process beyond simply reiterating its importance (Bryan et al., 2011; Johnson, Frank, Ciocca, & Barber, 2011). By simply providing these trainings, research indicates an increase in usage of means restriction counselling in the field. Six weeks after receiving CALM's 2-h training program, 65% of providers that attended reported engaging in means restriction counselling with a patient at least once (Johnson et al., 2011).

Though initial data appears strong, given the developing nature of means restriction counselling, more research on efficacy, implementation, and patient follow-through is needed (Barber & Miller, 2014).

Legal Resources

Any legal barriers to access to means must work in conjunction with already existent legal guidelines. For example, lethal means restriction with regards to firearms in the USA must not violate the Second Amendment right to bear arms, while still promoting the well-being of parties involved. An individual who is a risk to themselves or others can be involuntarily hospitalized in the interest of public or personal safety (Giacco & Priebe, 2016). For obvious reasons, when an individual is hospitalized, he or she is in a controlled environment where access to lethal means is restricted. Psychiatric hospitalization can be an effective treatment strategy, resulting in decreased rates of suicidality and hostility at a 3-month follow-up (Giacco & Priebe, 2016). However, given the controlled nature of inpatient treatment, it is important that treatment continues after discharge and modifications are made to social as well as individual variables.

Gun violence restraining orders (GVROs) are an American legal intervention that at the time of this writing have only been enacted in California. A GVRO temporarily restricts an individual's access to firearms if there is reasonable cause to do so (Horwitz, Grilley, & Ward, 2016). Doing so promotes accessible reporting procedures, expands on adjudication standards for involuntary hospitalization, and promotes family collaboration (Frattaroli, McGinty, Bamhorst, & Greenberg, 2015). Similar laws exist in Connecticut and Indiana, but the GVRO in California includes concerned family members rather than solely law enforcement officers as available reporting parties (Horwitz et al., 2016). GVROs can be used when an individual's distress falls below the standard required for hospitalization, but family members and significant others remain concerned about an individual's mental health and propensity for future harm. The California GVRO went into action on 1 January 2016 and at the time of this writing, there are no studies evaluating the short- or long-term impact of the intervention.

Conclusion

It is important to consider the use of lethal means restrictions when attempting to combat the alarmingly high suicide rates around the world. The idea that restrictions on certain lethal means will only lead to acutely suicidal individuals switching to alternative methods has been shown to be inaccurate in the literature. Restricting highly lethal means of suicide can lead to deterrence from suicide or to using alternative and less lethal means to commit the act. It is important to find a balance

between restrictions on low lethal means of suicide because of the possibility of substitution being used in favour of more lethal means (Harvard T. H. Chan School of Public Health, 2016). Although posing some risks, means restriction strategies suggest promising effects in the fight against globally rising suicide rates.

References

Ajdacic-Gross, V., Weiss, M. G., Ring, M., Hepp, U., Bopp, M., Gutzwiller, F., & Rossler, W. (2008). Methods of suicide: International suicide patterns derived from the WHO mortality database. *Bulletin of the World Health Organization, 86*(9), 726–732.

American Knife & Tool Institute. (n.d.). *The American Knife & Tool Institute Supports Knife Preemption Laws to Protect Law-Abiding Citizens.* Retrieved from http://www.akti.org/legislation/about-knife-preemption/.

Anestis, M. D. (2016). Prior suicide attempts are less common in suicide decedents who died by firearms relative to those who died by other means. *Journal of Affective Disorders, 189,* 106–109.

Barber, C. W., & Miller, M. J. (2014). Reducing a suicidal person's access to lethal means of suicide. *American Journal of Preventative Medicine, 47*(3), 264–272.

Beautrais, A. L. (2008). Effectiveness of barriers at suicide jumping sites: A case study. *Australian and New Zealand Journal of Psychiatry, 35*(5), 557–562.

Betz, M. E., Miller, M., Barber, C., Miller, I., Sullivan, A. F., Camargo, C. A., & Boudreaux, E. D. (2013). Lethal means restriction for suicide prevention: Beliefs and behaviours of emergency department providers. *Depression and Anxiety, 30*(10), 1013–1020.

Brady Handgun Violence Prevention Act. (1993). Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-103hr1025enr/pdf/BILLS-103hr1025enr.pdf.

Bryan, C. J., Stone, S. L., & Rudd, D. M. (2011). A practical, evidence-based approach for means-restriction counseling with suicidal patients. *Professional Psychology: Research and Practice, 42*(5), 339–346.

Chang, S. S., Lu, T. H., Sterne, J. A. C., Eddleston, M., Lin, J. J., & Gunnell, D. (2012). The impact of pesticide suicide on the geographic distribution of suicide in Taiwan: A spatial analysis. *BMC Public Health, 12,* 260–270.

Child-Access Prevention. (2013). Retrieved from https://www.congress.gov/bill/113th-congress/house-bill/65.

Clarke, R. V. (1989). Crime as opportunity: A note on domestic gas suicide in Britain and The Netherlands. *British Journal of Criminology, Delinquency and Deviant Social Behaviour, 29* (1), 35–46.

Custodial Sentences and Weapons Act. (2007). Retrieved from http://www.legislation.gov.uk/asp/2007/17/contents.

Daigle, M. S. (2005). Suicide prevention through means restriction: Assessing the risk of substitution: A critical review and synthesis. *Accident Analysis and Prevention, 37*(4), 625–632.

Drum, D. J., Brownson, C., Denmark, A. B., & Smith, S. E. (2009). New data on the nature of suicidal crises in college students: Shifting the paradigm. *Professional Psychology: Research and Practice, 40*(3), 213–222.

Eddleston, M. (2000). Patterns and problems of deliberate self-poisoning in the developing world. *Quarterly Journal of Medicine, 93*(11), 715–731.

Federal Gun Control Act of 1968. (1968). Public Law 90–618. Retrieved from http://www.gpo.gov/fdsys/pkg/STATUTE-82/pdf/STATUTE-82-Pg1213-2.pdf.

Frattaroli, S., McGinty, E. E., Barnhorst, A., & Greenberg, S. (2015). Gun violence restraining orders: Alternative or adjunct to mental health-based restrictions on firearms? *Behavioural Sciences & the Law, 33*(2–3), 290–307.

Giacco, D., & Prieve, S. (2016). Suicidality and hostility following involuntary hospital treatment. *PLoS ONE, 11*(5), 1–13.

Grossman, D. C., Mueller, B. A., Riedy, C., Dowd, M. D. Villaveces, A., Prodzinski, J., … Haruff, R. (2005). Gun storage practices and risk of youth suicide and unintentional firearm injuries. *The Journal of the American Medical Association (JAMA)*, 293(6) 707–714.

Gunnel, D., & Eddleston, M. (2003). Suicide by intentional ingestion of pesticides: A continuing tragedy in developing countries. *International Journal of Epidemiology, 32*(6), 902–909.

Gunnell, D., Eddleston, M., Phillips, M. R., & Konradsen, F. (2007). The global distribution of fatal pesticide self-poisoning: Systematic review. *BMC Public Health, 7*(1), 357.

Gunnel, D., Middleton, N., & Frankel, S. (2000). Method availability and the prevention of suicide—A re-analysis of secular trends in England and Wales 1950–1975. *Social Psychiatry and Psychiatric Epidemiology, 35*(10), 437–443.

Harvard T. H. Chan School of Public Health. (2016). *Means reduction saves lives*. Retrieved from http://www.hsph.harvard.edu/means-matter/means-matter/saves-lives/.

Hawton, K. (2002). United Kingdom legislation on pack sizes of analgesics: Background, rationale, and effects on suicide and deliberate self-harm. *Suicide and Life-Threatening Behaviour, 32*(3), 223–229.

Horwitz, J., Grilley, A., & Ward, K. (2016). Preventing gun violence. In L. H. Gold & R. I. Simon (Eds.), *Gun violence and mental illness* (pp. 317–338). Arlington, VA: American Psychiatric Association.

Johnson, R. M., Frank, E. M., Ciocca, M., & Barber, C. W. (2011). Training mental healthcare providers to reduce at-risk patients' access to lethal means of suicide: Evaluation of the CALM Project. *Archives of Suicide Research, 15*(3), 259–264.

Knives Act. (1997). Retrieved from http://www.legislation.gov.uk/ukpga/1997/21/crossheading/stopping-and-searching.

Krietman, N. (1976). The coal gas story: United Kingdom suicide rates, 1960–1971. *British Journal of Preventive & Social Medicine, 30*(2), 86–93.

Law Center to Prevent Gun Violence. (2012). Universal Background Checks & the Private Sale Loophole Policy Summary. Retrieved from http://smartgunlaws.org/universal-gun-background-checks-policy-summary/#footnote_33_5949.

Lester, D. (1988). Why do people choose particular methods for suicide? *Activitas Nervosa Superior, 30*(4), 312–314.

Lin, J. J., & Lu, T. H. (2011). Trends in solids/liquids poisoning suicide rates in Taiwan: A test of the substitution hypothesis. *BMC Public Health, 11,* 712–719.

Madge, N., Hewitt, A., De Wilde, E. J., Corcoran, P., Fekete, S., Van Heeringen, K., … Ystgaard, M. (2008). Deliberate self-harm within an international community sample of young people: Comparative findings from the Child & Adolescent Self-harm in Europe (CASE) study. *Journal of Child Psychology and Psychiatry, 49*(6), 6667–6677.

Matsubayashi, T., Sawada, Y., & Ueda, M. (2013). Does the installation of blue lights on train platforms prevent suicide? A before-and-after observational study from Japan. *Journal of Affective Disorders, 147*(1–3), 385–388.

Mishara, B. L. (2007). Railway and metro suicides: Understanding the problem and prevention potential. *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 28*(S1), 36–43.

National Action Alliance for Suicide Prevention. (2014). A prioritized research agenda for suicide prevention: An action plan to save lives. Retrieved from http://actionallianceforsuicideprevention.org/sites/actionallianceforsuicideprevention.org/files/Agenda.pdf.

Owens, D., Horrocks, J., & House, A. (2002). Fatal and non-fatal repetition of self-harm. *The British Journal of Psychiatry, 181*(3), 193–199.

Pirkis, J., Too, L. S., Spittal, M. J., Krysinska, K., Robinson, J., & Cheung, Y. T. D. (2015). Interventions to reduce suicides at suicide hotspots: A systematic review and meta-analysis. *The Lancet Psychiatry, 2*(11), 994–1001.

Protection of Lawful Commerce in Arms Act. (2005). Retrieved from http://www.gpo.gov/fdsys/pkg/BILLS-109s397enr/pdf/BILLS-109s397enr.pdf.

Renzetti, C. M., & Edleson, J. L. (2008). *Encyclopedia of interpersonal violence*. Thousand Oaks: Sage Inc.

Schuster, M. A., Franke, T. M., Bastian, A. M., Sor, S., & Halfon, N. (2000). Firearm storage patterns in US homes with children. *American Journal of Public Health, 90*(4), 588–594.

Switchblade Knife Act. (1958). Retrieved from http://www.gpo.gov/fdsys/pkg/USCODE-2011-title15/html/USCODE-2011-title15-chap29.htm.

Spicer, R. S., & Miller, T. R. (2000). Suicide acts in 8 states: Incidence and case fatality rates by demographics and method. *American Journal of Public Health, 90*(12), 1885–1891.

United Nations Office of Drugs and Crime. (2013). Global study on homicide 2013: Trends, Context, Data. Retrieved from http://www.unodc.org/documents/gsh/.

US Department of Health and Human Services. (2014). Results from the 2013 national survey on drug use and health: Mental Health Findings. Retrieved from http://www.samhsa.gov/data/sites/default/files/NSDUHmhfr2013/NSDUHmhfr2013.pdf.

Violent Crime Reduction Act. (2006). Retrieved from http://www.legislation.gov.uk/ukpga/2006/38/section/66#.

World Health Organization. (2006). Pesticides are a leading suicide method. Retrieved from http://www.who.int/mediacentre/news/notes/2006/np24/en/.

World Health Organization. (2009). Guns, knives and pesticides: Reducing access to lethal means. Retrieved from http://www.who.int/violence_injury_prevention/violence/lethal.pdf.

World Health Organization. (2014). Suicide, fact sheet. Retrieved from http://www.who.int/mediacentre/factsheets/fs398/en/.

Yip, P. S., Caine, E., Yousuf, S., Chang, S. S., Chien-Chang Wu, K., & Chen, Y. Y. (2012). Means restriction for suicide prevention. *The Lancet, 379*(9834), 2393–2399.

Chapter 12
Dissociation and Habituation as Facilitating Processes Among Suicide Behaviours

Leah Shelef, Neta Korem and Gil Zalsman

Suicidality and suicidal behaviour have been, and are still, the subject of many studies, as they are considered the main cause of death throughout the world (McIntosh, 2000; World Health Organization, 2014), more than any armed conflict or motor vehicle accident (Joiner, 2005). It is the second leading cause of death among 15–24-year-old adolescents and young adults (Heron, Hoyert, & Murfhy, 2009; Sullivan, Annest, Simon, Luo, & Dahlberg, 2015) in USA (Rockett et al., 2012) and in Europe (Stone et al., 2006). Suicide is also a leading cause of death in most armies, with a dramatic rise in the US Army and Marine suicide rate, surpassing that for the general population for the first time in decades (Hoge & Castro, 2012; Nock et al., 2014). While in the US there was only a minor change in suicide rates among civilian population during recent years, suicide rate in the US army had dramatically increased (Archuleta et al., 2014; Lineberry & O'Connor, 2012; Nock et al., 2013, 2014).

A more common phenomenon and a major risk factor for complete suicide is suicide attempt (Mann et al., 2005; Spirito & Esposito-Smythers, 2006). Subjects with history of severe suicide attempts are at greater risk for future suicide than those who have conducted mild attempts (Bergen et al., 2012; Borges et al., 2010). This fact applies for adolescents as well (Beautrais, 2003a).

When addressing a suicide attempt one should take into account the degree of the intention to die and the lethality of the suicide attempt (Beautrais, 2001; Brown,

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Henriques, Sosdjan, & Beck, 2004; Posner et al., 2011; Silverman, Berman, Sanddal, O'Carroll, & Joiner, 2007).

One of the greatest risk factor for suicide attempt is mental disorders (Mann et al., 2005). A recent study in the US Army showed that pre-enlistment mental disorders are associated with one-third of post-enlistment first suicide attempts (Nock et al., 2014).

Suicide prevention requires a combination of universal and selective strategies (Mann et al., 2005; Rosenberg, Smith, Davidson, & Conn, 1987; Wasserman et al., 2015; Zalsman et al., 2016). Limiting access to lethal means is one of the important and critical strategies (Lubin et al., 2010; Reisch, Steffen, Habenstein, & Tschacher, 2013; Spirito & Esposito-Smythers, 2006). Limiting access to firearmsguns in military (Reisch et al., 2013; Spokas, Wenzel, Brown, & Beck, 2012) or in civilian population when removal and prevention using dangerous means like Golden Gate Bridge (Blaustein & Fleming, 2009; Daigle, 2005). Selective strategies are appropriate for subgroups that may be at increased risk for suicidal behaviour (Simon et al., 2002). Mental disorders, especially depressive disorder was found to be the leading diagnosis for people who died by suicide (Apter et al., 1995; Buzan & Weissberg, 1992; Cipriani, Hawton, Stockton, & Geddes, 2013; Zhang & Li, 2013).

A selective strategy supplements the universal strategy by potentially identifying heterogeneity in suicide behaviour to offer suicide subtypes (Rosenberg et al., 1987). Studies have shown that among adolescents there are two distinct types of suicidal behaviours—The "wish to die" subtype consists of people who go through the process of suicidal thought, suicide planning, and suicide attempt (Joiner, Brown, & Wingate, 2005b). Their suicide completion is non-impulsive (Apter et al., 1995; Levinson, Haklai, Stein, Polakiewicz, & Levav, 2007; Zouk, Tousignant, Seguin, Lesage, & Turecki, 2006). The members belonging to this subtype usually exhibit high levels of depression and hopelessness (Spirito & Esposito-Smythers, 2006; Wyder & De Leo, 2007).

In contrast, in the "wish not to be here" subtype, consisting of people with a momentary intent to die, there is little evidence of a gradual progression leading up to the suicide attempt (Zouk et al., 2006). People belonging to this category usually exhibit high levels of impulsiveness, aggressiveness, and difficulties in problem solving (Spirito & Esposito-Smythers, 2006; Spokas et al., 2012; Wyder & De Leo, 2007; Zouk et al., 2006). They are more likely to be characterized by the absence of depressive disorder (Spokas et al., 2012; Zouk et al., 2006), and are more likely to manifest active suicidal behaviour due to short-lived mood reactivity such as that seen in affective instability (Zouk et al., 2006).

Both suicidal subtypes are frequent among adolescents and have a similar level of lethality (Spirito & Esposito-Smythers, 2006; Spokas et al., 2012; Wyder & De Leo, 2007). Even though most of the basic strategies for preventing suicide involve detection and treatment of depression (Apter et al., 1995). Depression is a risk factor likely to identify depressed people, so focusing mainly on it, has the potential to underidentify, creates a risk of sub-diagnosing adolescents who are at risk for making impulsive suicide attempts and are not necessarily depressed (Spirito & Esposito-Smythers, 2006).

There have been varied attempts for classifying factors that are associated with suicide attempts (Spirito & Esposito-Smythers, 2006). Stressful life event is one of the group classifications. Many studies deal with the association between objectively stressful life events and suicidal risk (Beautrais, 2003b; Joiner & Rudd, 2000; Orbach, 1997). It was found that individuals who have had a previous suicide attempt reported significantly higher objectively stressful life events than depressed patients who are not suicidal (Fergusson, Woodward, & Hordwood, 2000).

Another group of classification as mentioned above refers to mental pathology (Beautrais, 2001; Brent & Apter, 2003). Not only mental pathology and personality disorders but also characteristics and personality factors may increase the risk of suicidality. Personal resources are a product of the environment and genes and constitute the sum of all coping styles and behavioural tendencies that are stable and affixed over time (Brezo, Paris, Tremblay, Vit, & Turecki, 2006). Therefore, the ability of the personal resources is to affect the development of positive or negative, adaptive or non-adaptive coping mechanisms when facing changing situations (Beautrais, 2003b). A review of close to 1000 publications relating to personality traits and factors, revealed that suicidality is most likely an incorporated interaction of absence adaptations between cognitions, feelings and behaviours that join together and expedite, in external and/or internal processes, the suicidal act (Brezo et al., 2006). A study that examined the relative contribution of psychiatric diagnosis, as opposed to psychosocial variables and personality factors, on the intensity of suicide ideation among college students, found that psychosocial variables such as negative and stressful life events, loneliness and personality factors such as problem-solving abilities and the belief in the ability to problem solve were the most significant to the intensity of the suicide ideation (Clum, Esposito, Hirai, & Nelson 2000).

Third group of classification associated with suicide refers to internal subjective experience. Hopelessness is one of the phenomenological situations that is in high correlation to suicidal behaviour (Beck, Brown, Berchick, Stewart, & Steer, 2006). An internal subjective phenomenological experience recognized in professional literature as having a strong relationship to suicidality is the mental pain experience (Shneidman, 1985). Mental pain on its own cannot lead to suicidal behaviour; it will be expressed by suicidal behaviour when the individual will not have the ability and the means to lessen the pain (Orbach, Mikulincer, Sirota, & Gliboa-Schechtman, 2003).

Nearly all empirical researches deal with the causes and factors of suicide, but very little research deals with the question of what facilitates suicide (Joiner, 2005).

New approaches seeking to find the connection between the subjective perception of the individual and suicidal behaviour, suggest an important viewpoint to the exploration of the suicide phenomenon. This viewpoint stems from the question of what is the process that facilitates the suicide attempt among individuals with suicidal characteristics and risk factors. Or in other words, what makes the suicidal behaviour possible? This question stems from a study and the understanding that not everyone who is considered at risk will actually turn to suicidal behaviour (Orbach, 2006; Stellrecht et al., 2006).

This emerging approach suggests additional necessary factors, which through their presence, facilitate the suicidal act. Suicide facilitating factors are different from the reason for suicide in that they do not constitute a direct cause for suicide, even though they do raise the risk and the probability of the suicidal act. In addition, their presence lays the foundation and removes the factors which delay suicide, that exist in every suicidal act (Joiner, 2005; Orbach, Kedem, Herman, & Apter, 1995).

The common perception today is that only the combination of factors and reasons, together with suicide facilitating factors, can motivate the suicide process and enable its execution (Orbach, 1997).

Two processes which facilitate suicide have been identified in the literature to date as suicide facilitating factors: Bodily Dissociation and Habituation and Practice, which will presently be elaborated on.

Bodily Dissociation and Suicidal Behaviour

In exploring the term dissociation, it is possible to distinguish between two types of explanations, the first deals with the reaction to an incident which is too hard to retain emotionally, and the other type of explanations deals with a response developed from infancy as a result of the attitude of a significant person towards the child's body (Orbach, 2006).

The explanations referring to dissociation as a result of a traumatic incident is also recognized in research literature as 'Body Alienation' or as 'Body Detachment' and deal with feelings of separation and distancing from the body that harms the sense of body entirety. This is a reaction that usually occurs as a result of a physical or emotional trauma and creates an internal body detachment which dulls the physical and/or emotional experience. In this situation, the ongoing continuum of the conscious experience is cut-off for various periods of time, and the range of reactions varies from a normal adaptive response and up to severe pathology. Thus, the dissociative reaction is, in fact, a coping mechanism for feelings that are hard to contain, which enables a sort of separation from the event. The use of cognitive and emotional mechanisms during trauma decreases the individuals' ability to connect between what he is experiencing or what he understands that he experienced to what he is feeling (Orbach, Lotem-Peleg, & Kadam, 1995b).

The dissociative reaction may lead to two situations, separation or inability to control behaviours (in the sense of monitoring and regulation). One situation deals with the different ways of severance such as: cognitive narrowing, separation or split in the experiences of the world and the self, feelings of alienation towards the body and/ or the self, various distortions in body perception, and up to the loss of bodily pain sensation. A second situation deals with the inability to control behaviours, such as compulsive behaviours, obsessive thoughts and up to conversive reactions (Orbach, 1994).

A different type of explanation deals with the care for the body by a significant other. Various theoreticians found a connection between the attitude towards the

body given by the caretaker and between self-destructive behaviours (Freud, 1966; Furman, 1984). They assume that dissociative behaviour develops in early childhood in response to the child's attempt to deal with intolerable traumatic experiences. According to these theories, the dissociation develops at first as a coping mechanism of the child from threatening experiences and later on the dissociation becomes severance and indifference towards the body (Orbach, 2006).

The initial parental care including the physical care of the baby will constitute the internalization basis for him with regard to the rest of his adult life and his attitude towards his body (Orbach, 2006). When the parental care is characterized by physical abuse, by a love–hate relationship and/or by a sadomasochistic relationship, an internalization of a lack of caring towards the internal and physical needs and a negative attitude towards the body may occur. Likewise, an internalization of a lack in physical sensations, a distorted body perception, a distortion in normal physical pleasure and as a result sadomasochistic physical pleasure, may occur (Furman, 1984).

The final result of the dissociative development is the generalization of the severance and the indifference into a permanent and stable coping mechanism for stressful situations. This same severance towards the body, which initially served as a coping mechanism from harsh feelings, turns at its end into an accustomed response, when the person is in stressful situations that recur time and time again and responds to them with dissociative reactions (Orbach, 2006).

Therefore, the utilization of dissociation as a coping mechanism, which is useful in dealing with harsh feelings, may in time turn into a non-useful coping mechanism of escape from coping. The ongoing use of the dissociation mechanism and the coping strategy of severance, as well as the lack of physical pain and the indifference towards the body and the self may contribute during stressful situations to sever off from feelings, to dull the senses and to lead to behaviours of self-harm and even to complete suicide (Orbach, Kedem, Herman, & Apter, 1995).

The development of the term dissociation and its relation to suicidal behaviour was initiated in reference to the suicidal act itself. The perception was that the suicidal act is composed in itself of a dissociation, which is expressed through cognitive narrowing named 'tunnel vision' (Shneidman, 1985). Since the individuals' perception is so narrow and generalized, through great difficulties, and the complete disregard of internal experiences and an external reality, to the point of reaching a state of behaviour that leads to death (Shneidman, 1985).

Later on, the attitude towards the dissociation term was expanded to include not only the suicidal act itself, but also it being a part of a process that develops into a dynamic process that leads to suicide. This unique dynamic develops when the individual tends to grant negative meaning to events. The negative meaning leads to the overflow of negative feelings and intensifies the suffering. When the suffering becomes unbearable and there is difficulty in dulling the feelings and sensations with the dissociation mechanism in order to escape the intense emotional pain, the individual may implement the destructive act of suicide (Baumeister, 1990).

A study that examined the connection between suicidal tendencies and dissociation (cognitive dissociation, emotional dissociation and dissociation relating to

the sense of control), in three different groups: a group of adolescents who carried out a suicidal attempt, a group of depressed non-suicidal individuals and a control group, found a high positive correlation between rejection of life and the attraction to death in the three measures of dissociation (Orbach, Kedem, Herman, & Apter, 1995).

Another study which examined degrees of dissociation among three groups: suicidal hospital patients, depressed non-suicidal patients and a control group found that the suicidal patients showed the highest degree of dissociation among the three groups (Orbach, Kedem, Herman, & Apter, 1995). Additionally, investigators who explored dissociation tendencies and attitudes towards the body among hospitalized suicidal adolescents, hospitalized non-suicidal depressed individuals, and a control group, found in one study, that the hospitalized suicidal group reported a higher degree of physical dissociation (Orbach, Stein, Shani-Sela, & Har-Even, 2001). A different study that investigated the dissociation component in three dimensions: cognitive dissociation, emotional dissociation and dissociation associated with the sense of control, found that the hospitalized suicidal group showed more tendencies of dissociation in the dimension associated with sense of control than the other two groups (Orbach, Kedem, Herman, & Apter, 1995). Moreover, the suicidal group displayed stronger negative attitudes and feelings towards the body than the other groups (Orbach, Lotem-Peleg, & Kedem, 1995b), as well as a bigger gap between the existing and desired body image and greater emotional severance from the body (Orbach, Lotem-Peleg, & Kedem, 1995b). Therefore, it was concluded that among people with suicidal tendencies, the expressed dissociative tendency, even in analgesics (the loss of pain sensation), may accelerate the suicidal behaviour in comparison to people without a dissociative tendency (Orbach et al., 1996b).

One of the phenomenons that are strongly identified with dissociation is the analgesics to physical pain (the loss of pain sensation). To date, pain is seen as a perceptual multi-dimensional phenomenon which includes, together with the sensation component, also emotional and motivational components as well as cognitive appreciation components. Thus, the variances in the intensity of the pain threshold and the pain tolerance threshold, as well as the analgesic tendency are affected not only by physiologic factors but by personality factors as well (Turk & Melzack, 1992).

Studies indicate that suicidal adolescents show a much higher pain threshold than other adolescents (Orbach et al., 2001). One study found that the higher the degree of depression, anxiety, helplessness and severance, the higher the pain threshold (Orbach, Mikulincer, King, Cohen, & Stein, 1997). Another study which compared between adolescents who have had a suicide attempt, hospitalized psychiatric patients and a normal study group found that a high pain threshold is most common among the suicidal group (Orbach et al., 1996a). The same study also found a higher degree of analgesics to pain among people who have tried to commit suicide in comparison to people injured in accidents. The researchers reported in their study that among the accident victims there was a negative correlation between the experience of internal helplessness and the pain tolerance—this indicates a self-preservation and self-defense mechanism. Among the suicidal individuals, a

positive correlation was found, thus, the stronger the internal distress experience, the stronger the pain tolerance was—this indicates a self-destruction mechanism (Orbach et al., 1996a, b).

A study that examined pain sensitivity among suicidal individuals in order to show a connection between dissociation to physical pain and suicidal tendencies found that suicidal adolescents experienced electric shock as less painful and showed greater tolerance to the pain they experienced in comparison to the psychiatric non-suicidal adolescents and to the control group (Orbach, Kedem, Gorchover, Apter, & Tyano, 1993).

Interpersonal Theory

During the last few years a theory which reinforces the perception that subjective internal processes have a significant connection to suicidal behaviour was developed, one of the theories that support this perception is the interpersonal theory (Joiner, 2005). The interpersonal theory is based on the understanding that not all those who are at risk will get to the point of suicidal behaviour, and based on this, distinguishes between different parameters within the same risk groups for suicidality (Joiner et al., 2005c). Therefore, the basic assumption of this theory is that the individual will not choose in the suicidal behaviour unless he has a strong passion to die on one hand and the genuine ability to carry out the suicidal act on the other (Joiner, 2005).

The theory proposes three components that when combined increase the suicidal risk. Two of the components are factors in the subjective internal experience and we will expand on them here: 'burdensomeness' and 'social belongingness'. The third component is factors that facilitate the suicidal actions: 'habituation and practice' and we will elaborate on it in the section that deals with suicide enabling factors.

The term '**burdensomeness**' deals with the individual's internal subjective feeling that he is a burden on others. In a study that examined the connection between feelings of 'burdensomeness' to suicidal behaviours, found high correlations even when components such as hopelessness, functional impairment and mental pain were neutralized (Cukrovicz, Cheavens, Van Orden, Regain, & Cook, 2011). The study compared between 20 letters written by individuals who tried to commit suicide to 20 letters of deceased individuals who died as a result of their suicide attempt. The study found that the higher the intensity of the burdensomeness feeling was, the more serious the suicide attempt was (Joiner et al., 2002).

A study that compared between serious suicide attempts and non-serious attempts, both in the physical aspect and in the suicide meaning aspect, found that those who conducted more serious suicide attempts were those with a stronger passion intensity to bring others, following their death, a sense of comfort. In comparison to them, those who conducted less severe suicide attempts were those with a stronger passion intensity to express anger or to punish others or themselves. One of the conclusions arising from the study was that the passion of the suicide

attempter for others will be better off without them expresses their feelings of burdensomeness on others, and their belief that only after their death, will others be able to achieve comfort (Brown, Comtois, & Linehen, 2002).

A recent study from 2008 among a population of 309 American Psychology students, of them, a majority of females (74%), examined three main questions: The first question, who wants to die by suicide? The second question, who can die by suicide? And the third question asked was, who is at highest risk for suicidality?

The study found that the two internal subjective components 'burdensomeness' and 'belongingness' were significantly higher in correlation to suicide ideation. Both of these components answered the first question asked in the study, who wants to die by suicide. One of the study conclusions was that the passion to die is a result of the combination of both of these subjective components which are connected to each other. When the need to belong fails, is not fully satisfied, or is missing, it significantly contributes to the feeling of burdensomeness on others and the subjective feeling of burdensomeness on others exacerbates the passion to die (Van Orden, Witte, Gordon, Bender, & Joiner, 2008).

The findings answer the second study question, who can die? Show that additional components that contribute to the passion to die are subjective components: mental pain and hopelessness are known in the professional literature as being related to suicidality. To the two known components: mental pain and hopelessness, an additional, less known dimension that focuses of the ability to perform the suicidal behaviour, is added. The ability to perform a suicidal behaviour relates to the ability to carry it out and includes within it, a process of habituating and practice, which will be elaborated on later.

The third study dealing with the question, who is at highest risk for suicidality, found that those with a passion and those who obtain the ability to perform a provocative physical injury are at highest risk for suicide. However, the passion to die on all components that constitute this passion, and the capability to acquire the ability to perform the suicidal behaviour, while necessary, are not sufficient on their own to bring to suicidal behaviour (Van Orden et al., 2008).

A contemporary component in the investigation of the subjective elements related to suicidality is the **'belongingness' component** (Joiner, 2005). Loneliness and social isolation were originally part of Durkheim's model for suicide (Conner, Britton, Sworts, & Joiner, 2007; Prinstein, Boergers, Spirito, Little, & Grapentine, 2000). The need to belong is one of the decisive influences on the health and feelings of well-being of the individual (Baumeister, DeWall, Ciarocco, & Twenge, 2005; Baumeister & Leary, 1995; Joiner, 2005). Moreover, the frustrating need to belong weakens the regulation abilities and raises the pain threshold (Baumeister et al., 2005). Moreover, there is evidence, that social rejection (i.e. thwarted belongingness) can result in an individual being 'numbed' to physical pain (DeWall & Baumeister, 2006; Eisenberger, Lieberman, & Williams, 2003). This suggests that thwarted belongingness my also contribute to an individual's ability to engage in serious suicidal behaviour (DeWall & Baumeister, 2006; Orbach, 1994, 2006).

A study conducted among those who attempted suicide found that three variables were common in the month prior to the attempt: withdrawal in feelings of belongingness, feelings of burdensomeness on others and refusal to accept help from others (Joiner, Hollar, & Van Orden, 2006; Rudd, Joiner, & Rajab, 1996).

A study conducted in the United States, which examined the connection between belongingness and suicidality, found that when the football league takes place intensively, people fill cohesion and part of group. This usually increases the individual's feelings of belongingness and delays suicide attempts (Joiner, Hollar, & Van Orden, 2006).

Recent study examined suicide attempters ($n = 32$) were compared with non-suicidal psychologically treated peers ($n = 38$) and controls ($n = 33$), matched for sex and age (mean 19.7 years). Pearson's analysis was used to quantify the relationship between the variables from the two models and hierarchal regression analysis was used to determine the explanation of suicidal ideation variance by these variables. It was found that suicide attempters have more difficulties in problem-solving, negative emotion regulation and burdensomeness compared with their peers ($P < .001$). These variables are all closely correlated with each other and to suicide ideation ($r > \pm 0.5$; $P < .001$). Prior suicide attempt, loneliness and burdensomeness together explain 65% ($P < .001$) of the variance in suicidal ideation (Shelef, Fruchter, Mann, & Yacobi, 2014).

The 'belongingness' component was only scarcely explored in relation to suicidality and therefore the lack of theoretical information on the subject. It is one of the components included and investigated in the current study.

Habituation and Acquired Capability and Suicidal Behaviour

The interpersonal theory suggests three components that the interaction between them increases the risk of executing lethal self-harm. Two of them, "burdensomeness" and "social belongingness", were discussed in the previous part and the third component, **habituation**, will now be discussed in the following section.

The habituation concept refers to a mental process, which enables, following a process, to obtain the capability of executing lethal self-harm (Joiner, 2005; Stellrecht et al., 2006). Habituation has also been postulated to occur through other repeated painful and fear-inducing behaviours like self-injury and physical abuse (Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). The argument at the base of this theory is that people have the ability to develop fearlessness, becoming accustomed to it and practicing ways for dealing with pain and with provocative behaviours such as self-harm. When this ability is acquired the risk for suicidal behaviour and actual implementation of self-harm rises (Joiner, 2005).

Not only is habituation developed for the negative parts of self-harm such as: fear, pain and humiliation (Stellrecht et al., 2006), the habituation may also occur when exposed to violence (Conner et al., 2001), to bodily harm such as tattoos/piercing, to violent sports or even by watching a movie about others performing a violent and/or suicidal act. The assumption of the interpersonal theory is that exposure to violence, pain and provocation can serve to reduce the barrier that delays implementation of lethal self-harm (Joiner, 2005).

A study that compared adolescents who planned to commit suicide but did not carry out the suicide attempt with those who planned and did carry out the suicide attempt and between a third group that included adolescents who did not plan to commit suicide but had conducted a suicide attempt, found that the least impulsive group was that of the adolescents who planned to commit suicide but did not carry out any suicide attempt. It was also found that adolescents who had conducted a non-planned suicide attempts were less impulsive than the adolescents who planned and carried out the suicide attempt. Therefore, the most impulsive group was that of ones who planned and carried out the suicide attempt. One of the explanations for these findings is derived from the interpersonal theory, which determines that people who are more impulsive to begin with are also those who are more exposed than others to pain and to provocative behaviours (Witte et al., 2008).

A study that examined the psychophysiological phenomenon of skin electric shock reaction as a result of habituation in suicidal behaviour found rapid habituation and a lack of skin sensation, especially among the study group of those who have conducted a violent suicide attempt in comparison to the group that conducted non-violent suicide attempts and in comparison to two other groups diagnosed with depression, one characterized as having suicide ideation and the other diagnosed as aspiring to die ($N = 500$). All examinees were receiving pharmaceutical treatment and all were examined during their suicidal episode, additionally, all received electric shock in a varied and coincidental intensity for 3 min. One of this study's findings was that when testing the group of those who attempted suicide, regardless of the method they used, the habituation that occurred was likely an expression of a disturbance in the control of urges or a biological experience shared with the suicidal act. Thus, physical habituation constitutes a major component in the suicidal act (Wolfersdorf, Straub, Barg, Keller, & Kaschka, 1999).

Physical habituation is not the only process that can lead to the execution of a suicidal act. One of the innovations of the interpersonal approach is that individuals may habituate and practice a suicidal act in their mind, including thought practice about the method of execution itself. By using imagination, dealing with and reconstructing the injury, habituation which may remove the mental barrier to suicidality occurs (Joiner, 2003, 2005).

The main argument of this model is that an interaction between the various components occurs and starts a process that may lead to the execution of the lethal injury. Self-harm will occur, according to the theory, when the passion to die becomes stronger and when the ability to execute the self-harm behaviour is acquired (Van Orden et al., 2008).

According to the theory, the process begins when two basic needs are damaged: the feeling of effectiveness and the feeling of connectedness, these promote negative feelings and may lead the individual to feelings of 'burdensomeness' and to feelings of low 'belongingness'. From here, the way to an increase in the passion to die is short. This process will become active and lethal if the individual will be able to turn the suicidal thought into an active behaviour targeted at causing self-harm to the degree that can cause death (Joiner, Hollar, & Van Orden, 2006).

It should be mentioned that the feeling of 'burdensomeness' and the feeling 'belongingness' are internal subjective feelings that paint the individual's world. Often it is a misconception that instigates the whole suicidal process, even though it has no basis in the social or familial reality of the individual (Joiner, 2005).

The empirical research supporting this theory is still in its early stages, although a study conducted among 100 suicidal individuals found that the differentiating component between those who have attempted suicide to those who died as a result of the suicidal act was the planning, practice and preparation of the suicidal act (Joiner, 2003).

Another study examined 440 non-hospitalized psychiatric patients, with severe suicide ideation who have conducted at least one suicide attempt in the past, with the intent of exploring the difference between 'plans' and 'desires'. The study's focus was to test what the most crucial point, which may lead to the current suicidal act is.

'Resolve plans and preparation' is a concept which combines: the courage to conduct a suicide attempt, the competency to conduct a suicide attempt, the value and meaning of the suicide attempt, the opportunity to conduct the suicide attempt and the specific preparations for it. Passion relates to reasons for living, the wish to die, the wish not to live, a passive suicide attempt, the passion for a suicide attempt, a lack in discouraging factors from conducting the suicide attempt and talk about death or suicide attempts. The investigators found that the 'plans' were the most significant and major differentiating factors to the suicide attempt history and the current suicide attempt (Joiner et al., 2003).

A different study, which can teach us about the habituation component in the self-harm process, was conducted among 89 young adolescents (mean age 14.7) that performed self-harm behaviours to their body without intention to die. The study's goal was to examine the context of the characteristics and the behavioural function of the self-harm. One of the study's conclusions was that the component of lack of physical pain had the highest significance in the execution of the suicidal behaviour. One of the explanations arising from this study is that self-harm releases endorphins, as in sexual stimulation, and as a result, the pain experience is blocked. With respect to habituation, it was found that the more occupied the individual is with observing the implementation of harm, or the more exposed he is to a close friend who implements self-harm, the higher his risk for conducting repetitive self-harm behaviours himself (Nock & Prinstein, 2005).

A study from 2008 examined three of the interpersonal theory components: 'habituation', 'burdensomeness' and 'belongingness', and the connection of these three components to suicide attempts among an American soldier population who

were deployed in Iraq and Afghanistan and were exposed to combat situations. The study was conducted following a significant rise in suicides and suicide attempts of soldiers, since 2003, in comparison to the general civilian population in the same age range, and the effort of the United States military to decrease suicide and suicide behaviour rates among soldiers. The study examined 16 soldiers, 9 of them (56%) between the ages of 18–24. It was found that soldiers who witnessed violent acts or combat situations, especially with civilians, developed habituation to combat stimulation, felt that they were burdening those surrounding them when they returned home, and felt a lack of belongingness even after a prolonged time of being back at home. In addition, the same soldiers felt a decrease in pain sensation and reported that their main strategy for dealing with the mental situation they were experiencing was by use of dissociation or severance. According to the author's perception, these results underline the potential for use of the interpersonal theory for therapeutic interventions targeted at reducing emotional overflow and reducing the subjective perception of 'burdensomeness' and 'lack of belongingness'. Treating these components, according to the authors, may reduce the risk of suicidal behaviours among soldiers (Brenner et al., 2008).

Conclusion

The purpose of this chapter is to expose researchers to examine the influence of the dissociation and the habituation on suicidal behaviour as explored above. To the best of our knowledge one has examined the two facilitating processing at the same time and on the same participant apart from one.The aim of this study was to shed light on the role of dissociation and habituation as facilitators of suicidal behaviour, beyond other well-established risk factors of stress, such as depression and hopelessness (Shelef, Levi-Belz, & Fruchter, 2014). The study group included 167 soldiers, aged 18–21 years divided into three research groups: soldiers who made suicide attempts, soldiers who were psychologically treated, and a control group of soldiers having no history of mental health treatment. All subjects completed a suicide ideation scale and instruments measuring stress, mental pain, bodily dissociation and habituation. It was found that suicide attempters had higher levels of subjective stress as well as depression and hopelessness compared with the psychologically treated and control groups. Using regression analysis, suicide facilitators of dissociation and habituation explained a significant proportion of the suicidal ideation variance, above and beyond the contribution of stress, depression and hopelessness. A combined effect of stress and facilitating factors amplifies the level of suicidal ideation among soldiers (Shelef, Levi-Belz, & Fruchter, 2014). The exploration of these processes may lead to a better understanding of the suicidal behaviour phenomenon and could, in the future, provide ideas for the prevention of suicidal behaviours and treatment of individuals who are at risk for suicide.

References

Apter, A., Gothelf, D., Orbach, I., Weizman, R., Ratzoni, G., Har-Even, D., & Tyano, S. (1995). Correlation of suicidal and violent behaviour in different diagnostic categories in hospitalized adolescent patients. *Journal of the American Academy of Child and Adolescent Psychiatry, 34*(7), 912–918.

Archuleta, D., Jobes, D. A., Pujol, L., Jennings, K., Crumlish, J., Lento, R. M., … Crow, B. (2014). Raising the clinical standard of care for suicidal soldiers: An army process improvement initiative. *US Army Medical Department Journal*, 2014(4–14), 55–66.

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review, 97*(1), 90–113.

Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Twenge, J. M. (2005). Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology, 88*(4), 589–604.

Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin, 117*(3), 497–529.

Beautrais, A. L. (2001). Suicides and serious suicide attempts: Two populations or one? *Psychological Medicine, 31*(5), 837–845.

Beautrais, A. L. (2003a). Suicide and serious suicide attempts in youth: A multiple-group comparison study. *American Journal of Psychiatry, 160*(6), 1093–1099.

Beautrais, A. L. (2003b). Life course factors associated with suicidal behaviours in young people. *The American Behavioural Scientist, 46*(9), 1137–1156.

Beck, A. T., Brown, G., Berchick, R. J., Stewart, B. L., & Steer, R. A. (2006). Relationship between hopelessness and ultimate suicide: A replication with Psychiatric outpatients. *Focus, 4*(2), 291–296.

Bergen, H., Hawton, K., Waters, K., Ness, J., Cooper, J., Steeg, S., & Kapur, N. (2012). Premature death after self-harm: A multicentre cohort study. *The Lancet, 380*(9853), 1568–1574.

Borges, G., Nock, M. K., Abad, J. M. H., Hwang, I., Sampson, N. A., Alonso, J., … Kessler, R. C. (2010). Twelve month prevalence of and risk factors for suicide attempts in the WHO World Mental Health Surveys. *The Journal of Clinical Psychiatry*, *71*(12), 1617–1628.

Blaustein, M., & Fleming, A. (2009). Suicide from the golden gate bridge. *The American Journal of Psychiatry, 166*(10), 1111–1116.

Brenner, L. A., Gutierrez, P. M., Cornette, M. M., Betthauser, L. M., Bahraini, N. B., & Staves, P. J. (2008). A qualitative study of potential suicide risk factors in returning combat veterans. *Journal of Mental Health Counseling, 30*(3), 211–225.

Brent, D. A., & Apter, A. (2003). Adolescent suicide and suicidal behaviour: A time to assess and a time to treat. *Israeli Journal of Psychiatry, 40*(3), 159–162.

Brezo, J., Paris, J., Tremblay, R., Vit, M., & Turecki, G. (2006). Personality traits as correlates of suicide attempts and suicidal. *Psychological Medicine, 36*(2), 191–202.

Brown, M. Z., Comtois, K. A., & Linehen, M. M. (2002). Reasons for suicide attempts and non-suicidal self-injury in women with borderline personality disorder. *Journal of Abnormal Psychology, 111*(1), 198–202.

Brown, G. K., Henriques, G. R., Sosdjan, D., & Beck, A. T. (2004). Suicide intent and accurate expectations of lethality: Predictors of medical lethality of suicide attempts. *Journal of Consulting and Clinical Psychology, 72*(6), 1170–1174.

Buzan, R. D., & Weissberg, M. P. (1992). Suicide: Risk factors and prevention in medical practice. *Annual Review of Medicine, 43*(1), 37–46.

Cipriani, A., Hawton, K., Stockton, S., & Geddes, J. R. (2013). Lithium in the prevention of suicide in mood disorders: Updated systematic review and meta-analysis. BMJ: *British Medical Journal*, *346,* f3646.. doi:10.1136/bmj.3646.

Conner, K. R., Cox, C., Duberstein, P. R., Tian, L., Nisbett, P. A., & Conwell, Y. (2001). Violence, alcohol and completed suicide: A case-control study. *American Journal of Psychiatry, 158*(10), 1701–1705.

Conner, K. R., Britton, P. C., Sworts, L. M., & Joiner, T. E. (2007). Suicide attempts among individuals with opiate dependence: The critical role of belonging. *Addictive Behaviours, 32*(7), 1395–1404.

Clum, G. A., Esposito, C. L., Hirai, M., & Nelson, W. A. (2000). The relative contribution of diagnostic and psychosocial variables to severity of suicidal ideation. *Journal of Psychopathology and Behavioural Assessment, 22*(1), 79–90.

Cukrowicz, K. C., Cheavens, J. S., Van Orden, K. A., Ragain, R. M., & Cook, R. L. (2011). Perceived burdensomeness and suicide ideation in older adults. *Psychology and Aging, 26*(2), 331–338.

Daigle, M. S. (2005). Suicide prevention through means restriction: Assessing the risk of substitution: A critical review and synthesis. *Accident Analysis and Prevention, 37*(4), 625–632.

DeWall, C., & Baumeister, R. F. (2006). Alone but feeling no pain: Effects of social exclusion on physical pain tolerance and pain threshold, affective forecasting, and interpersonal empathy. *Journal of Personality and Social Psychology, 91*(1), 1–15.

Eisenberger, N. I., Lieberman, M. D., & Williams, K. D. (2003). Does rejection hurt? An fMRI study of social exclusion. *Science, 302*(5643), 290–292.

Fergusson, D. M., Woodward, L. J., & Hordwood, L. J. (2000). Risk factors and life processes associated with the onset of suicidal behaviour during adolescent and early adulthood. *Psychological Medicine, 30*(1), 23–39.

Freud, A. (1966). *Normality and pathology in childhood* (p. 124). London: Hogarth Press.

Furman, E. (1984). Some difficulties in assessing depression and suicide in childhood. In H. S. Sudak, A. B. Ford, & N. B. Rushforth (Eds.), *Suicide in the young* (pp. 245–258). Boston: John Wright PSG.

Heron, M. P., Hoyert, D. L., & Murfhy, S. L. (2009). Deaths: Final data 2006.

Hoge, C. W., & Castro, C. A. (2012). Preventing suicides in US service members and veterans: Concerns after a decade of war. *JAMA, 308*(7), 671–672.

Joiner, T. E., Jr. (2003). "Contagion" of suicidal symptoms as a function of assortative relating and shared relationship stress in college roommates. *Journal of Adolescence, 26*(4), 495–504.

Joiner, T. E. (2005). *Why people die by suicide*. Cambridge: MA: Harvard University Press.

Joiner. T. E., Jr., & Rudd, M. D. (2000). Intensity and duration of suicidal crises vary as a function of previous suicide attempts and negative life events. *Journal of Consulting & Clinical Psychology, 68*(5), 909–916.

Joiner, T. E., Jr., Pettit, J. W., Walker, R. L., Voelz, Z. R., Cruz, J., Rudd, M. D., & Lester, D. (2002). Perceived burdensomeness and suicidality: Two studies on the suicide notes of those attempting and those completing suicide. *Journal of Social and Clinical Psychology, 21*(5), 531–545.

Joiner, T. E., Jr., Steer, R. A., Brown, G., Beck, A. T., Pettit, J. W., & Rudd, M. D. (2003). Worst point suicidal plans: A dimension of suicidality predictive of past suicide attempts and eventual death by suicide. *Behaviour Research and Therapy, 41*(12), 1469–1480.

Joiner, T. E., Jr., Brown, J. S., & Wingate, L. R. (2005b). The psychology and neurobiology of suicidal behaviour. *Annual Review of Psychology, 56,* 287–314.

Joiner, T. E., Jr., Hollar, D., & Van Orden, K. (2006). On buckeyes, gators, super bowl sunday, and the miracle on ice: "Pulling Together" is associated with lower suicide rates. *Journal of Social and Clinical Psychology, 25*(2), 179–195.

Joiner, T. E., Jr., Conwell, Y., Fitzpatrick, K. K., Witte, T. K., Schmidt, N. B., Berlim, M. T., … Rudd, M.D. (2005c). Four studies on how past and current suicidality relate even when "everything but the kitchen sink" is covaried. *Journal of Abnormal Psychology*, *114*(2), 291–303.

Joiner, T. E., Jr., Van Orden, K. A., Witte, T. K., Selby, E. A., Ribeiro, J. D., Lewis, R., & Rudd, M. W. (2009). Main predictions of the interpersonal-psychological theory of suicidal behaviour: Empirical tests in two samples of young adults. *Journal of Abnormal Psychology, 118*(3), 634–646.

Levinson, D., Haklai, Z., Stein, N., Polakiewicz, J., & Levav, I. (2007). Suicide ideation, planning and attempts: Results from the Israel national health survey. *Israel Journal of Psychiatry and Related Sciences, 44*(2), 136–143.

Lineberry, T. W., & O'Connor, S. S. (2012). Suicide in the US army. *Mayo Clinic Proceedings, 87*(9), 871–878.

Lubin, G., Werbeloff, N., Halperin, D., Shmushkevitch, M., Weiser, M., & Knobler, H. Y. (2010). Decrease in suicide rates after a change of policy reducing access to firearms in adolescents: A naturalistic epidemiological study. *Suicide and Life-Threatening Behaviour, 40*(5), 421–424.

Mann J. J., Apter, A., Bertolote, J., Beautrais, A., Currier, D., Hass, A., … Hendin, H. (2005). Suicide prevention strategies: a systematic review. *JAMA,* 294(16), 2064–2074.

McIntosh, J. I. (2000). Epidemiology of adolescent suicide in the United States. In R. W. Maris, S. S. Canetto, J. L. McIntosh, & M. M. Silverman (Eds.), *Review of suicidology* (pp. 3–33). New York: Gulford Press.

Nock, M. K., Green, J, G., Hwang, I., McLaughlin, K.A., Sampson, N. A., Zaslavsky, A. M., & Kessler, R. C. (2013). Prevalence, correlates, and treatment of lifetime suicidal behaviour among adolescents: Results from the National Comorbidity Survey Replication Adolescent Supplement. *JAMA Psychiatry, 70*(3), 300–310.

Nock, M. K., Joiner, T. E., Jr., Gordon, K. H., Lloyd-Richardson, E., & Prinstein, M. J. (2006). Nonsuicidal self-injury among adolescents: Diagnostic correlates and relation to suicide attempts. *Psychiatry Research, 144*(1), 65–72.

Nock, M. K., & Prinstien, M. (2005). Contextual features and behavioural functions of self-mutilation among adolescents. *Journal of Abnormal Psychology, 114*(1), 140–146.

Nock, M. K., Stein M. B., Heeringa, S. G., Ursano, R. J., Colpe, L. J., Fullerton, C. S., … Kessler, R. C. (2014). Prevalence and correlates of suicidal behaviour among soldiers: results from the army study to assess risk and resilience in service members (Army STARRS). *JAMA Psychiatry, 71*(5), 514–522.

Orbach, I. (1994). Dissociation, physical pain and suicide: A hypothesis. *Suicide & Life-Threatening Behaviour, 24*(1), 68–79.

Orbach, I. (1997). A taxonomy of factors related to suicidal behaviour. *Clinical Psychology: Science and Practice, 4*(3), 208–224.

Orbach, I. (2006). The body-mind of the suicidal person. In T. E. Ellis (Ed.), *Cognition and suicide, theory, research, and therapy* (pp. 193–214). Washington DC: American Psychological Association.

Orbach, I., Kedem, P., Gorchover, O., Apter, A., & Tyano, S. (1993). Fears of death in suicidal and nonsuicidal adolescents. *Journal of Abnormal Psychology, 102*(4), 553–558.

Orbach, I., Kedem, P., Herman, L., & Apter, A. (1995). Dissociative tendencies in suicidal, depressed, and normal adolescents. *Journal of Social and Clinical Psychology, 14*(4), 393–408.

Orbach, I., Lotem-peleg, M., & Kadem, P. (1995b). Attitudes toward the body in suicidal, depressed and normal adolescents. *Suicide & Life-Threatening Behaviour, 25*(2), 211–221.

Orbach, I., Mikulincer, M., King, R., Cohen, D., & Stein, D. (1997). Thresholds and tolerance of physical pain in suicidal and nonsuicidal adolescents. *Journal of Consulting and Clinical Psychology, 65*(4), 646–652.

Orbach, I., Mikulincer, M., Sirota, P., & Gilboa-Schechtman, E. (2003). Mental pain: A multidimensional operationalization and definition. *Suicide and Life-Threatening Behaviour, 33*(3), 219–230.

Orbach, I., Palgi, Y., Stein, D., Har-Even, D., Lotem-Peleg, M., Asherov, J., & Elizur, A. (1996a). Tolerance for physical pain in suicidal subjects. *Death Studies, 20*(4), 327–341.

Orbach, I., Stein, D., Palgi, Y., Asherov, J., Har-Even, D., & Elizur, A. (1996b). Perception of physical pain in accidents and suicide attempts patients: Self-preservations vs self-destruction. *Journal of Psychiatric Research, 30*(4), 307–320.

Orbach, I., Stein, D., Shani-Sela., M. & Har-Even, D. (2001). Body attitudes and body Experiences in suicidal adolescents. *Suicide and Life-Threatening Behaviour, 31*(3), 237–249.

Posner, K., Brown, G. K., Stanley, B., Brent, D. A., Yershova, K. V., Oquendo, M. A., et al. (2011). The Columbia-suicide severity rating scale: initial validity and internal consistency findings from three multisite studies with adolescents and adults. *American Journal of Psychiatry, 168*(12), 1266–1277.

Prinstein, M. J., Boergers, J., Spirito, A., Little, T. D., & Grapentine, W. L. (2000). Peer functioning, family dysfunction, and psychological symptoms in a risk factor model for

adolescent inpatients' suicidal ideation severity. *Journal of Clinical Child Psychology, 29*(3), 392–405.

Reisch, T., Steffen, T., Habenstein, A., & Tschacher, W. (2013). Change in suicide rates in Switzerland before and after firearm restriction resulting from the 2003 "Army XXI" reform. *American Journal of Psychiatry, 170*(9), 977–984.

Rockett, I. R., Regier, M. D., Kapusta, N. D., Coben, J. H., Miller, T. R., Hanzlick, R. L., … Smith, G. S. (2012). Leading causes of unintentional and intentional injury mortality: United States, 2000–2009. *American Journal of Public Health*, *102*(11), e84–e92.

Rosenberg, M. L., Smith, J. C., Davidson, L. E., & Conn, J. M. (1987). The emergence of youth suicide: An epidemiologic analysis and public health perspective. *Annual Review of Public Health, 8*(1), 417–440.

Rudd, M. D., Joiner, T., & Rajab, M. H. (1996). Relationships among suicide ideators, attempters and multiple attempters in a young-adult sample. *Journal of Abnormal Psychology, 105*(4), 541–550.

Shelef, L., Levi-Belz, Y., & Fruchter, E. (2014a). Dissociation and acquired capability as facilitators of suicide ideation among soldiers. *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 35*(6), 388–397.

Shelef, L., Fruchter, E., Mann, J. J., & Yacobi, A. (2014b). Correlations between interpersonal and cognitive difficulties: Relationship to suicidal ideation in military suicide attempters. *European Psychiatry, 29*(8), 498–502.

Shneidman, E. S. (1985). *The definition of suicide: An essay*. New York: Wiley.

Silverman, M. M., Berman, A. L., Sanddal, N. D., O'Carroll, P. W., & Joiner, T. E. (2007). Rebuilding the tower of babel: A revised nomenclature for the study of suicide and suicidal behaviour Part 1: Back ground, rationale, and methodology. *Suicide and Life-Threatening Behaviour, 37*(3), 248–263.

Simon, T. R., Swann, A. C., Powell, K. E., Potter, L. B., Kresnow, M., & O'Carroll, P. W. (2002). Characteristics of impulsive suicide attempts and attempters. *Suicide and Life-Threatening Behaviour, 32*(s1), 49–59.

Spirito, A., & Esposito-Smythers, C. (2006). Attempted and completed suicide in adolescence. *Annual Review of Clinical Psychology, 2,* 237–266.

Spokas, M., Wenzel, A., Brown, G. K., & Beck, A. T. (2012). Characteristics of individuals who make impulsive suicide attempts. *Journal of Affective Disorders, 136*(3), 1121–1125.

Stellrecht, N. E., Gordon, K. H., Van Orden, K., Witte, T. K., Wingate, L. R., Cukrowicz, K. C., … & Fitzpatrick, K. K. (2006). Clinical applications of the interpersonal psychological theory of attempted and completed suicide. *Journal of Clinical Psychology, 62*(2), 211–222.

Stone, D. H., Jeffrey, S., Dessypris, N., Kyllekidis, S., Chishti, P., Papadopoulos, F. C., & Petridou, E. T.(2006). Intentional injury mortality in the European Union: How many more lives could be saved? *Injury Prevention, 12*(5), 327–332.

Sullivan, E. M., Annest, J. L., Simon, T. R., Luo, F., & Dahlberg, L. L. (2015). Suicide trends among persons aged 10–24 years-United States, 1994–2012. *MMWR. Morbidity and Mortality Weekly Report, 64*(08), 201–205.

Turk, D. C., & Melzack, R. (1992). *Handbook of pain assessment*. London: Guilford Press.

Van Orden, K. A., Witte, T. K., Gordon, K. H., Bender, T. W., & Joiner, T. E., Jr. (2008). Suicidal desire and the capability for suicide: tests of the interpersonal-psychological theory of suicidal behaviour among adults. *Journal of Consulting and Clinical Psychology, 76*(1), 72–78.

Wasserman, D., Hoven, C. W., Wasserman, C., Wall, M., Eisenberg, R., Hadlaczky, G., … Carli, V. (2015). School-based suicide prevention programmes: The SEYLE cluster-randomised, controlled trial. *The Lancet, 385*(9977), 1536–1544.

Wolfersdorf, M., Straub, R., Barg, T., Keller, F., & Kaschka, W. P. (1999). Depressed inpatients, electrodermal reactivity, and suicide—A study about psychophysiology of suicidal behaviour. *Archives of Suicide Research, 5*(1), 1–10.

Witte, T. K., Merrill, K. A., Stellrecht, N. E., Bernert, R. A., Hollar, D. L., Schatschneider, C., & Joiner, T. E. (2008). "Impulsive" youth suicide attempters are not necessarily all that impulsive. *Journal of Affective Disorders, 107*(1–3), 107–116.

Wyder, M., & De Leo, D. (2007). Behind impulsive suicide attempts: Indications from a community study. *Journal of Affective Disorders, 104*(1), 167–173.

Zalsman, G., Hawton, K., Wasserman, D., van Heeringen, K., Arensman, E., Sarchiapone, M., … Zohar, J. (2016). Suicide prevention strategies revisited: 10-year systematic review. *The Lancet Psychiatry, 3*(7), 646–659.

Zhang, J., & Li, Z. (2013). The association between depression and suicide when hopelessness is controlled for. *Comprehensive Psychiatry, 54*(7), 790–796.

Zouk, H., Tousignant, M., Seguin, M., Lesage, A., & Turecki, G. (2006). Characterization of impulsivity in suicide completers: Clinical, behavioural and psychosocial dimensions. *Journal of Affective Disorders, 92*(2), 195–204.

World Health Organization. (2014). Preventing Suicide: A global imperative. Retrieved April 15, 2017, from: http://www.who.int/mental_health/suicide-prevention/world_report_2014/en/.

Chapter 13
Indirect Self-destructive Behaviour Across the Lifespan

Charissa Hosseini, Jessica Walsh and Lisa M. Brown

The first image that typically comes to mind when thinking of a person who is suicidal is usually pretty graphic: someone holding a gun to their head, preparing to jump off a bridge, taking an overdose of pills, slitting their wrists, stepping in front of a train, or placing a noose around their neck. Detection of self-destructive, death-hastening behaviours, however is not always so straightforward. Amongst all age groups, self-destructive behaviours are subtle, covert and indirect ways of hastening death that are less discernible than overt acts of suicide but are just as pernicious.

Empirically speaking, recent research has couched suicidal behaviour as a dimensional construct that exists on a spectrum (Farberow, 1986). On one end of this continuum is death by suicide, failed suicides, and amplified intentions to die that are anchored by feelings of hopelessness, depression, and worthlessness on the opposite end of the spectrum (Farberow, 1986). Actions that do not necessarily result in death but could eventually be serious and harmful, such as suicidal preparation, suicidal ideations, non-suicidal self-injury, and indirect self-destructive behaviours fall within this continuum (Farberow, 1986). However, extant clinical literature has focused unequally on certain aspects of this spectrum, privileging exploration of some constructs (e.g. death by suicide), whilst neglecting others. In part, this focused interest is attributable to the high level of lethality and time urgency associated with unambiguous suicidal threats and behaviours. As a result,

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indirect self-destructive behaviour has received scant attention in the scientific literature,

The aim of this chapter is to address this gap by highlighting the influence of indirect self-destructive behaviours on mental health across the lifespan. This chapter will describe the intersection of indirect self-destructive behaviours and age and will unpack the cohort effects therein. It will highlight the unique risk factors of each group to demonstrate that adolescents, adults, and older adults have distinct, multi-faceted, and complex needs that require specialized preventative services and intervention. Employing a similarly crosscutting framework, manifestations of indirect self-destructive behaviours will be examined across different psychopathologies (St. Germain & Hooley, 2012). Finally, clinical applications of these findings will be offered.

Defining Indirect Self-Destructive Behaviour

ISDB is defined as any long-term behaviour in which an individual wittingly or unwittingly engages, that increases risk for premature death. Indirect self-destructive behaviour is manifested in a variety of forms, such as medication non-compliance, excessive alcohol consumption, and smoking (Masters, 1998). Non-suicidal self-injury (NSSI) differs from indirect self-destructive behaviours (ISDB). NSSI is intentional damage to one's own body tissue, such as cutting, in the absence of suicidal intent (Baetens, Claes, Willem, Muehlenkamp, & Bijttebier, 2011; Claes, Houben, Vandereycken, Bijttebier, & Muehlenkamp, 2010; Glenn & Klonsky, 2009, 2011; Gratz, 2001; Nock, Joiner, Gordon, Lloyd-Richardson, & Prinstein, 2006). Although NSSI and ISDB may occur simultaneously, the mediating factors may differ (St. Germain & Hooley, 2012). For example, when comparing adolescents with ISDB and NSSI, those with NSSI were more self-critical and had higher rates of suicidality (St. Germain & Hooley, 2012). Although the focus of this chapter is on indirect self-destructive behaviours, the overlap with NSSI will be addressed.

Current research indicates that indirect self-destructive behaviours manifest differently in adolescents, adults, and older adults (Baetens et al., 2011; Chan, Draper, & Banerjee, 2007; Conwell, Pearson, & DeRenzo, 1996; Draper, Brodaty, & Low, 2002; Lloyd-Richardson, Perrine, Dierker, & Kelley, 2007; Farberow, 1986; St. Germain & Hooley, 2012). Among adolescents the most common indirect self-destructive behaviours are self-mutilation, alcohol use, drug use (prescription and illicit), cigarettes, binge eating anorexia or bulimia, other purging/compensatory behaviour, and reckless and impulsive behaviour (Maris, 1992). Whereas middle-aged adults are more likely to engage in dangerous sports (e.g. boxing, football), gambling, excessive stress, self-neglect, sexual promiscuity, car accidents, alcohol use, drug use, cigarettes, binge eating anorexia, and/or bulimia (Maris, 1992; Waltzer, 1981). However, this chapter will focus primarily on older adults as they are the subgroup with the highest risk for suicide in the United States and a majority

of the scientific literature on ISDBs is specific to this population (Kochanek & Smith, 2001). Within the gerontological literature, an ISDB is defined as an "act of omission or commission that causes self-harm leading indirectly, over time, to the resident's death" (Cox, 1996). Our review focuses on institutionalized older adults, a group with high rates of physical and cognitive impairment; and of most importance for this chapter, the highest rates of ISDBs (Nelson & Farberow, 1980; Patterson, Abrahams, & Baker, 1974). Older adult are more likely to express indirect self-destructive behaviours by failing to comply with medication, mismanaging their physical health, driving with poor vision, refusing food or water, and abusing alcohol, drugs, or cigarettes (Chan et al., 2007; Conwell et al., 1996; Maris, 1992; Meisekothen, 1993).

Indirect Self-Destructive Behaviours among Adolescence

Adolescence is the time when many young people are beginning to form their perceptions, thoughts, and beliefs about themselves and the world. However, this process may be affected by external events and other risk factors that disrupt this healthy period of formation. The disruption may lead to unhealthy coping practices which include ISDBs that could result in bodily harm (Laye-Gindhu & Schonert-Reichl, 2005; Plener, Libal, Keller, Fegert, & Muehlenkamp, 2009; Fliege, Lee, Grimm, & Klapp, 2009; Glassman, Weierich, Hooley, Deliberto, & Nock, 2007; Santa Mina & Gallop, 1998; Yates, Tracy, & Luthar, 2008). The intersection of ISDBs and NSSI that researchers have identified among adolescents include self-mutilation behaviours such as cutting, hitting, scratching, burning, piercing, tattooing, and biting (Claes, Vandereycken, & Vertommen, 2005; Laye-Gindhu & Schonert-Reichl, 2005; Maris, 1992; Plener et al., 2009).

Given the vast array of behaviours that fall under its umbrella, prevalence rates of ISDBs within this subgroup are difficult to pinpoint. NSSI prevalence rates are somewhat easier to identify, because the behaviours are concretely defined as damage to one's own body tissue, whereas ISDBs are behaviours that may lead to eventual death due to their chronicity. As such the prevalence of NSSI ranges from 14 to 39% among community-dwelling adolescents and 40–61% in inpatient psychiatric settings (Baetens et al., 2011; Esposito-Smythers et al., 2010; Ross & Heath, 2002). In a self-mutilation study of 440 adolescents from different cultural background, 21% reported hurting themselves intentionally, while 41% reported skin cutting; 33% self-hitting; 7% pinching; 5% scratching and biting; and 3% self-burning (Ross & Heath, 2002). International research has found similar results. A study of 1034 community-dwelling German adolescents in high school revealed that 26% reported engaging in NSSI (Plener et al., 2009). Although it appears that there is no significant difference between the U.S. and Germany, there are

differences in prevalence rates and types of ISDBs depending on the sex of the individual. (Baetens et al., 2011; Esposito-Smythers et al., 2010; Laye-Gindhu & Schonert-Reichl, 2005; Plener et al., 2009). Specifically, research indicates that girls are more likely to cut, scratch, or fulfil criteria for an eating disorder (Baetens et al., 2011; Laye-Gindhu & Schonert-Reichl, 2005), whereas boys are more likely to engage in hitting and substance use (Plener et al., 2009).

As stated earlier, IS are not committed with the intention of immediate death and can be slow acting (Farberow, 1986; Masters, 1998). Research suggests that some of these ISDB begin due to childhood trauma such as physical, sexual, and emotional abuse (Fliege et al., 2009). ISDB is engaged in as a means to maladaptively cope with the trauma or stress and essentially moderate different negative emotions that may arise (Fliege et al., 2009; Glassman et al., 2007; Heilbron & Prinstein, 2008; McIntosh & Hubbard, 1988; Nock et al., 2006; Santa Mina & Gallop, 1998; Yates, Tracy, & Luthar, 2008). An association between a history of childhood sexual abuse and ISDB and other self-harming behaviours has been reported (Fliege et al., 2009). Adolescents who experienced childhood sexual abuse report experiencing more negative emotions, depression, anxiety, and anger than their unabused counterparts (Fliege et al., 2009). This study speculated that trauma experienced as a young child leads to the development of psychopathology, such as symptoms of depression, anxiety, and post-traumatic stress disorder (Fliege et al., 2009; Nock et al., 2006; Suyemoto, 1998). Additionally, adolescents who are manifesting specific types of ISDBs, such as consistent alcohol use, self-mutilation, or binge eating are at a high risk for developing severe substance use disorder, borderline personality disorder, or long-term eating disorders (Suyemoto, 1998).

Treatment modalities that may be advantageous for treating adolescents with ISDB are Dialectical Behavioural therapy (DBT) used in conjunction with interventions that increase emotional intelligence (Mikolajczak, Petrides, & Hurry, 2009; Miller & Smith, 2008). The goal of DBT is to enhance client capabilities by increasing emotion self-regulatory capabilities, which can be extrapolated and used in all settings (Linehan, 1993). Other goals of DBT include improving motivation and reducing dysfunctional behaviours and ensuring safety by environmental structuring (Linehan, 1993). Some key techniques taught in DBT include emotion regulation, distress tolerance, mindfulness, and interpersonal effectiveness (Linehan, 1993). DBT has shown to be effective when working with adolescents with self-harm because they may lack some basic coping skills when experiencing distressing emotions (Miller & Smith, 2008). Emotional intelligence interventions were shown to decrease ISDB amongst adolescents by increasing well-being, self-control, emotional regulation and sociability, and decreasing emotionality (Muehlenkamp et al., 2009). Providing adolescents with early treatment will assist them in building foundational coping skills that can be used when distressed. However, if treatment is not offered or used during adolescence, untreated ISDB may worsen or progress into different types of ISDB in adulthood.

Indirect Self-Destructive Behaviours among Young and Middle-Aged Adults

Once ingrained in childhood, self-destructive behaviours often become second-hand nature or automatic. In other words, some ISDB in adulthood are a continuation of behaviours learned from childhood and other ISDB may have an onset later in life (Farberow, 1986). Time of onset can make it difficult for clinicians to disentangle normative behaviours from ISDB because of the chronicity factor (Farberow, 1986). For example, dangerous sports, gambling, excessive stress, self-neglect, sexual promiscuity, car accidents, substance use (alcohol, illicit drugs, prescription drugs, and cigarettes), binge eating, anorexia, and/or bulimia (Maris, 1992; Waltzer, 1981) are ISDBs that are somewhat vague and broad. These behaviours underscore the inherent difficulties in identifying them as ISDB (Maris, 1992). An enjoyment of impulsivity as well as an ambivalence towards and ignorance of the consequences of the ISDB have been cited in the literature as reasons why individuals engage with such activities (Farberow, 1986). However, some ISDB in adulthood are known as "hidden suicides" or "unintentional suicides" due to their covertness (Farberow, 1986; Gerber, Nehemkis, Farberow, & Williams, 1981).

Farberow (1986) suggested that ISDBs are reflective of different personality characteristics or traits in adults. Some of the personality characteristics identified included greater tendency for denial of problematic behaviours, greater present-oriented and not future-oriented perspective, heightened proclivity for impulsivity, higher need for gratification, risk-taking, excitement seeking, poor social adjustment, and low self-esteem. These personality characteristics map onto some ISDB. For instance, substance use is reflective of impulsivity, the need for gratification, and denial. Whereas sexual promiscuity, and eating disorders are reflective of impulsivity, the need for gratification, maladaptive cognitions, and low self-esteem, respectively (MacLaren & Best, 2010). The literature, however, is less clear in regard to the intentionality of individuals who engage in ISDB, with some speculating that these behaviours arise from a place of boredom and curiosity, whilst others believe that these behaviours may be indicative of maladaptive emotional regulation or coping strategies (Farberow, 1986; Muehlenkamp et al., 2009). In a study examining emotional states related to bulimia nervosa, negative affect was shown to increase before an ISDB and to decrease afterwards, suggesting that the ISDB was used as a means to regulate emotions and avoid negative emotional experiences (Muehlenkamp et al., 2009).

Different treatment modalities that have been recommended including psychological interventions such as DBT, and psychotropic medication such as antidepressants, antipsychotics, mood stabilizers, and by natural supplements (Hawton et al., 2015; Linehan, 1993). Hawton et al. (2015) conducted a review of randomized controlled trials examining the efficacy and effectiveness of psychotropic medication treating self-harming behaviours. The researchers discovered little support concerning the efficacy of psychotropics such as antidepressants,

antipsychotics, and mood stabilizers for the purposes to lessen self-harm behaviours (Hawton et al., 2015). There was limited evidence in one study that a low dose of flupenthixol was successful and provided a decrease in self-harm behaviour compared to placebo (Hawton et al., 2015). However, the researchers highlighted that these results were presented in one study and the study has not been replicated (Hawton et al., 2015). Nevertheless, these findings stipulate that psychotropics may not be the first line of treatment for self-harming behaviours and clinicians should be aware of the possible risks when prescribing psychotropics (Hawton et al., 2015).

Regardless of the conceptualization and treatment modalities, some clinicians may need to acquire increased awareness for identifying ISDBs, given that they are death-hastening behaviours that are often under-recognized, underdiagnosed, and undertreated. As adults age, some of these behaviours may naturally dissipate or may lessen with increased insight and emotional regulation. However, oftentimes improvement over the lifespan is not always positive, and ISDBs can actually worsen in older age.

Indirect Self-Destructive Behaviours among Older Adults

Although they make up only 12% of the US population, older adults (aged 65 and older) constitute 18% of all suicides (Alphs et al., 2016). With the ageing population set to double by 2050 (Himes, 2002), suicide among older adults is a pressing global health problem. Moreover, recent research has found that suicide within this population may be under-reported by more than 40%. Deaths resulting from self-starvation, dehydration, "accidents", and overdoses oftentimes do not get reported or recorded as the cause of death, and as such are considered "silent suicides" (Kiriakidis, 2015). Several hypotheses have been proposed as to why under-reporting is so common. First, when an older person dies, coroners and medical examiners may be less inclined to thoroughly investigate the cause of death, adhering to the mentality of "Why stir this up? They were going to die soon anyway" (McIntosh & Hubbard, 1988). However, the cause of death is often more clear amongst certain segments of the population than in others. While community-dwelling older adults generally choose highly lethal means of suicide, more than half of all community-dwelling older adult suicides involve firearms (Alexopoulos et al., 1996) self-starvation is the most frequent method amongst institutionalized older adults (Kennedy, Metz, & Lowinger, 1996). Thus, the second reason for suicide under-reporting is that institutionalized older adults are less likely to have access to more lethal means, such as guns and rope. Subtler methods that just as surely result in premature and preventable death have to be used as a substitute (Cox, 1996; McIntosh & Hubbard, 1988).

Compared to ISDBs associated with younger adults and with adolescents, risk factors, predisposing variables, and precipitating events for suicide amongst older adults are both qualitatively different and less understood (Lester, 1994; McIntosh &

Hubbard, 1988; Osgood & Thielman, 1990). While impulsive and communicative in younger adults ('a cry for help'), suicide attempts amongst older adults are often long-planned, purposeful, and equally lethal. The ratio of attempt to completion for older adults is 4:1 compared to between 8:1 and 20:1 for the younger and middle-aged adult population (Szanto et al., 2002). Given that older adults are more likely to have serious health problems and to live alone, suicidal attempts are more likely to result in fatality as warnings are less likely to be expressed, heard, or acknowledged (Szanto et al., 2002).

More specifically, identification of suicidal behaviour is especially elusive with this age group as intentionality is often difficult to pinpoint and can obscure even the most exhaustive assessment (MacKinnon & Farberow, 1976; Osgood, 1982). As with other age groups, religious beliefs, social mores, or concern for family members, may discourage some older adults from overt suicide, whereas ISDBs may be viewed as more acceptable (Brown, Bongar, & Cleary, 2004). However, in addition to more common ISDBs including overeating and obesity, smoking, and alcoholism, one unique category of ISDB that is particularly salient for the older adult population is the purposeful omission of life and health-sustaining behaviours (McIntosh & Hubbard, 1988). Such behaviour can be broadly couched under three categories: (1) non-compliance with medical treatment; (2) acute self-neglect; and (3) refusal of sustenance, though there is significant overlap amongst them (Conn, Herrmann, Kaye, Rewilak, & Schogt, 2007; Kastenbaum & Mishara, 1971; Patterson et al., 1974).

The first category, non-compliance with medical treatment, includes neglecting or abusing prescription medication; failure to cooperate with nursing staff; paying no heed to medical aid when required; and drinking or smoking when contraindicated. The second category, acute self-neglect includes refusal to leave bed; avoiding or delaying routine medical examinations; and isolating oneself from necessary medical care. The third category, refusal of sustenance includes renouncing food or drink and declining vital medication. In such instances, suicide is rarely deemed the cause of death, though it is clear that such actions are the result of a conscious or unconscious intent to die (Szanto et al., 2002). The following discussion describes the complexity of these issues and the risk factors, predisposing variables, and precipitating events for ISDBs in older adults, as well as offering suggestions for assessment and intervention.

Powerlessness

Given their proximity to the end of life, existential issues of death and dying are ubiquitous for older adults and are inextricably linked to issues of personal autonomy and locus of control. Viewed through this lens, ISDBs in older adults can be seen less as attempts to die and more as attempts to counteract feelings of powerlessness (Kastenbaum & Mishara, 1971; Szanto et al., 2002). The nursing home environment in particular provides an especially apropos environment for

examining ISDB given that for the majority of residents, it the last place they will live before they die. Thus, death is imbued with a more poignant saliency than in any other living environment. Forcibly confronted with this reality on a regular basis and often not of their own volition, taking control over their own deaths may take on more urgent meaning for older adult nursing home residents. Thus, while it is critical to consider the existential undertones of ISDB, it is also important to examine how this loss of autonomy parlays into actual compliance issues and externalizing behaviours.

In a comparative study on treatment compliance versus non-compliance of dialysis patients, feelings of powerlessness were higher in non-compliant patients, they were more likely to be suspicious, and to report feeling devalued, than compliant patients (Gerber et al., 1981). Moreover, within the United States, 93% of nursing home residents have been found to display some sort of behavioural disturbances (Draper et al.,2002). While the bulk of this research has examined aggression, shouting, and wandering, in other words behaviours that affect nursing staff and disrupt other patients, self-destructive behaviours that most greatly impact the resident's own health and quality of life have been largely hitherto ignored (Draper, Brodaty, & Low, 2002). However, it can often be difficult to disentangle whether an older adult is being "uncooperative" for attention's sake or whether their belligerence is actually an attempt to regain some control and offset feelings of helplessness and low self-esteem, rather than a wish to die per se (Nelson & Farberow, 1980; Reiss & Tishler, 2008). As first posited by Seligman, (1975) in his seminal studies on learned helplessness, there are positive psychological benefits of assertive behaviour, including countercontrol, which may, in some instances, offset the negative consequences of self-destructive behaviour. Given the issues of autonomy raised by such instances, it is absolutely critical that if treatment is to be effective, mental health professionals must possess a critical awareness of the often complex rationale behind a patient's non-compliance. Such situations should be approached with a genuine desire to understand the patient's lived experience and to treat them with dignity.

In addition to the complexity raised by the powerlessness often inherent to older adults, the right to die is another important consideration of ISDB within this population, as it raised a number of complicated ethical and moral quandaries in regards to society's acceptability of suicide (Moody, 1985). Suicidal behaviour amongst older adults, some argue, is too often seen through a lens of paternalism; do we have the right to force an individual to take their insulin? (Reiss & Tishler, 2008). Groups in favour of the right to die argue that because we lack the option of euthanasia in our culture, competent older adults should be viewed as rational decision-makers and should be allowed to commit suicide, should they decide (Nelson & Farberow, 1980). Other groups argue that ISDB in this population is especially problematic in that society does not intervene early and often enough, allowing some older adults to waste away, and that respecting their individual rights comes at an excessively high price (Butler, Lewis, & Sunderland, 1982). Although beyond the remit of this chapter, considerations of advanced directives within nursing homes should also be considered as some have argued that their execution

may mask ISDB and may make health care workers less likely to assess for it (Conwell et al., 1996). As such, those working with the older adult population should be especially sensitive to signs of ISDB and should not take any related behaviours lightly.

Risk Factors

In addition to issues of powerlessness a number of risk factors have been identified for ISDB in older adults and should be taken into consideration when assessing. However, as with more general suicide risk, the multidimensionality of ISDB risk should be recognized, as it is unlikely that any single risk factor in isolation would lead to ISDB. Instead, such behaviours are rather the result of a complex interplay of individual characteristics coupled with physical, cultural, familial, social, biological, and socioeconomic factors (Brown et al., 2004). As such factors are continually evolving; assessment of older adults for both ISDB and suicide should be conducted on a regular and ongoing basis, rather than limited to the initial assessment or during periods of crisis.

Physical illness and chronic pain, both of which are germane to the older adult population and often co-occur with ISDB, are risk factors for suicide amongst older adults and have been shown to negatively impact mood (Brown et al., 2004; Cattell & Jolley, 1995). In a large study of 650 older adults hospitalized for physical illness, 21.6% qualified for at least low suicide risk as measured by the Beck Scale for Suicidal Ideation and at least 14.1% had engaged in self-destructive behaviours in the previous month (Ekramzadeh et al., 2012). Given such high rates, further examination of the causes of this comorbidity between physical illness and ISDB as risk may be higher amongst hospitalized older adults, given inherent issues of discomfort, disheartenment, and pain (Draper, 2010). Older adults may develop anticipatory anxiety or harbour fears associated with developing an illness, receiving a terminal prognosis, or of experiencing unbearable or untreated pain, all of which increase suicide risk (Szanto et al., 2002). Conversely, studies have shown that when chronic pain is adequately managed most previously suicidal older adults articulated a desire to live (Szanto et al., 2002). For instance, in one study on older adults who asked for euthanasia, two-thirds reversed their decision when followed up two weeks later (Hendin, 1996). Regrettably, the psychological ramifications of chronic pain and physical illness are not always so straightforward or easily remedied.

Being diagnosed with a physical illness may also cause shifts in an older adult's self-perception. They may feel that life is futile and that they have lost their sense of purpose and usefulness to others. Such feelings may lead some individuals to want to shield their families from being encumbered, both emotionally and financially, with drawn-out physical or mental deterioration and eventual death (Gostin, 1997). These concerns may also be sources of depression for older adults, another risk

factor for ISDB, which is even more important than physical illness at predicting suicide, though they often co-occur (Farberow, 1986).

Discussion of clinical depression or subsyndromal depressive symptoms pervades almost every study on the risk and correlates of suicidal behaviour amongst older adults (Awata et al., 2005; Conwell, Duberstein, & Caine, 2002; Yip et al., 2003). Such prevalence of depression in the research literature mirrors the clinical landscape, as suicide rates of older adult patients with depression are much higher than in the general population (Szanto et al., 2002). Moreover, in a psychiatric autopsy study of completed suicides, depression was found to be the most common psychiatric diagnosis amongst older adults, whereas alcohol dependence was the most common amongst younger adults (Cox, 1996). Hopelessness in particular is associated with self-destructive behaviour and significantly predicts suicidal behaviour in older adults (Beck, Steer, Beck, & Newman, 1993). Thus, it should be evaluated thoroughly, as it may be exacerbated by discussed common issues of powerlessness and futility. However, depression in older adults is often difficult to diagnose given that many older adults present with what has been dubbed, "masked depression", meaning that they often report more somatic complaints and fewer mood-related symptoms such as sadness, than in the general population (Hall, Hall, & Chapman, 2006). This masked depression as well as isolation makes older adults less likely to present for mental health services, leaving ISDB undetected.

Isolation, loneliness, and loss of social support (e.g. bereavement) are widespread amongst older adults and are also risk factors for ISDB and suicide (McIntosh, 1992; Rosowsky, 1993). In fact, over 50% of older adults who attempt suicide are widowed, divorced, or separated (Florio et al., 1997). Living alone has also been found to increase risk for suicide amongst older adults; however, the conclusions that can be drawn from these studies remain controversial. While older studies (Barraclough, 1971; Sainsbury, 1955) found that suicide rates were higher amongst older adults who lived alone than amongst older adults living in community dwellings, more recent work has reported that that there were no differences in the rates of social contact and living arrangements between older and younger adults who committed suicide (Carney, Rich, Burke, & Fowler, 1994). Moreover, an important distinction has been drawn between living alone and being socially isolated as an individual could live with another person, but still be socially isolated (Szanto et al., 2002), such as in the case of an older adult woman serving as caregiver for her husband with advanced dementia. A significant uptick in suicide risk occurs when a spouse dies. The loss of a spouse appears to be most dramatic among elderly Caucasian men, a group with the highest suicide rates in the United States, 84 per 100,0000 (Szanto et al., 2002).

Social isolation can also be exacerbated by comorbid conditions such as substance abuse (Szanto et al., 2002). One study of 85-year-old adults found that those who had abused alcohol when they were 50-year-old were more likely to live alone than those who did not (Murphy, 1992). Older men with alcohol dependence were also more likely to have burned-out previous social supports and alienated themselves from life-sustaining relationships, often a lethal combination (Szanto et al., 2002).

Such statistics highlight that there is also a gender and ethnic component to suicidal behaviour. While the reasons have only been marginally explored, white men aged 85 years and older have the highest suicide rate out of any other segment of the United States population, 65 per 1,00,000, five times the rate of all other age groups (Kastenbaum & Mishara, 1971). Men have also accounted for four out of every five completed suicides amongst those aged 65-years and older (Szanto et al., 2002). As with other age groups, men over 65-year-old are more likely to use firearms and high lethality methods (74% of men vs. 31% of women), whereas older adult women are more likely to overdose on medication (33% of women vs. 3% of men) (Kastenbaum & Mishara, 1971). Suicide rates in older age also break down on ethnic lines. In the United States, suicide rates increase with age amongst White, Filipino, Chinese and Japanese American men, whereas amongst African-American, Native American, Hispanic, and Alaska Native men, the highest rate of suicide is in middle-age (Szanto et al., 2002). Further research is warranted in regard to the cultural and gender components of suicide, but more particularly in regard to how ISDB breaks down along these same lines.

Though often not considered, religion is another cultural component that is particularly important to examine in the older adult population given that religiosity is highest in this segment of the population. Many religions view suicide as a sin, thus potentially serving as a prohibitive factor for ISDB. However, the inverse may also be true. Some older adults may use religious beliefs to justify refusing medication or necessary treatment, instead letting "God's natural course" take effect (Conwell et al., 1996). Further consideration of this cultural subcomponent to ISDB is warranted.

A final issue to be considered is the role of dementia in ISDB. Many of the disturbed behaviours associated with ISDB may overlap significantly with those of dementia (e.g. striking out to circumvent medical care (Reiss & Tishler, 2008). If viewed through this lens, the rates of ISDB in institutional settings may be much higher than currently thought. However, accurate identification of ISDB is especially difficult given high rates of cognitive dysfunction making it especially complex to parse out. For instance, is a person's refusal to eat a result of a conscious wish to die or the result of apraxia and inability to remember how to use eating utensils? Both are common with Alzheimer's disease progression in this population. Given that rates of dementia are increasing exponentially, addressing such issues demands urgent attention.

Conclusion

It is clear from the literature that there are age differences concerning ISDB, including the method used and associated risk factors. Further research on ISDB is warranted. However, there are several barriers to this work. First, the research on ISDB is extremely sparse compared to the research on NSSI. There is a greater push for research to be focused upon NSSI because it was deemed a condition for further

study by the DSM-5 work teams and committees. As such, the majority of burgeoning research in the field of suicidality has been focused on NSSI, with scant attention paid to the relationship between NSSI and ISDB. Lastly, a multitude of the extant research samples consist of Caucasians, virtually neglecting ethnic and racial minorities entirely. Therefore, more attention regarding cultural issues and ISBD should be explored.

In sum, although there is a growing body of literature on ISDB across the lifespan, there is a relative disparity in how this information is translated into practical training for clinicians. Training in assessment and treatment should be provided on ISDBs as they often go undetected and consequently untreated. Moreover, ISDB assessment should be seen as an ongoing process, not limited to the initial interview or to acute periods of crisis. Increasing understanding of ISDBs across the lifespan should be incorporated into clinicians' risk training. Moreover, future research on ISDB may assist clinicians with appropriate screening, integration of assessments, diagnosis, and efficacious treatment. Specifically, a longitudinal study of ISDB beginning in adolescence would be illuminating. In addition to providing clinically relevant information furthering the research of ISDB may assist researchers understanding of factors that increase or decrease ISDB across an individual's life. The emphasis then of ISDB risk assessment should be less on "saving lives" and more on identifying individuals for whom such acts are expressions, less of a desire to die, and more of intolerable suffering.

References

Alexopoulos, G. S., Meyers, B. S., Young, R. C., Kakuma, T., Feder, M., Einhorn, A., & Rosendahl, E. (1996). Recovery in geriatric depression. *Archives of General Psychiatry, 53*(4), 305–312.

Alphs, L., Brashear, H. R., Chappell, P., Conwell, Y., Dubrava, S., Khin, N. A., … Schindler, R. J. (2016). Considerations for the assessment of suicidal ideation and behaviour in older adults with cognitive decline and dementia. *Alzheimer's & Dementia: Translational Research & Clinical Interventions, 2*(1), 48–59.

Awata, S., Seki, T., Koizumi, Y., Sato, S., Hozawa, A., Omori, K., … Matsuoka, H. (2005). Factors associated with suicidal ideation in an elderly urban Japanese population: A community-based, cross-sectional study. *Psychiatry and clinical neurosciences, 59*(3), 327–336.

Baetens, I., Claes, L., Willem, L., Muehlenkamp, J., & Bijttebier, P. (2011). The relationship between non-suicidal self-injury and temperament in male and female adolescents based on child- and parent-report. *Personality and Individual Differences, 50*(4), 527–530.

Barraclough, B. (1971). Suicide in the elderly. *British Journal of Psychiatry, 6*(suppl), 87–97.

Beck, A. T., Steer, R. A., Beck, J. S., & Newman, C. F. (1993). Hopelessness, depression, suicidal ideation, and clinical diagnosis of depression. *Suicide and Life-Threatening Behaviour, 23*(2), 139–145.

Brown, L. M., Bongar, B., & Cleary, K. M. (2004). A profile of psychologists' views of critical risk factors for completed suicide in older adults. *Professional Psychology: Research and Practice, 35*(1), 90–96.

Butler, R., Lewis, M., & Sunderland, T. (1982). *Aging and mental health: Positive psychosocial and biomedical approaches* (3rd ed., p. 269). St. Louis: Mosby.

Carney, S. S., Rich, C. L., Burke, P. A., & Fowler, R. C. (1994). Suicide over 60: The San Diego study. *Journal of the American Geriatics Society, 42*(2), 174–180.

Cattell, H., & Jolley, D. J. (1995). One hundred cases of suicide in elderly people. *The British Journal of Psychiatry, 166*(4), 451–457.

Chan, J., Draper, B., & Banerjee, S. (2007). Deliberate self-harm in older adults: A review of the literature from 1995 to 2004. *International Journal of Geriatric Psychiatry, 22*(8), 720–732.

Claes, L., Houben, A., Vandereycken, W., Bijttebier, P., & Muehlenkamp, J. (2010). Brief report: The association between non-suicidal self-injury, self-concept and acquaintance with self-injurious peers in a sample of adolescents. *Journal of Adolescence, 33*(5), 775–778.

Claes, L., Vandereycken, W., & Vertommen, H. (2005). Self-care versus self-harm: Piercing, tattooing, and self-injuring in eating disorders. *European Eating Disorders Review, 13*(1), 11–18.

Conn, D. K., Herrmann, N., Kaye, A., Rewilak, D., & Schogt, B. (2007). *Practical psychiatry in the long-term care home: A handbook for staff*. Lewiston: Hogrefe Publishing.

Conwell, Y., Duberstein, P. R., & Caine, E. D. (2002). Risk factors for suicide in later life. *Biological Psychiatry, 52*(3), 193–204.

Conwell, Y., Pearson, J., & DeRenzo, E. G. (1996). Indirect self-descrutive behaviour among elderly patients in nursing homes: A research agenda. *The American Journal of Geriatric Psychiatry, 4*(2), 152–163.

Cox, C. (1996). Relationship of age and Axis I diagnoses in victims of completed suicide: A psychological autopsy study. *American Journal of Psychiatry, 153,* 1001–1008.

Draper, B. (2010). Suicidal behaviour. In M. Abou-Saleh, C. Katona, & A. Kumar (Eds.), *Principles and practice of geriatric psychiatry* (3rd ed., pp. 559–564). Chichester: Wiley-Blackwell.

Draper, B., Brodaty, H., & Low, L.-F. (2002). Types of nursing home residents with self-destructive behaviours: Analysis of the harmful behaviour scale. *International Journal of Geriatric Psychiatry, 17*(7), 670–675.

Ekramzadeh, S., Javadpour, A., Draper, B., Mani, A., Withall, A., & Sahraian, A. (2012). Prevalence and correlates of suicidal thought and self-destructive behaviour among an elderly hospital population in Iran. *International Psychogeriatrics, 24*(9), 1402–1408.

Esposito-Smythers, C., Goldstein, T., Birmaher, B., Goldstein, B., Hunt, J., Ryan, N., … Keller, M. (2010). Clinical and psychosocial correlates of non-suicidal self-injury within a sample of children and adolescents with bipolar disorder. *Journal of Affective Disorders, 125*(1–3), 89–97.

Farberow, N. L. (1986). Negative and positive compliance in relation to indirect and direct suicide. *Journal of Compliance in Health Care, 1*(1), 91–101.

Fliege, H., Lee, J.-R., Grimm, A., & Klapp, B. F. (2009). Risk factors and correlates of deliberate self-harm behaviour: A systematic review. *Journal of Psychosomatic Research, 66*(6), 477–493.

Florio, E. R., Hendryx, M. S., Jensen, J. E., Rockwood, T. H., Raschko, R., & Dyck, D. G. (1997). A comparison of suicidal and nonsuicidal elders referred to a community mental health center program. *Suicide and Life-Threatening Behaviour, 27*(2), 182–193.

Gerber, K. E., Nehemkis, A. M., Farberow, N. L., & Williams, J. (1981). Indirect self-destructive behaviour in chronic hemodialysis patients. *Suicide and Life-Threatening Behaviour, 11*(1), 31–42.

Glassman, L. H., Weierich, M. R., Hooley, J. M., Deliberto, T. L., & Nock, M. K. (2007). Child maltreatment, non-suicidal self-injury, and the mediating role of self-criticism. *Behaviour Research and Therapy, 45*(10), 2483–2490.

Glenn, C. R., & Klonsky, E. D. (2009). Social context during non-suicidal self-injury indicates suicide risk. *Personality and Individual Differences, 46*(1), 25–29.

Glenn, C. R., & Klonsky, E. D. (2011). Prospective prediction of nonsuicidal self-injury: A 1-year longitudinal study in young adults. *Behaviour therapy, 42*(4), 751–762.

Gostin, L. O. (1997). Deciding life and death in the courtroom: From Quinlan to Cruzan, Glucksberg, and Vacco—A brief history and analysis of constitutional protection of the 'Right to Die'. *JAMA, 278*(18), 1523–1528.

Gratz, K. L. (2001). Measurement of deliberate self-harm: Preliminary data on the deliberate self-harm inventory. *Journal of Psychopathology and Behavioural Assessment, 23*(4), 253–263.

Hall, R., Hall, R., & Chapman, M. (2006). Effects of terrorist attacks on the elderly-Part II: Posttraumatic stress, acute stress, and affective disorders. *Clinical Geriatrics, 14*(9), 17–24.

Hawton, K., Witt, K. G., Taylor Salisbury, T. L., Arensman, E., Gunnell, D., Hazell, P., … Van Heeringen, K.(2015). Pharmacological interventions for self-harm in adults (Review). *Cochrane Database of Systematic Reviews, 7*. doi:10.1002/14651858.CD011777.

Heilbron, N., & Prinstein, M. J. (2008). Peer influence and adolescent nonsuicidal self-injury: A theoretical review of mechanisms and moderators. *Applied and Preventive Psychology, 12*(4), 169–177.

Hendin, H. (1996). Suicide, assisted suicide, and euthanasia. *Crisis, 17*(2), 90–93.

Himes, C. L. (2002). Elderly Americans. *Population Bulletin, 56*(4), 3–40.

Kastenbaum, R., & Mishara, B. L. (1971). Premature death and self-injurious behaviour in old age. *Geriatrics, 26*(7), 71–81.

Kennedy, G. J., Metz, H., & Lowinger, R. (1996). Epidemiology and inferences regarding the etiology of late-life suicide. In G. J. Kennedy (Ed.), *Suicide and depression in late life: Critical issues in treatment, research and public policy* (pp. 03–22). Oxford, England: Wiley.

Kiriakidis, S. P. (2015). Elderly suicide: Risk factors and preventive strategies. *Annals of Gerontology and Geriatric Research, 2*(2), 1028–1033.

Kochanek, K. D., & Smith, B. L. (2001). Deaths: Preliminary data for 1999. *National Vital Statistics Reports, 49*(3), 1–48.

Laye-Gindhu, A., & Schonert-Reichl, K. A. (2005). Nonsuicidal self-harm among community adolescents: Understanding the 'Whats' and 'Whys' of self-harm. *Journal of Youth and Adolescence, 34*(5), 447–457.

Lester, D. (1994). Are there unique features of suicide in adults of different ages and developmental stages? *OMEGA-Journal of Death and Dying, 29*(4), 337–348.

Linehan, M. M. (1993). *Skills training manual for treating borderline personality disorder*. New York: Guilford Press.

Lloyd-Richardson, E. E., Perrine, N., Dierker, L., & Kelley, M. L. (2007). Characteristics and functions of non-suicidal self-injury in a community sample of adolescents. *Psychological Medicine, 37*(8), 1183–1192.

MacKinnon, D. R., & Farberow, N. L. (1976). An assessment of the utility of suicide prediction. *Suicide and Life-Threatening Behaviour, 6*(2), 86–91.

MacLaren, V. V., & Best, L. A. (2010). Nonsuicidal self-injury, potentially addictive behaviours, and the five factor model in undergraduates. *Personality and Individual Differences, 49*(5), 521–525.

Maris, R. W. (1992). How are suicides different? In R. W. Maris, A. L. Berman, J. T. Maltsberger, & R. I. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 65–87). New York, NY: Guilford Press.

Masters, J. L. (1998). *The prevalence of indirect self-destructive behaviours in older adult females.* (58), ProQuest Information & Learning, US. Retrieved from https://paloaltou.idm.oclc.org/login?url=http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1998-95009-114.

McIntosh, J. L. (1992). Older adults: The next suicide epidemic? *Suicide and Life-Threatening Behaviour, 22*(3), 322–332.

McIntosh, J. L., & Hubbard, R. W. (1988). Indirect self-destructive behaviour among the elderly: A review with case examples. *Journal of Gerontological Social Work, 13*(1–2), 37–48.

Meisekothen, L. M. (1993). Noncompliance in the elderly: A pathway to suicide. *Journal of the American Academy of Nurse Practitioners, 5*(2), 67–72.

Mikolajczak, M., Petrides, K. V., & Hurry, J. (2009). Adolescents choosing self-harm as an emotion regulation strategy: The protective role of trait emotional intelligence. *British Journal of Clinical Psychology, 48*(2), 181–193.

Miller, A. L., & Smith, H. L. (2008). Adolescent non-suicidal self-injurious behaviour: The latest epidemic to assess and treat. *Applied and Preventive Psychology, 12*(4), 178–188.

Moody, H. R. (1985). The ethics of suicide in old age. *Frontiers in Aging Series, 4,* 84–97.

Muehlenkamp, J. J., Engel, S. G., Wadeson, A., Crosby, R. D., Wonderlich, S. A., Simonich, H., & Mitchell, J. E. (2009). Emotional states preceding and following acts of non-suicidal self-injury in bulimia nervosa patients. *Behaviour Research and Therapy, 47*(1), 83–87.

Murphy, G. E., Wetzel, R. D., Robins, E., & McEvoy, L. (1992). Multiple risk factors predict suicide in alcoholism. *Archives of General Psychiatry, 49*(6), 459–463.

Nelson, F. L., & Farberow, N. L. (1980). Indirect self-destructive behaviour in the elderly nursing home patient. *Journal of Gerontology, 35*(6), 949–957.

Nock, M. K., Joiner, T. E., Jr., Gordon, K. H., Lloyd-Richardson, E., & Prinstein, M. J. (2006). Non-suicidal self-injury among adolescents: Diagnostic correlates and relation to suicide attempts. *Psychiatry Research, 144*(1), 65–72.

Osgood, N. J. (1982). Suicide in the elderly: Are we heeding the warnings? *Postgraduate Medicine, 72*(2), 123–130.

Osgood, N. J., & Thielman, S. (1990). Geriatric suicidal behaviour: Assessment and treatment.

Patterson, R. D., Abrahams, R., & Baker, F. (1974). Preventing self-destructive behaviour. *Geriatrics, 29*(11), 115–121.

Plener, P. L., Libal, G., Keller, F., Fegert, J. M., & Muehlenkamp, J. J. (2009). An international comparison of adolescent non-suicidal self-injury (NSSI) and suicide attempts: Germany and the USA. *Psychological Medicine, 39*(9), 1549–1558.

Reiss, N. S., & Tishler, C. L. (2008). Suicidality in nursing home residents: Part I. Prevalence, risk factors, methods, assessment, and management. *Professional Psychology: Research and Practice, 39*(3), 264–270.

Rosowsky, E. (1993). Suicidal behaviour in the nursing home and a postsuicide intervention. *American Journal of Psychotherapy, 47*(1), 127–142.

Ross, S., & Heath, N. (2002). A study of the frequency of self-mutilation in a community sample of adolescents. *Journal of Youth and Adolescence, 31*(1), 67–77.

Sainsbury, P. (1955). *Suicide in London: An ecological study*. Published for the Institute of Psychiatry by Chapman & Hall.

Santa Mina, E. E., & Gallop, R. M. (1998). Childhood sexual and physical abuse and adult self-harm and suicidal behaviour: A literature review. *The Canadian Journal of Psychiatry/La Revue canadienne de psychiatrie, 43*(8), 793–800.

Seligman, M. E. P. (1975). *Helplessness: On depression, development, and death*. New York, NY, US: W H Freeman/Times Books/ Henry Holt & Co.

St. Germain, S. A., & Hooley, J. M. (2012). Direct and indirect forms of non-suicidal self-injury: Evidence for a distinction. *Psychiatry Research, 197*(1–2), 78–84.

Suyemoto, K. L. (1998). The functions of self-mutilation. *Clinical Psychology Review, 18*(5), 531–554.

Szanto, K., Gildengers, A., Mulsant, B. H., Brown, G., Alexopoulos, G. S., & Reynolds, C. F. I. (2002). Identification of suicidal ideation and prevention of suicidal behaviour in the elderly. *Drugs and Aging, 19*(1), 11–24.

Waltzer, H. (1981). The many faces of suicide (book review). *American Journal of Psychotherapy, 35*(2), 293.

Yates, T. M., Tracy, A. J., & Luthar, S. S. (2008). Nonsuicidal self-injury among 'privileged' youths: Longitudinal and cross-sectional approaches to developmental process. *Journal of Consulting and Clinical Psychology, 76*(1), 52–62.

Yip, P. S., Chi, I., Chiu, H., Chi Wai, K., Conwell, Y., & Caine, E. (2003). A prevalence study of suicide ideation among older adults in Hong Kong SAR. *International Journal of Geriatric Psychiatry, 18*(11), 1056–1062.

Chapter 14
Suicidal Behaviour Among Black Males Differ from Recognized Behaviour in Other High Risk Groups: A Review

Donna Holland Barnes and Ingrid Godfrey

The latest report on the number of suicide deaths (2014) from the Centers for Disease Control among the Black population is 2,326 and 7,875 homicide deaths (CDC, 2016).

Behaviour in some individuals that sometimes have an obvious intent to cause his or her death is not considered suicide unless the intent is clear to the medical examiner and the death is self-inflicted (Neitzel & Gill, 2011; Hutson et al., 1998). In high-risk communities that are predominantly Black and present high rates of homicide, suicidal behaviour that perhaps leads up to being killed by someone else is not examined enough by researchers. If Black neighbourhoods continue to show low rates of completed suicides, little effort will be taken to ensure suicide prevention initiatives will take place. Suicide prevention can be all inclusive of any violent behaviour, and can involve collective efforts to reduce the incident of death, especially prematurely such as accidents and homicide along with suicide. Suicide prevention measures include reducing access to firearms, reducing access to toxins, treatment for alcohol and drug abuse, and mental health treatment; it also includes training communities on how to recognize the signs of someone in a suicide/homicidal crisis (National Strategy for Suicide Prevention, 1999; Revised, 2012). Coordinated efforts for suicide prevention from all the institutions within these communities are needed such as schools, churches, and after school programs for youth.

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This review examines the low rates of suicide among Black males even though their behaviour suggests suicide intent, and the lack of suicide prevention initiatives in these communities. The lack of initiatives can be detrimental to this population if efforts towards suicide prevention are absent due to the low rates. Suicide prevention efforts in Black communities need to be as robust as in other high-risk groups, which seem to be lacking as it is not a recognized behaviour (Crosby & Molock, 2006). Many families are more apt to accept a family member being killed by someone else than that member killing themselves (personal observation for the past 23 years). And families can often get in the way of an accurate certification of suicide for many reasons such as religious, personal, cultural, and perhaps loss of insurance benefits (Neitzel & Gill, 2011).

The suicide prevention efforts tend to follow the media…such as military suicides, suicides among the populations of Lesbian, Gay, Bi-sexual, Transgender and those in Question (LGBTQ), and those who were bullied in school. Oftentimes, the suicides among the LGBTQ or victims of bullying are based on anecdotes or surveys. To obtain real rates of suicide, information is sought from death certificates. Do coroners record on the death certificate the sexual orientation of the decedent or that the decedent was bullied? Not usually. And if it is recorded, it would go into the police report presuming the family is aware or wants to divulge the information. Because suicide rates are derived from death certificates, the indication that the suicides are high, for instance in the LGBTQ communities are based on anecdotes and surveillance. The same goes to those suicides in which the parents report that the child was being bullied. In essence, reports were obtained surrounding the death. The military suicides were originally thought of as questionable numbers because it was believed that the suicides were committed by those in combat (Blue Ribbon Work Group, 2008) which basically was not accurate. However, it was discovered that those military deaths reported were based on what the coroners indicated on the death certificate. If the suicide victim had served for only a few months and did not pass basic training or was rejected after basic training—the family still reported to the coroner that the victim was in the military (Blue Ribbon Work Group, 2008). With the high numbers of military suicides being reported—efforts for suicide prevention were focused heavily in the military by the Department of Defense (http://www.defense.gov/News/Article/Article/916477/dod-promotes-suicide-prevention-through-work-with-media-other-groups).

Black communities have very high rates of homicide and drug overdoses and it is speculated that many times those deaths are possibly riddled with intent. It is easy to put oneself in harm's way when wanting to end your life, or overdose on drugs. These types of deaths are recorded as homicides and accidental overdoses, respectively, because perhaps the investigator was not looking for intent. Why would they? What is missing in the suicide prevention network are efforts for suicide prevention in high-risk communities where death is high among young Black men that are not recorded as actual suicides even though the behaviour may clearly signify intent and the death is at the hands of someone else. Prevention experts insist large numbers of lives lost to suicide can be prevented (The World Health Organization, 2014), and if fully implemented can reduce the number of

deaths due to violence as a result—whether it be homicide or suicide since the risk factors are often similar as explained further in this chapter.

Certifying a Death by Suicide

According to the Centers for Disease Controls' Medical Examiners and Coroners' Handbook on Death (2003), suicide results from an injury or poisoning that was intentional and aimed to cause death. That is what a suicide is first and foremost. "It is an act that is generally self-inflicted causing harm or leading to death of the individual" can this be phrased this way for better understanding? Now the keyword here is "self-inflicted". It is an ambiguous term that can also mean inflicted or imposed on oneself, meaning that the harm done was self-imposed or caused by one's actions—such as purposely speeding in one's car and driving into a tree or purposely walking into traffic to get hit by a car…actions that caused one to be killed by something else or someone else. However, the other keyword is "intent" and if intent cannot be determined the above-mentioned scenarios are classified as accidents. And this can be suicidal behaviour at best.

As mentioned, coroners determine suicide using several points of resolution. First, that there is evidence of self-infliction/harm. Second, that there is evidence of intent to end one's life and that it was understood that death would be the outcome of their action.

The second determination—intent—is the one that causes a need to evaluate the deaths in the Black communities. Studies on death by cop examined some of the deaths as suicides in the early 2000s when the police defined victim precipitated homicide as "an incident in which an individual bent on self-destruction, engages in life threatening, and criminal behaviour to force law enforcement officers to kill them" (Neitzel & Gill, 2011; Parent, 2004). In a study conducted by James R. Gill (2009) Chief Medical Examiner for the New York City's Coroner's Office, he found that in some cases, homicide victims intended to use another as their lethal agent and argued that many forensic pathologists are reluctant to certify a death as suicide if they are unclear in any way and there is lack of evidence showing intent. According to Gill and colleagues, intent can be verbal expressions or implicit or indirect evidence of intent to die. This causes concern on not collecting all the information necessary that would capture actual *intent* (Neitzel & Gill, 2011).

Interesting enough, in the Black community, where violence and crime is high, much of the behaviour by young Black men, engage in life-threatening behaviour in an effort to drive someone to kill them (Poussaint & Alexander, 2001), especially when living in these type of neighbourhoods give you little hope for the future (Voisin, Berringer, Takahashi, Burr, & Kuhnen, 2016). With careful investigation, a police officer may find overwhelming evidence that many of the homicide victims *intended* to end their own lives. The use of a different method to kill oneself can unfortunately result in an incorrect certification of homicide. Blacks have a tendency to kill themselves differently by engaging in life-threatening behaviour such as drug and alcohol abuse, gang involvement, and criminal behaviour (Smith & Patton,

2016; Voisin et al., 2016; Theall, Shirtcliff, Dismukes, Wallace, & Drury, 2016). If this was understood by the suicide prevention network—perhaps more suicide prevention efforts could be initiated in Black communities. Is it because there is no media frenzy indicating this life-threatening behaviour of Blacks in these communities that leaves this behaviour being ignored? When this behaviour gets ignored, there is little to no suicide prevention efforts earmarked for these neighbourhoods.

How Can the Certification of a Violent Death Become More Accurate?

Since the act of suicide is considered a violent death by the Centers for Disease Control (CDC), death by suicide can fall under the National Violent Death System (NVDRS) that provides states and communities with funding from the CDC to include an extensive report of a death for the police records. This will enable a state-based reporting system that pools data of a violent death from various sources including the family, for the record file and goes into a usable, anonymous database. The four major sources are:

- Death certificates
- Coroner/medical examiner reports
- Law enforcement reports
- Toxicology reports

According to the CDC, facts that are collected include:

- Circumstances related to suicide such as depression and major life stresses such as relationship or financial problems;
- The relationship between the perpetrator and the victim—for example, if they know each other;
- Other crimes, such as robbery, committed along with homicide;
- Multiple homicides, or homicide followed by suicide.

Figure 14.1 is a map and chart of the states that have paved a way to collecting better data when there is a violent death (Centers for Disease Control, 2016). The data is imperative because we cannot prevent what we do not know. And the more information collected, the more accurate the death certification that leads to better prevention efforts designated accordingly.

States that are funded for NVDRS operate under a cooperative agreement with CDC to whom all violent deaths are voluntarily reported. NVDRS funded six states initially. In 2016, CDC received funding to expand the system to a total of 42 states. The goal is to include eventually all 50 states, all US territories, and the District of Columbia in the system.

Figure 14.2 is the top ten cities with over a 50% Black population. These cities are located in the following 13 states: Alabama, Florida, Georgia, Indiana, Louisiana, Maryland, Michigan, Mississippi, New Jersey, Ohio, Tennessee, Texas,

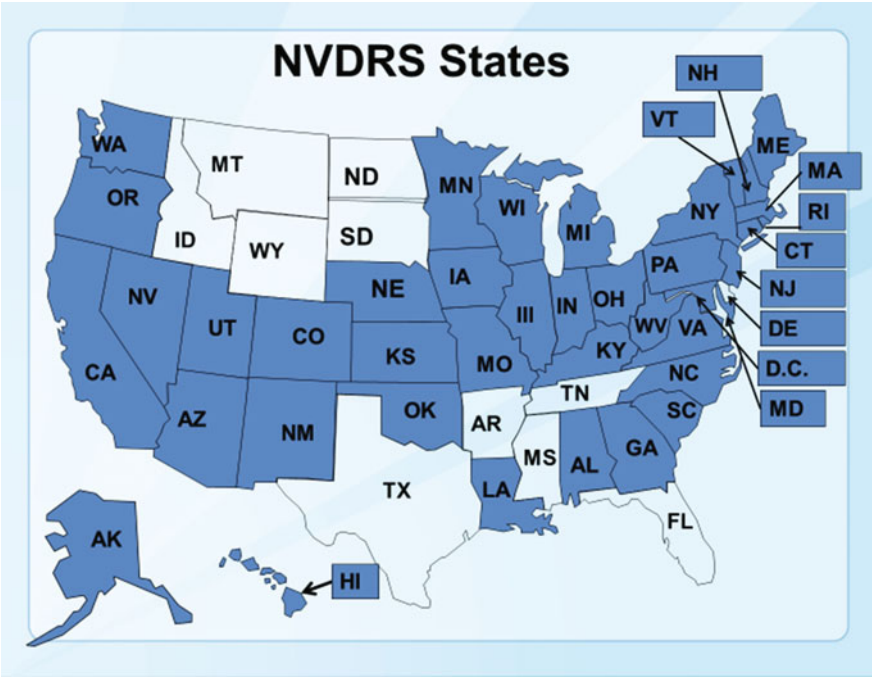

Fig. 14.1 National Violent Death Reporting System (NVDRS) States. *Source* Centers for Disease Control (2016). Retrieved from http://www.cdc.gov/violenceprevention/nvdrs/stateprofiles.html

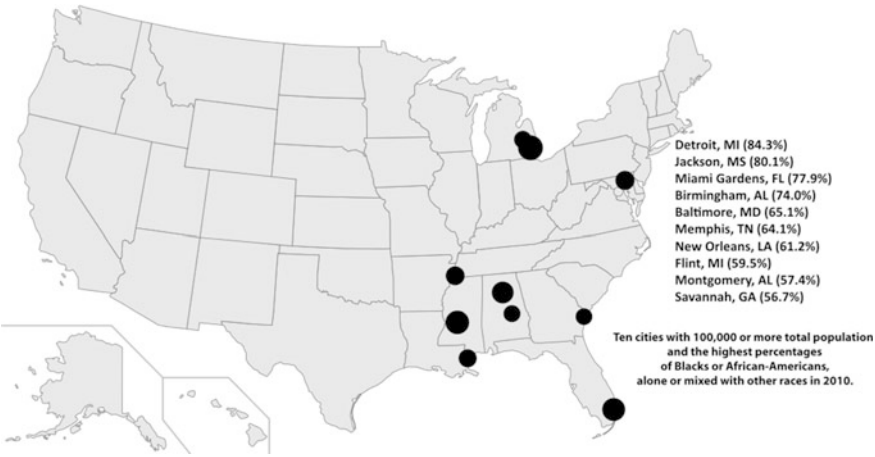

Fig. 14.2 Cities with the highest percentage of Blacks or African Americans in 2010. *Source* https://commons.wikimedia.org/w/index.php?curid=42766134

and Virginia, as well as the District of Columbia. (The Black Population, US Census Bureau, 2010).

With the exception of three states, that have Cities with large Black populations—Jackson, Mississippi; Miami Gardens, Florida; and Memphis, Tennessee—the remaining states that have large Black populations do have the NVDRS arrangement which means violent deaths should have a complete report on what lead up to the death.

That being the case, more research is needed to review reports in major cities that are predominantly Black and examine if there was suicidal behaviour that may have been present before the violent death of a Black person. For instance, according to most criminal law books, homicide is defined as a death resulting from the use of physical force or power, threatened or actual, against another person, group, or community when a preponderance of evidence indicates that the use of force was intentional. Suicide is classified as a death resulting from the use of force against oneself when a preponderance of the evidence indicates that the use of force was intentional (www.cdc.gov/violenceprevention/suicide/definitions.html. Examine the preponderance of evidence that may indicate a homicide victim was using force to be killed.

Within many US Cities with majority Black populations (>50%), homicide rates are considerably higher than suicide rates. Such as Washington, DC, Gary, IN, Baltimore, MD, and Detroit (CDC/NCHS Mortality in the USA, 2014). Whereas these statistics may be interpreted as Blacks being more likely to engage in homicidal behaviour than suicidal, we must be cautious to consider the social and psychological conditions in which these deaths take place.

In an interview with a student whose parent was addicted to crack and neglecting him and his younger siblings caused him to have suicidal ideations at the age of 12, and was quoted as saying the following:

> Instead of committing the act on my own, I'd put myself in situations where someone else would actually do it for me…I would threaten people who were known killers.
>
> – Antoine Quichocho, university student in Washington DC

While being cautious to consider the social and psychological conditions in which homicides in Black communities take place is instrumental in getting to the root of the cause of death…let us hope that we can begin working on better reporting of the deaths in Black communities. The State of Maryland has an extensive reporting system and was one of the first States to apply for the NVDRS program back in 2002. Because the State of Maryland had this program, it was easy to get access to the reports of violent deaths in 2006. And in reviewing 45 completed suicides from 2003 to 2006 of Black males under the age of 25—the three main indicators for the death were relationship discord, lack of employment, and depression (Barnes, 2011). Are many homicide victims experiencing the same risk factors within their community?

In the longitudinal Pittsburgh Youth Study, researchers found that school-aged victims of homicide were involved in bad family relationships, suspended from school with low school motivation, and often truant (Loeber & Ahonen, 2013). There were high levels of gang activity, settling of scores, and taking revenge

(p. 1648). Does this type of behaviour leave much sense of hope in these individuals? The similarity of suicide risk factors and risk factors of homicide victims is that there is no clear future ahead, relationship discord, and lack of achievement. It gives a message that if you want to be killed—engage in criminal activity.

In 2013, a report using data from the National Violent Death Reporting System (NVDRS) involving 19,251 deaths in 17 states found that 66.2% of deaths were suicides, followed by homicides (23.2%). Homicide rates were highest among non-Hispanic Black males "*and precipitated by arguments and interpersonal conflicts, occurrence in conjunction with another crime, or were related to intimate partner violence. A known relationship between a homicide victim and a suspected perpetrator was most likely either that of an acquaintance or friend or an intimate partner*" (Lyons, Fowler, Jack, Betz, & Blair, 2016). Legal intervention death rates were highest among non-Hispanic Black males hence many of the police shootings in the past few years among Black males in the USA. Precipitating causes for the majority of the police shootings were another crime, a mental health problem, or a recent crisis (p. 1). Many of the recent police shootings involved, if not one, at least all of the above-mentioned factors.

And finally, coroners are generally not going to certify a death by suicide unless they are certain it was a suicide—such as jumping off a roof, hanging, leaving a note, or gun powder found on the hands of the victim indicating that the gunshot wound was self-inflicted. Therefore, absence of any of these methods leavesand high-level membership is the backbone doubt and consequently the death is certified as an accident or homicide. As mentioned, homicides in Black communities need to be studied and examined as many of them can be related to suicidal behaviour at best.

Communities That Have Explicit Suicide Prevention Efforts with Little Coaxing Other Than the Media Frenzy

Lesbian, gay, bi-sexual, transgender, and those in question (LGBTQ). It is next to impossible to identify the total completed suicides in this population considering self-disclosure of sexual orientation would need to be apparent. This is not always the case even once self-disclosed, because the family may not divulge this personal information to the coroner. However, this population can sometimes have increased rates of mental disorders coupled with suicidal thoughts and behaviour (Crain-Gully, 2010)

The Centers for Disease Control recently published an article under Gay and Bi-Sexual Men's Health indicating that gay and bi-sexual men are at greater risk for suicide attempts as well as lesbians. Studies from surveillance survey data among this population show that some risk factors are linked to their sexual orientation that could lead to suicidal ideation and behaviour (CDC, 2016). More importantly, one study established a correlation between having a supportive environment compared to a non-supportive environment increased suicidal ideations among young lesbian,

gay, and bi-sexual youth suggesting more interventions for suicide prevention need to be implemented within this population (Hatzenbuehler, 2011; Marshall, 2016; Haas et al., 2011).

While there may not be too many non-profit organizations whose main objective is to increase suicide prevention efforts among the LGBTQ communities, this community is being recognized or earmarked by suicide prevention experts and/or suicidologist just as suicide prevention efforts in the military have become aggressive. Government agencies that specialize in suicide prevention have forcefully targeted the LGBTQ communities to insure better efforts, namely the Substance Abuse and Mental Health Service Association (SAMHSA) and Centers for Disease Control (CDC). The National Alliance for Suicide Prevention included in their 2012 annual report:

> A diverse and high-level membership is the backbone of the Action Alliance…. organizations serving high-risk populations, such as LGBT (lesbian, gay, bisexual, and transgender) populations, veterans, and American Indian/Alaska Native populations.

No mention of Black communities—why?—because the suicide rates are low. In the past several years, emphasis has been on focusing on suicide prevention for the military and the LGBTQ communities. However, suicidal behaviour among Black communities has been discounted mainly because suicidal behaviour is presented differently and Blacks may not be surveyed enough to self-disclose ideations and attempts. Much of the researches on suicidal behaviour among the LGBTQ populations are based on attempts and reports of having thoughts of suicide. Instead of taking high homicide rates in Black communities for granted—there needs to be more attention on surveillance of these young Black males who are dying in record numbers at the hands of someone else.

Suicide and the military/suicide prevention. According to the United States Department of Defense (2015), suicide has increased among all branches of the military in the last decade, and the Armed Forces have experienced the most significant boost. In the Army, for instance, the completed suicides were over 250 a year from 2008 to 2015 (AFMES, 2015). Once the media started reporting this information, suicide prevention efforts began to increase. Suicidal behaviour and completed suicides in the military were an issue several decades ago—sometimes being the second or third leading cause of death (Russell, Conroy & Werner, 1971; Helmkamp, 1995). But once it started being reported in the news in the mid-2000s—suicide prevention training to staff and enlistees in the military became mandatory and a blue ribbon workgroup was formed (Blue Ribbon Report, 2008). The Blue Ribbon workgroup referred to a study that indicated veterans were twice as likely to complete suicide than non-veterans (Kaplan, Huguet, McFarland, & Newsom, 2007). Everything started happening so fast that the military could not keep up with the efforts being enforced on them to set up suicide prevention initiatives. In Blue Ribbon report, it was indicated that the military staff who were care providers did not feel qualified to conduct suicide assessments. The workgroup upon these findings made several recommendations such as more education and trainings of staff and enlistees on recognizing signs of someone in a suicidal crisis and how to

appropriately manage a suicide crisis. Training in the military was imperative and highly recommended by the workgroup. Since the media frenzy on suicide in the military—many studies began taking place on suicidal behaviour and attempts for the need to identify risk factors and recognize behaviours. And as mentioned, suicide prevention efforts became mandatory.

Does it take a media frenzy to draw attention to the needs of certain populations that are dying in record numbers for sustainable suicide prevention efforts to take place?

When You Engage in Behaviour in Which You Want Death to Be the Outcome—Is That Not a Suicide!

Suicide/homicide—(revisiting victim participation). Several researchers back in the early 1990s examined homicides as possible suicides. In a study examining California death certificates from 1966 to 1990, misclassification of apparent suicides was evident among Blacks more than any other group in the study (Phillips & Ruth, 1993). Where suicide is the act of intentionally causing one's own death, suicidal behaviour can sometimes carry the same definition—an intentional behaviour hoping death will be the end result such as putting oneself into harm's way to be killed as suicide by cop or homicide. According to the definition of suicidal behaviour—it does not always mean that death is intended. In fact, the DSM-5 indicates that there are two types of self-directed violence: (1) non-suicidal and (2) suicidal. Non-suicidal self-directed violence is behaviour that is self-directed and deliberately results in injury or the potential for injury to oneself but there is no evidence of suicidal intent, as mentioned previously. Examples would be cutting or a passive dose of over-the-counter pills. Suicidal self-directed violence has the same definition but there is evidence of intent.

Wolfgang introduced the concept of victim participation in 1959, arguing that in some instances homicide victims wanted to die in which the decedent provokes the behaviour of another to kill them (Wolfgang, 1959). In his research, Wolfgang collected death certificates of 588 homicides within a 4-year period in Philadelphia and found appropriately 26% (150 homicides) fit the definition of victim precipitation. Unfortunately, Black males in highly concentrated urban cities, where crime, unemployment, and untreated mental illness leave them at a disadvantage, are at risk for exposure to violence and trauma (Voisin et al., 2016; Smith & Patton, 2016). These conditions can leave little room for hope for the future.

A study conducted in Baltimore, Maryland found homicide rates among Black males relatively high and that more than 70% of the 37 young Black males interviewed, experienced two or more mental disorders as defined by the DSM-5; mainly Posttraumatic Stress Disorder because of the constant exposure to violence within their community. However, their findings identified more traumatic stress

that was constant rather than traumatic stress that was after the fact in which no "post" really existed (Smith & Patton, 2016).

If Black males are living under these conditions, there is a good chance that they are experiencing risk factors for suicide such as despair, despondency, anguish, unemployment leaving no hope for the future. Hopelessness is the main risk factor that is present in many young Black males.

Conclusion

If suicidal behaviours in Black communities are presented differently, it is important that institutions in these communities pay close attention to these behaviours and take some time out to get properly trained on how to recognize these behaviours as suicidal. It takes one question—do you want to die? Or where do you see yourself in 5 years, 2 years, in 6 months? This last question establishes if there is any hope. And if there is…there is a chance of saving members of this population especially our youth to keep them from putting themselves in harm's way and being killed.

Most people do not want to die, they just want to put a stop to the suffering and think death is an option to do just that. If intent is there, perhaps the minds of these individuals can be redirected if a glimmer of hope can be established. All they need is to have a belief system that can lift their self-esteem and give them a possible future in which to look forward.

There are plenty of institutions within these communities who could take the lead in championing training and education. It should be mandatory for faculty and staff in the schools, it should be mandatory before becoming a pastor in a church in which training should be completed once a year (as a refresher and updates), and any other institutional program in Black communities that serve these neighbourhoods.

And finally, if the NVDRS data from those States that have predominantly Black cities are reviewed and analyzed, we may find the homicide victims are highly troubled youth. These communities need help in suicide prevention, through training and education. If that happens perhaps the homicide rate will decrease along with some of these rampant police shootings.

According to the studies using data from the NVDRS:

> Utah Violent Death Reporting System (VDRS) data were used to develop policies that support children of intimate partner homicide victims, Colorado VDRS data to develop a web-based suicide prevention program targeting middle-aged men, and Rhode Island VDRS data to help guide suicide prevention efforts at workplaces. The continued development and expansion of NVDRS to include all U.S. states, territories, and the District of Columbia are essential to public health efforts to reduce the impact of violence. (CDC.gov/nvdrs, 2016)

As public health strategy, developing a Web-based suicide prevention program targeting Black males under the age of 45 would be a start because consequently, the Black population is not as protected from suicide as one would think. It is not

advisable to use official suicide data to test scientific hypotheses about suicide especially in the Black community—unless the effects of misclassification are estimated and, if necessary, corrected.

References

Armed Forces Medical Examiner System (AFMES). (2015). Mortality surveillance. *Weekly Suicide Update for Deaths thru 10/25/2015.*

Barnes, D. H. (2011). *Examining the suicides of 45 Black males under the age of 25 in the State of Maryland*. Unpublished manuscript.

Centers for Disease Control. (2003). *Medical examiners and coroners handbook on death registration and fatal death reporting*. Retrieved from http://www.cdc.gov/nchs/data/misc/hb_me.pdf.

Centers for Disease Control and Prevention, CDC. (2016). *Gay and Bisexual Men's Health: Suicide and Violence Prevention.* Retrieved from http://www.cdc.gov/msmhealth/suicide-violence-prevention.htm.

Centers for Disease Control/National Center of Health Statistics. (2014). Mortality in the United States. *National Vital Statistics Reports, 65, (*4).

Crain-Gully, D. I., Sr. (2010). Psychache and coming out lesbian, gay, bisexual, transgender, and questioning (LGBTQ) adults at risk of suicidal ideation and suicide attempts: A mixed-methods design (Order No. 3412236). Retrieved from http://pitt.idm.oclc.org/login?url=http://search.proquest.com/docview/737503190?accountid=14709.

Crosby, A. E., & Molock, S. D. (2006). Introduction: suicidal behaviours in the African American community. *Journal of Black Psychology, 32*(3), 253–261.

Haas, A. P., Eliason, M., Mays, V. M., Mathy, R. M., Cochran, S. D., D'Augelli, A. R., … Clayton, P. J. (2011). Suicide and suicide risk in lesbian, gay, bisexual, and transgender populations: review and recommendations. *Journal of Homosexuality*, *58*(1), 10–51.

Hatzenbuehler, M. L. (2011). The social environment and suicide attempts in lesbian, gay, and bisexual youth. *Pediatrics, 127*(5), 896–903.

Helmkamp, J. C. (1995). Suicides in the military: 1980–1992. *Military Medicine, 160*(2), 45–50.

Hutson, H. R., Anglin, D., Yarbrough, J., Hardaway, K., Russell, M., Strote, J., … Blum, B. (1998). Suicide by Cop. *Annals of Emergency Medicine, 32*(6), 665–669.

Kaplan, M., Huguet, N., McFarland, B., & Newsom, J. (2007). Suicide among male veterans: A prospective study. *Journal of Epidemiology and Community Health, 61*(7), 619–624.

Karch, D. L., Logan, J., Patel, N., & Centers for Disease Control and Prevention (CDC). (2011). Surveillance for violent deaths—National violent death reporting system, 16 states, 2008. *MMWR Surveillance Summaries*, *60*(10), 1–49.

Loeber, R., & Ahonen, L. (2013). Invited address: Street killings: Prediction of homicide offenders and their victims. *Journal of Youth and Adolescence, 42*(11), 1640–1650.

Lyons, B. H., Fowler, K. A., Jack, S., Betz, C., & Blair, J. (2016). Surveillance for violent deaths—National violent death reporting system, 17 states, 2013. *MMWR Surveillance Summaries, 65*(10), 1–42.

Marshall, A. (2016). Suicide prevention interventions for sexual and gender minority youth: An unmet need. *The Yale Journal of Biology and Medicine, 89*(2), 205–213.

National Strategy for Suicide Prevention. (1999). *A report of the US surgeon general: Goals and objectives for action*. Washington, DC.

National Strategy for Suicide Prevention. (2012). *A report of the US surgeon general and the national alliance for suicide prevention: Goals and objectives for action*. Washington, DC.

National Violence Reporting System. (2013). *Stories from the frontlines of violent deaths surveillance*. Retrieved from http://c.ymcdn.com/sites/www.safestates.org/resource/resmgr/NVDRS/NVDRS_Stories_2015.pdf.

Neitzel, A. R., & Gill, J. R. (2011). Death certification of "suicide by cop". *Journal of Forensic Sciences, 56*(6), 1657–1660.

Parent, R. (2004). *Aspects of police use of deadly force in North America—the phenomenon of victim-precipitated homicide, (unpublished doctoral dissertation)*. Canada: Simon Fraser University.

Peake, J. D. (2008). *Blue ribbon work group on suicide prevention in the veteran population*. Retrieved from http://www.mentalhealth.va.gov/suicide_prevention/Blue_Ribbon_Report-FINAL_June-30–08.pdf.

Phillips, D. P., & Ruth, T. E. (1993). Adequacy of official suicide statistics for scientific research and public policy. *Suicide and Life-Threatening Behaviour, 23*(4), 307–319.

Poussaint, A., & Alexander, A. (2001). *Lay my burden down*. Boston: Beacon Press.

Russell, H. E., Conroy, R. W., & Werner, J. J. (1971). A study of suicidal behaviour in the military setting. *Military Medicine, 136*(6), 549–552.

Smith, J. R., & Patton, D. U. (2016). Posttraumatic stress symptoms in context: Examining trauma responses to violent exposures and homicide death among Black males in urban neighborhoods. *American Journal of Orthopsychiatry, 86*(2), 212–223.

Theall, K. P., Shirtcliff, E. A., Dismukes, A. R., Wallace, M., & Drury, S. S. (2016). Association between neighborhood violence and biological stress in children. *Journal of American Medical Association Pediatrics*. Advance online publication. doi:10.1001/jamapediatrics.2016.2321.

United States Department of Defense. (2015). Defense Suicide Prevention Office, dspo.mil.

US Department of Commerce Economics and Statistics Administration US CENSUS BUREAU (2010). List of US metropolitan areas with large African-American populations.

Voisin, D., Berringer, K., Takahashi, L., Burr, S., & Kuhnen, J. (2016). No safe havens: Protective parenting strategies for African American youth living in violent communities. *Violence and Victims, 31*(3), 523–536.

Wolfgang, M. E. (1959). Suicide by means of victim-precipitated homicide. *Journal of Clinical and Experimental Psychopathology, 20,* 335–349.

World Health Organization. (2014). *Preventing suicide: A global imperative*. Geneva: World Health Organization.

Chapter 15
Suicidal Ideation in Adolescents—A Transcultural Analysis

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Suicide has long been a serious public health problem throughout the world and is, thus, recognized in the modern society as a public health priority. Even though many countries report a downward trend in the suicide rate between 1981 and 2000, there has been a steady increase since then. What is more, in the past 45 years global suicide rates have increased by 60%. Research proves that suicide attempts have steadily been found to be more common in younger age groups, peaking in adolescence (Brådvik & Berglund, 2009). While suicide is ranked as 10th leading cause of death in general, it is stated as the third leading death for children (aged 10–14) and the second leading cause of death among adolescents (aged 12–18) and young adults (aged 19–24) throughout the world, regardless of country income or cultural level (Centre for Disease Control and Prevention (CDC), 2013; 2014). Word Health Organization (WHO), 2010, 2013, 2014).

Investigators around the globe are paying attention not only to growing suicide rates, but also to the alarming 'rejuvenation' of suicide. Several decades ago suicide rates were not even considered for adolescents aged 14–15, while nowadays we are forced to face data for 10-year-old and younger, even though these rates are low and unstable (McKeown, Cuffe, & Schulz, 2006). Adolescence is stated as a time of onset of suicidal ideation in all countries that collect data on suicidal activity. Our recent analysis has confirmed that suicides in adolescents are a growing problem worldwide, and that most serious rise is registered in developing countries or in the

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countries in transition, and in indigenous people in economically developed countries like USA, Canada, Australia, New Zealand, Sweden and others. Among the reasons, the pressure of the western culture may be named, which provokes consumerism, individualism, competitiveness, hedonism, evolution of values and growing problems of mental health in children and adolescents. It is associated with enhanced psychosocial stress, which is dependent on inequalities, loneliness, family crisis and lack of social support. Globalization and universal development of information technologies make these influences even stronger by involving bigger contingents (Rozanov, 2014).

From the perspective of suicidal process (Zubin, 1974) and stress vulnerability model (Wasserman, 2001), as well as from simple logical observations, it is reasonable to consider that suicidal attempts are preceded by suicidal thoughts, while completed suicides are preceded by suicide attempts. Suicide is often a planned act, and every planning is consequential to thinking of death, dying and suicide. It may not be always a case; some suicides are really impulsive, but still there is a general perception that suicidal ideation, like vague wishes of death and more definite thoughts about dying by suicide, is followed by more definite planning how to do it, after which comes suicidal act, which may be fatal or non-fatal (Bertolote, Fleischman, De Leo, & Wasserman, 2009). On the other hand suicidal ideation may appear in any person during the life cycle and may not be followed by any suicidal actions.

It is generally understood that such thoughts are more prevalent in the older age when life perspectives are not so bright (Harwood & Jacoby, 2000). It is therefore so important to know more at what age such thoughts emerge; and what are the main risk factors for such thoughts among children and young people. It is also interesting to evaluate the role of cultural factors in suicidal ideation development, variability and level of severity. Existing studies when suicidal behaviour (ideation, attempts and completed suicides) was evaluated within general population surveys in multiple geographic and cultural sites suggest two major conclusions: (1) there is no detectable correlation between suicide rates and suicidal ideation, and (2) there is a strong cultural underpinning behind the whole spectrum of suicidal behaviours (Bertolote et al., 2009). These considerations served as the background for our review.

Suicide Activity—From Ideas to Action

Suicidal behaviour involves intent to end one's life and encompasses an ambit of actions that range from thoughts (fleeting suicidal thoughts, passive suicidal ideation, active suicidal ideation, suicide planning) to actions (non-fatal self-injury, suicide attempts, completed suicide). Suicidal thoughts, known also as suicidal ideation (SI), are basically thoughts about how to kill oneself. Both suicidal ideation and suicide attempts (SA) are strong risk factors for completed suicide. Unlike suicide attempts, suicidal ideation is much more prevalent in the community than

we prefer to think—11–14% for SI and 2.8–4.6% for SA in Western cultures, and 12–17% for SI and 2.5–4.8% for SA in Asian cultures) (Juan, Xiao-Juan, Jia-Ji, Xin-Wang, & Liang, 2010; Sareen, 2005). The pooled lifetime prevalence of SI in general populations in Asian countries is reported to range from 2.3 to 23.6% and in Western countries—from 3.0 to 15.9%. The pooled prevalence of SA in Asian countries fluctuated between 0.4 and 4.2%, compared to 0.5–5% in Western countries (Cao et al., 2015).

Suicidal ideation intensity in adolescents can vary from thoughts and fantasies about dying or being dead to actively killing oneself. Some believe that passive suicidal ideation—imagining yourself lying dead, falling asleep without waking up, dying in a car accident—is not dangerous, while active suicidal ideation—fantasizing about different ways of committing suicide—is. Nevertheless, there is a lot of data that refuse such approach and prove that adolescents' suicidal ideation is rather unpredictable and can change promptly from passive to active within a certain time period, even though passive suicidal ideation presumably allows some time for prevention and intervention. For example, Simon and his colleagues found out that when a patient reports passive suicidal ideation, active suicidal ideation can be drawn forward in most cases (Simon, 2014).

Suicidal ideation and thoughts of death are often experienced as fluctuating, so some researchers point out that a dynamic representation of SI is compulsory (Selby, Yen, & Spirito, 2013). In the Developmental Pathways Project (Vander-Stoep, McCauley, Flynn, & Stone, 2009) ran a 24-month study of 2978 adolescents suicidal ideation.[1] They found that at a given assessment between 15 and 25% of adolescents confirmed one or more ideation items. However, the rates grew dramatically when time span was considered—over the course of 18 months, 60% of adolescents admitted at least one of the five ideation items at one or more assessments. The most prevalent item (prevalence of 9–14%) was "thoughts about death and dying", while "thoughts of killing myself" was the least frequent (reported by <1–3% of the sample). At the same time around 6% of the group reported thoughts of killing themselves at least one time over the 18-month period (Vander-Stoep et al., 2009).

Evidences in respect to the predictors of suicidal ideation are uncertain and most associations only have been identified in cross-sectional studies (Tu et al., 2012). Most researchers agree that onset of suicidal ideation is the earliest stage in developing path to completed suicide. Moreover, the presence of suicidal ideation correlates with more severe functional impairment, comorbidity and depression severity (McCarty et al., 2011). However, even though suicidal ideation is recognized as primary stage in suicidal activity, its transient nature makes it an unreliable suicide predictor for great many researchers.

[1]The suicidal ideation composite included responses to the following items: "I thought there was nothing good for me in the future"; "I thought life wasn't worth living"; "I thought about death and dying"; "I thought my family was better off without me"; and "I thought about killing myself".

Investigators suggest that it takes around a year for suicidal thoughts to progress to either plans or attempts (Kessler, 2012). However, Deisenhammer et al. (2009) interviewed teenagers admitted to hospital after a suicide attempt and found that the duration of suicidal process in adolescents can be extremely short. They recount that 47.6% of the adolescents reported the period between the first current thought of suicide and the actual attempt had lasted 10 min or less. If the process took longer, the patients scored higher on suicidal intent ($p < 0.001$). Though most of the teens were alone at the time of the attempt, they communicated their readiness for interpersonal contact with partner, family or friends (Deisenhammer et al., 2009). This knowledge is crucial to development of effective suicide prevention programmes for adolescents.

Children and young adolescents (aged 10 and younger) rarely report having suicidal thoughts, plans or attempts. That does not mean children of this age are protected against suicide but rather they experience different impetus. However, further maturation steers escalation of suicidal ideation between 10 and 12 years and especially after 12 (Kessler, 2012). As for suicide attempts among adolescents, the growth is also observed after the age of 12 (Kessler, 2012).

Adolescent suicide is not always carefully planned. Impulsive suicide attempts reach up to 40% of all adolescent suicide attempts, but there is no comprehensive data on progression of suicide activity urged impulsively. Environmental influences on suicidal behaviour are most pronounced early in the suicidal process which, after it has progressed, becomes more autonomous and intricately linked with mental illness and depression in particular. Males progress through the suicidal process faster than females (Neeleman, de Graaf, & Vollebergh, 2004).

The common opinion that completed suicide is a problem while suicidal ideation is not, actually jeopardizes the overall goal of suicide prevention in adolescents. Psychological autopsy studies have demonstrated that the majority of suicides occur on the individual's first suicide attempt (Sareen et al., 2005). McCarty et al. (2011) research of 13–19 year olds reflected that youth with SI had a significantly higher mean functional impairment compared with youth without SI, both at baseline (84% vs. 60% "definitely impaired") and 6-month follow-up (57% vs. 39% "definitely impaired"). Still, for every completed suicide there are 20–25 suicide attempts and even more self-inflicted injuries. This ratio does not change considerably from country to country or culture to culture.

Across the globe, adolescents of ethnic minority report higher rates of SI and, as we have mentioned before, have higher suicide rates. In de Luca and Wyman's study (2012) among 14 high schools in USA and 8 "Latino-representative" high schools, across all 14 high schools, 17% (110/663) of Latino students reported suicidal ideation in the past year, compared to 13% (359/2740) of non-Hispanic White students and 11% (78/719) of African American students. Souza estimated the prevalence of SI among Brazilian teenagers in cross-sectional population-based study at 14.1% (Souza et al., 2010). In Chile, 62% of 1567 adolescents sample recognized suicidal ideation and 19% admitted suicidal attempts. These figures

were significantly higher among women and those attending public schools. Sixteen-year-old adolescents had the highest rates of SI and SA (Ventura-Juncá et al., 2010). In a study in Taiwan SI was significantly higher among the Indians and Chinese (Ahmad, Cheong, Ibrahim, & Rosman, 2014).

It has been established by early studies in suicidology that 50–69% of those who died by suicide reported having had SI and communicated suicidal intent to others in this or another way prior to actual suicide committing (Coombs et al., 1992; Robins, Gassner, Kayes, Wilkinson, & Murphy, 1959). In the clinical settings depressed suicide attempters reported SI in 20% of cases prior to attempts, the highest risk for transitioning from ideation to attempt was 5 months post-discharge while the absence of prior suicide attempt did not eliminate the risk of future attempt (Chan, Shamsul, & Maniam, 2014). Studies from different cultures also showed that one-third of suicidal ideators would become suicide attempters, and over 60% of these attempts would happen within the first year after starting experiencing suicidal ideas (O'Connor & Knock, 2014).

However, another research revealed that 78% of people who die by suicide might specifically deny suicidal thoughts in their last communications right before committing suicide (Busch, Fawcett, & Jacobs, 2003). This is usually explained by suicide attempters' desire to avoid unwanted interventions like involuntary hospitalization (Nock et al., 2008). On the contrary, according to Christian Nordqvist, at least one-fifth of people who completed suicide had been discussing their intention right before the attempt (Nordqvist, 2014).

Results of the research by Selby et al. (2013) suggest that affective sensitivity, behavioural dysregulation and peer invalidation are highly associated with suicidal ideation levels both chronically (over months) and acutely (one week to the next), whereas depression, negative affect intensity and family invalidation were more acutely predictive of suicidal ideation. What is more, elevated suicidal ideation may then aggravate all these factors in a reciprocal manner. Most researchers would agree that it is more reliable to predict short-term risk of a suicide attempt diagnosing acute suicide risk than to oversee long-term suicide risk (Gliatto & Rai, 1999).

Adolescence is a critical period of onset for suicidal ideation. Practitioners should recognize the increased risk when teenagers express SI, either in its passive form, or in an active one, not to overlook it, especially in cases when a mental illness is presumed. Only a minority of adolescents with SI receive mental health services, and clinical detection is low (McCarty et al., 2011). Very often clinical prediction of suicide relies on self-reported questionnaires, which can be manipulated this way or the other (Nock & Banaji, 2007). It must be also taken into consideration that questioning about suicidal thoughts in clinical settings may give quite different results as compared with general population surveys. Differences may be related to such factors, as confidence of the responder to the interviewer and fixed versus non-fixed time frame of SI detection (Bertolote et al., 2009).

Suicide Activity Theories and Suicidal Ideation

There is no one single theory of suicide and suicidal ideation that would comprise all the known generalities of why suicides happen. Even the causes of suicidal activity are not fully comprehended till now (O'Connor & Knock, 2014). O'Connor and Knock (2014) suggest most modern theories are 'diathesis stress in origin and cognitive in focus', while earlier elaborated theories emphasized predominantly individual psychological factors. Indeed, after 1970s the focal point of explanation why people die from suicide moved to either some cognitive judgment deficits (Baumsteiner, 1986; Rudd, Joiner, & Rajab, 2001; Schotte & Clum, 1987; Williams & Pollock, 2000) or vulnerability caused by prolonged stress (Mann, Waternaux, Haas, & Malone, 1999; Shneidman, 1985; Wenzel & Beck, 2008). Theoretical accounts have suggested that affective, behavioural and interpersonal factors may influence the experience of thoughts of death and suicidal ideation (Selby et al., 2013).

One of the integrative approaches that put together vague death wishes, more definite suicidal thoughts, attempts and completed suicide within the context of risk and protective factors interaction and based predominantly on the idea of stress–vulnerability is the concept of Wasserman (Wasserman, 2001; 2016; Wasserman & Sokolowski, 2016). Within this concept stress–vulnerability, which is understood primarily as genetic predisposition, may be enhanced due to early life stress. Such enhancement, according to recent data, may be related to epigenetic transformations that change the reactivity of the neuroendocrine stress system of the organism (Rozanov, 2014; 2017). It is well known that high reactivity to stress may be related to developmental abnormalities, that touch hippocampus, amygdala and prefrontal cortex, the last two structures are known to be responsible for a variety of emotional and cognitive features enhancing perceived stress, fears, aggression and self-aggression (McEwen, 2016). Suicidal thoughts may be one of the links in those vicious cycles that are formed as a result of early life stress, impaired brain development and enhanced stress reactivity, fears, frustrations, pessimistic and self-aggressive tendencies.

Another possibility is that persistent suicidal thoughts may act as one of the subtle forms of developing 'ability for lethal self-injury', as Thomas Joiner calls it in his theory of suicidal behaviour. According to Joiner for suicide to happen an individual has to overcome his self-preservation motive and overthrow the self-preservation instinct by doing this numerous times and in numerous ways (Joiner, 2005). For children and adolescents death is not a tangible or thought-over concept. That is why their suicidal thoughts tend to be rather vague and unclear. Thus, suicidal ideation in adolescents can serve as a means to actually make teenager's thoughts about killing himself/herself or dying more clear-cut. In that case, suicidal ideation becomes a significant stage in the path to suicide.

However, having SI does not always mean that a teenager is suicidal. Though suicidal thoughts may differ in severity, most people who experience them do not

kill themselves. Some researchers point out that suicidal ideation does not necessarily lead to suicide while even single suicide attempt or at least self-inflicted injury is a far more reliable estimate of a future risk of suicide. Borges, Angst, Ruscio, and Kessler (2008), analysing reports from the National Comorbidity Survey (NCS), discovered that haunting SI might even lessen the risk of future suicide plans and attempts in case it is not followed by suicide plans or prior attempts (Borges et al., 2008). Rodgers also connects SI to defensive mechanisms, aiming to alleviate depressive affects (Rodgers, van Leeuwen, Chabrol, & Leichsenring, 2011).

Modern studies focus on various risk factors of suicide and try to evaluate how these factors interact, moderate, modulate or mediate each other and suicidal outcomes, developing vision of "pathways of suicide". Unfortunately, the growing number of identified risk factors results in burgeoning of the prevention methods and types of intervention, which are sometimes conflicting. Still, it is extremely important to develop understanding of psychological substructures that drive an individual from suicidal ideation to suicide, especially during adolescence, because it is the only way to reduce suicide rates and provide some truly effective prevention measures. Most commonly, researchers differentiate between biological, social and psychological risk factors for the onset of suicide activity. Genetic influence on suicide behaviour can be viewed independently or as a biological factor. Distress and stressful life events are complex phenomena that have tremendous effect on a person's desire to take his/her life. That is why there is a growing trend to analyse the effects of stress on suicidal activity as a separate factor. However, analysis of numerous transcultural sources indicates that suicidal ideation in adolescence is only partly explained by genetic influences; predominantly it is accounted for by environmental factors (Linker, Gillespie, Maes, Eaves, & Silberg, 2012).

Another factor that must be taken into consideration is even more complex—it refers such issues as sense of living, or feelings that life has or has no meaning, as well as perspectives about future. This complex existential feeling is one of the strongest predictors of suicide; it can capture not only those who are overwhelmed and stressed, but also those who are idle, have no purposes in life or did not develop meaningful values. While loss of meaning or life purpose is associated with idleness, loneliness, depressed thoughts, escapism, anger, sadness and boredom, having meaning has a protective effect even in complicated life circumstances. Having meaning makes the person feel that the world is understandable, which leads to the development of environmental mastery. In such conditions it is much easier for the person to find his/her fit within the world and build a bunch of positive relationships (Brassai, Piko, & Steger, 2011). In our study feeling that life has no meaning in adolescents was strongly associated with suicidal fantasies and less—with thoughts about suicide and plans of making an attempt. This feeling also correlated with higher depression, irritability and perception of being stressed rates, as well as with lower self-esteem (Rozanov, Rakhimkulova, & Ukhanova, 2014).

Suicidal Ideation, Distress and Coping Behaviours

Even though the causes of suicidal behaviour are not fully explained, it is clear that suicidal behaviour arises from interplay of different factors, of which distress is one of the most crucial ones (Ibrahim, Amit, & Suen, 2014; Schneider, Schnabel, & Wetterling, 2008). Distress in social, occupational or any other areas of functioning (for youngsters—distress at schools or universities) often becomes a chronic context and a shared characteristic of all personality disorders and psychopathologies. Distress is assessed usually by the number of negative life events, and by subjective feeling of perceived stress. Life events during the past 3 months were found to be risk factors for suicide (Hawton, Sutton, Haw, Sinclair, & Deeks, 2003), while comorbid psychopathologies are associated with even higher levels of distress, impairment and difficulties (Hawton, Sutton, Haw, Sinclair, & Deeks, 2005; Nock et al., 2010). Almost all personality psychopathologies affect person's ability to respond flexibly and adapt adequately to the changing environment and demands of life. This inflexibility in responding tends to aggravate other difficulties. For instance, Rew, Young, Brown and Rancour (2016) brought forward a hypothesis that when they enter and exit high school, adolescents experience innumerable stressful life events which may be associated with thinking of, planning and attempting suicide. Rates of reported suicidal ideation declined significantly from the first to the last year of high school ($p = 0.015$). Statistically significant relationships were found between suicidal ideation, several types of life events and maladaptive coping strategies, along with gender and racial/ethnic differences (Rew et al., 2016).

All this raises the question of 'what influences what': is it the stressful life events that provoke psychopathological vulnerability, or is it the psychopathology and its vulnerabilities that predispose the way a person reacts to stress? Researchers provide supportive analysis to both speculations. First of all, any personality psychopathology is a chronic distress by itself. Second, personality psychopathology predisposes patients to the experience of negative life events and thus, depressotypic cognitions of psychological pathologies may intensify the chronic distress in the presence of negative affect or negative life events (Ilardi & Craighead, 1999). For example, in one study psychopathology was related to cognitive vulnerability even after controlling for subsyndromal depressive symptoms in formally depressed patients (Ilardi & Craighead, 1999). Third, cognition and emotions are dramatically affected in any psychopathology and often are characterized with psychological inflexibility, tunnel/black-and-white thinking, poor coping skills, uncontrollable impulsivity, flattening of the affect, heightened egocentricity accompanied with negative self-image, disturbed interpersonal communication and lack of prospects about the future.

However, there is a solid number of investigators who see strong and immediate relationship between suicide attempts and life events and believe that recent stress and stressful life events are ample factors to provoke suicide activity. In their classic study, Paykel, Prusoff, and Myers (1975) compared the number and quality of life events experienced 6 months prior to attempt with events for two matched control

groups and found out that suicide attempters experienced four times as many events as the controls and 1.5 times as many as were reported by depressed patients before their depressive episode. The medium time for transition from suicidal ideation to suicide attempt took a month (as the substantial peaking of events occurred a month prior to the attempt). From the qualitative point of view, the events mentioned by depressed patients involved events with threatening implications, including undesirable events, those rated as stressful, and those outside the respondent's control (Paykel et al., 1975).

Heikkinen et al. (1997) investigated the relationship between personality disorders (PD), recent life events (during the last week and last 3 months before suicide) and comorbid axis I disorders in suicide. As expected, compared to controls, most individuals with PD had greater number of multiple life events, of which interpersonal and performance-related problems might have been the most important triggers for suicide. However, events possibly dependent on the person's own behaviour were much more common among the PD group, especially in the final week (70% vs. 23%). This points out how psychological disorder can affect person's cognition under stress (Heikkinen et al., 1997). Thus, clustering of stressful life events, especially the ones viewed as undesirable by an individual, might incite a depressive episode, which, in its turn, aggravates suicidal ideation and can reduce the time needed for transition from suicidal ideation to suicide attempt. Similar picture can be observed when analysing coping strategies. Specific behaviours within the broad coping categories of emotion-focused coping (e.g. self-blame) and avoidant coping (e.g. behavioural disengagement) account for these categories' associations with depression and suicidal ideation (Horwitz, Hill, & King, 2011).

Suicidal Ideation and Personality Traits

Literature analysis suggests that besides mental disorders and distress there are certain personality traits that are strongly associated with suicidal ideation and suicide attempts (Baca-Garcia et al., 2005; Conrad et al., 2008; Giegling et al., 2009; Hawton et al., 2005). Among them are as follows—high neuroticism, aggression, impulsivity and poor problem-solving skills (Gieglig, 2009; Hawton et al., 2005; Rozanov & Mid'ko, 2011). What is more, though suicidal ideators and suicide attempters expectedly differ from general public controls, these two groups result significantly differ from each other (Conrad et al., 2008; Hawton et al., 2005).

Anger, Aggression and Impulsivity Anger, aggression and impulsivity are personality traits associated with suicide attempt (Giegling et al., 2009; Park et al., 2010). Anger is one of the universal predictors of SI regardless cultural or ethnic differences. Even though anger is more typical of male gender, female adolescents who report problems with anger do not differ much from male adolescents with similar anger problem. Even though impulsivity is claimed not to be related with the duration of the suicidal process (Deisenhammer et al., 2009), it is often associated with suicidal attempt under stress, particularly caused by disrupted interpersonal

relationships and social status. Weyrauch points to female gender ($T = -1.98$, $p = 0.05$) and lifetime DMS-III-R diagnoses ($T = -2.45$, $p = 0.02$) to be significantly associated with more impulsive attempts (Weyrauch, Roy-Byrne, Katon, & Wilson, 2001). Baca-Garcia with colleagues suggests to differentiate between impulsivity that relates to a suicide attempt and impulsivity that is an attempter's personal trait. In such differentiation, they discovered that impulsive attempts were associated with low lethality and lack of depression (Baca-Garcia et al., 2005). In their research, Gieglig et al. bring forward a suggestion that anger and self-directedness appear to have some effects on suicide attempt. Correlation between impulsivity, harm avoidance and self-aggressive tendencies as temperament dimensions in personality can influence suicidality (Gieglig et al., 2009). Stemming from Cloninger's biopsychological model of personality, Conrad et al. (2008) suggest that in individuals with major depression such personality trait as high harm avoidance is associated with suicide attempt, whereas low self-directedness and high self-transcendence are related to suicidal ideation (Conrad et al., 2008).

Field studies' results are in accordance with these reasonings. Like in Rew's research on the influence of stress on SI in US adolescents, Park et al. found that in Korean adolescent's anger, anger expression and SI exhibited significant differences according to school level and gender. The group with higher anger and anger expression showed a higher average suicidal ideation score than that of the group with lower anger and anger expression (Park et al., 2010). Jamaican teenagers with a history of self-violence and violent thoughts toward others were positively associated with suicide attempt, while teenagers with self-violence and ease of access to lethal substances/weapons were positively associated with suicidal ideation (Kukoyi, Shuaib, Campbell-Forrester, Crossman, & Jolly, 2010). In China, physical fight was also associated with suicidal attempts (adjusted odds ratio = 4.358; 95% confidence interval = 1.080, 17.589), but not with suicidal ideation for females (Juan et al., 2010).

Hopelessness and Prospects About the Future The concept of hope and its loss have been marked as one of the strongest predictions of suicide risk for decades. Hopelessness accompanied with problem-solving deficits places youths at risk of developing suicidal thoughts and engaging in suicidal behaviour (Labelle, Breton, Pouliot, Dufresne, & Berthiaume, 2013). Hopelessness is a symptom of major depression that appears to be necessary for the development of suicidal intention and is an integral composite of suicidal ideation. Beck was one of the first to measure hopelessness as a powerful and lethal factor in the context of clinical depression (Beck, Kovacs, & Weissman, 1979), 10 years later Petrie and Chamberlain (1986) also denoted hopelessness as the key variable in predicting suicidal intent. Hopelessness is contagious, especially in adolescence, and urges the shift from suicidal ideation to suicide attempt in a very short period of time. Kobler and Stotland (1964) attributed the dramatic increase of suicide in hospitalized patients to perception of pessimism in staff members. There is a long-lasting discussion whether hopelessness is predominantly emotional or cognitive feeling. Some modern researchers relate hopelessness to dysfunctional attributional styles and problem-solving deficits. In such interpretation, hopelessness is part of negative

problem orientation/avoidant style and is more predictive of ideation in boys than in girls (Labelle et al., 2013). In a study of 5557 Chinese secondary students their SI was positively related to hopelessness while parent-adolescent communication played a protective role (Kwok & Shek, 2010).

Risky Behaviour Regardless of country, nationality and ethnicity adolescent involvement into risky and hazardous behaviour almost always correlates strongly with suicidal ideation and suicide attempts. By risky behaviours and factors are most often implied tobacco use, bullying, early onset of sexual life, self-mutilation, excessive time with friends together with parental disconnectedness, negative school experience (truancy, poor academic performance, social dysregulation) (Harel-Fisch, Abdeen, Walsh, Radwan, & Fogel-Grinvald, 2012). In a study in Israel where 8345 tenth-graders from three populations[2] took part, for all populations suicidal tendency was at least 4 times higher among adolescents reporting 4+ risk behaviours, suggesting that similar psychosocial determinants affect patterns of risky behaviours and suicidal tendency (Harel-Fisch et al., 2012). Harel-Fisch also denotes that understanding cultural contexts of risky behaviours and suicidal ideation and behaviour is equally important (Harel-Fisch et al., 2012).

In a study in China almost all investigated health-risk behaviours among adolescents aged 12–19 were significantly associated with SI and SA among adolescent females and males (Juan et al., 2010). Specifically, among adolescent males the risk factors included being sad/hopeless (AOR = 2.280; 95% CI = 1.615, 3.219) and drinking currently (AOR = 1.904; 95% CI = 1.269, 2.857), while among adolescent females the risk factors included considering themselves overweight (AOR = 1.257; 95% CI = 1.082, 1.610) and smoking currently (AOR = 1.708; 95% CI = 1.134, 4.605) (Juan et al., 2010).

Suicidal Ideation Environmental Risk Factors

Abuse and Victimization Physical abuse is significantly associated with greater adolescent suicidal ideation (Ahmad et al., 2014; Kwok, Chai, & He, 2013). In the USA longitudinal study, the risk of SI was 2.4 times greater among youth who experienced peer victimization in the past year, 3.4 times greater among those who were sexually assaulted, and 4.4 times greater among those who were exposed to maltreatment (Turner, Finkelhor, Shattuck, & Hamby, 2012). In Malaysia, being bullied at school and abused at home (either verbally or physically) was positively associated with suicidal ideation (Ahmad et al., 2014; Wang, Lai, Hsu, & Hsu, 2011). Bullying victimization had a moderating effect on the association between SI and anxiety symptoms (Yen et al., 2014). In another National longitudinal study, respondents exposed to physical abuse, at any age had a higher rate of depression and suicidal ideation in young adulthood than non-maltreated respondents. Among

[2]Jewish Israelis (1770), Arab Israelis (2185) and Palestinians in Gaza and the West Bank (4390).

maltreated respondents, exposure during early childhood (ages 0–5), particularly preschool (ages 3–5), was most strongly associated with depression. Respondents first exposed to physical abuse during preschool had a 77% increase in the odds of depression and those first exposed to sexual abuse during early childhood had a 146% increase in the odds of suicidal ideation compared to respondents maltreated as adolescents (Dunn, McLaughlin, Slopen, Rosand, & Smoller, 2013). In Greece, victims of bullying behaviour were more likely to experience SI; this association was particularly strong for those who were bullied on a weekly basis. Although the population impact of victimization in the prevalence of suicidal ideation was potentially higher for boys, these findings were similar in both boys and girls. Being a perpetrator ("bullying others") was not associated with suicide ideation (Skapinakis et al., 2011). In contrast, in Norway both bullied adolescents and adolescents who were aggressive toward others had significantly higher levels of SI ($p < 0.001$) at age 14 than non-involved adolescents. In the group being bullied, girls had higher levels of SI than boys did (Undheim & Sund, 2013). Sexually abused Jamaican teenagers exhibited higher risk of both suicide attempt and suicide ideation (Kukoyi et al., 2010). The increased predominance of SI among adolescents who survived sexual abuse points out to the important area of suicide prevention. However, to be effective suicide prevention measures in adolescent who are sexual abuse survivors should be based on evaluation of hopelessness, depression and PTSD.

Social Anxiety and Sexual Orientation Gallagher, Prinstein, Simon, and Spirito (2014) assessed symptoms of social anxiety, depression, suicidal ideation, loneliness and perceived social support in adolescents and found a significant direct relationship between social anxiety symptoms at baseline and SI at 18-month post-baseline, even after controlling for baseline depressive symptoms and ideation. They suggested that loneliness may be particularly implicated in the relationship between social anxiety and suicidality in teens (Gallagher et al., 2014). Several studies also consistently demonstrated that LGBT youth experience substantially higher level of SI as compared with their heterosexual counterparts. It is associated with higher incidence of SA and is explained by higher exposure to environmental stressors like peer bullying, family rejection and victimization (Pflum, Venema, Tomlins, Goldblum, & Bongar, 2015). Besides environmental factors, severe intrapersonal conflict can be also mentioned as one of the reasons.

Suboptimal Health and Physical Pain Serious chronic illnesses that require substantial effort to keep up the normal life were found to be predictive of SI in adolescents. For example, asthma predicted suicidal ideation and behaviour among participants 11 years and older (Bandiera, Ramirez, Arheart, Canin, & Goodwin, 2013). Diseases that distort physical appearance seem to have multi-faceted effect on adolescents. In a study of 4744 adolescents with acne, Halvorsen found that among those with very much acne, as compared those with no/little acne, SI was twice as frequently reported among girls (25.5% vs. 11.9%) and three times more frequently reported among boys (22.6% vs. 6.3%). Suicidal ideation remained significantly associated with substantial acne (odds ratio 1.80, 95% confidence interval 1.30–2.50) in a multivariate model including adjustments of symptoms of depression, ethnicity and family income. Mental health problems (2.25, 1.69–3.00),

low attachment to friends (1.52, 1.21–1.91), not thriving at school (1.41, 1.12–1.78), never having had a romantic relationship (1.35, 1.05–1.70) and never having had sexual intercourse (1.51, 1.21–1.89) were all associated with substantial acne in a multivariate model (Halvorsen et al., 2011).

Tu et al. (2012) discovered that suboptimal health status and anxiety symptom at baseline could strongly predict the incidence of self-reported suicidal ideation among adolescents in China (Tu et al., 2012). However, having studied adolescents with chronic pain, Bromberg insists that contrary to hypotheses and past findings in adults with chronic pain, adolescents with chronic pain did not endorse SI more frequently than their peers without chronic pain (Bromberg, Law, & Palemo, 2017). Not only having poor health can indicate SI—health-risk behaviours appear to have an effect on suicidal ideation among Thai youth (Peltze & Pengpid, 2012). Several studies were run on the effect of sleep duration and quality on suicidal behaviour during adolescence. Of them probably the most comprehensive was the SEYLE project, which was operated in 11 European countries and analysed data from 11,788 teenagers. A cross-sectional analysis of the correlation between the number of hours of sleep per night and the Zung Self-rating Anxiety Scale (Z-SAS), the Paykel Suicidal Scale (PSS) and the Strengths and Difficulties Questionnaire (SDQ) was made. The results showed that reduced sleep was associated with increased scores on SDQ subscales of emotional ($\beta = -0.13$) and peer-related problems ($\beta = -0.06$), conduct ($\beta = -0.07$), total SDQ score ($\beta = -0.07$), anxiety (Z-SAS scores, $\beta = -10$) and SI (PSS, $\beta = -0.16$) (Sarchiapone et al., 2014). Jang and et al. were also studying lack of sleep on Korean adolescents' suicidal ideation and attempts (75,066 teenagers). The odds ratio of suicidal ideation/attempt regarding less than 4 h of sleep, compared to 6–7 h of sleep, was smaller in a group with depressed mood than in a group without depression. A negative association between self-rated health and suicidal ideation/attempt was also weaker for those with depressed mood than for those without such experience (Jang et al., 2013).

Conclusions

Suicidal ideation in adolescence is a warning sign of possible onset of suicide activity and should not be disregarded at any time. This is true for all countries and cultures around the globe. Nowadays, there is still no clear understanding which of the risk factors can provoke suicidal ideation to progress to suicide activity faster than others. The nature of suicidal ideation in adolescents is transient and fluctuating, and it can take from 10 min to a year to progress to the first suicide attempt. We did not include here SI in most prevalent mental disorders like depression, anxiety disorder or addictions. It should be noted that these conditions are strongly associated with SI but possibly are not so much dependent on cultural context. This may be the subject of a special analysis. As to transcultural peculiarities, analysis of existing studies largely suggests that suicidal ideation in adolescents is a very

common phenomenon and is prevalent in youth regardless belonging to different cultures. Many studies identify universal risk factors for SI including stressful life events, bullying, peer victimization, psychopathologies and problems with physical health, physical appearance and untraditional sexual orientation.

On the other hand, prevalence of suicidal ideation seems to be higher in youth of the countries which have quite recently plunged into globalist context—China, South Korea, Taiwan and some Latin America countries. It is rather risky to rely on absolute figures of prevalence of suicidal thoughts in view of differences in studies design, types of questions, time periods, etc., though in several studies figures from above-mentioned areas of the world seem higher than in, for instance, Western Europe or North America. On the other hand prevailing number of publications from China and South Korea is evident, which also makes an impression and testifies of concerns among scientists. One of the publications suggests a well-developed theory about the reason of this alarming tendency—a conflict between traditional Confucian cultural values and more liberal socio-cultural norms and meanings exported from western society and apprehended mostly by youth. This is accompanied with increasing media coverage of suicides, which may cause changes of attitudes to suicidal acts and may promote suicidal thinking. According to many authors' opinion this may lead to more accepting thinking about suicide among the young, and such conclusion is very reasonable, especially taking into consideration modern technical equipment (gadgets) which make information content ubiquitous and promote social media where groups supporting suicidal behaviour can be easily found. This conceptual understanding also explains higher suicide rates in rural areas and among women, for instance, in China. In both cases the conflict and "cultural ambiguity" (pressure of parents who are still bearing traditions and influence of the modern culture which suggests much more liberal attitudes) reaches the maximum (Park, Im, & Ratcliff, 2014). Though this explanation may not be universal, it is a rather typical approach and we share this view. It should be kept in mind that new generations are coming soon already born by those who have summoned global culture, all equipped with smart phones and plunged into social media. One should also consider contagion of suicidal ideation and the role of life models and other significant persons which is especially strong among adolescents.

Most researchers agree that preventing physical abuse and victimization, enhancing family functioning and effective communication, increasing the parents' awareness of the appropriate parenting skills and knowledge, treating the children and adolescents as individuals with their unique personality, rights and privileges, enhancing teenage physical health can protect an adolescent from thoughts about committing suicide. There is also a lot to be done in the adolescents community to enhance their feeling of meaning in life, to promote life purposes and values that ignite "intrinsic" values and goals (aimed to meet such human needs as competence, affiliation and autonomy) not "extrinsic" ones, which are associated with external rewards, like status, money and recognition (Twenge, 2011). It would be not an easy task with regards of the current situation, and this is the task for the families in the first turn, though schools and universities can also contribute to it.

References

Ahmad, N., Cheong, S. M., Ibrahim, N., & Rosman, A. (2014). Suicidal ideation among Malaysian adolescents. *Asia Pacific Journal of Public Health, 26*(5), 63S–69S.

Baca-Garcia, E., Diaz-Sastre, C., García Resa, E., Blasco, H., Braquehais Conesa, D., Oquendo, M. A.,…, de Leon, J. (2005). Suicide attempts and impulsivity. *European Archives of Psychiatry and Clinical Neuroscience, 255*(2), 152–156.

Bandiera, F. C., Ramirez, R., Arheart, K. L., Canino, G., & Goodwin, R. D. (2013). Asthma and suicidal ideation and behaviour among Puerto Rican older children and adolescents. *Journal of Nervous and Mental Disease, 201*(7), 587–591.

Baumsteiner, R. F. (1986). *Identity: Cultural change and the struggle for self*. New York, NY: Oxford University Press.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: The scale for suicidal ideation. *Journal of Consultative and Clinical Psychology, 47*(2), 343–352.

Bertolote, J., Fleischman, A., De Leo, D., & Wasserman, D. (2009). Suicidal thoughts, suicide plans and attempts in the general population on different continents. In D. Wasserman & C. Wasserman (Eds.), *Oxford textbook on suicidology and suicide prevention* (pp. 99–104). NY: Oxford University Press.

Borges, G., Angst, J., Nock, M. K., Ruscio, A. M., & Kessler, R. C. (2008). Risk factors for the incidence and persistence of suicide-related outcomes: A 10-year follow-up study using the National Comorbidity Surveys. *Journal of Affected Disorders, 105*(1–3), 25–33.

Brådvik, L., & Berglund, M. (2009). Repetition and severity of suicide attempts across the life cycle: A comparison by age group between suicide victims and controls with severe depression. *BMC Psychiatry, 9*(62), 1–7.

Brassai, L., Piko, B. F., & Steger, M. F. (2011). Meaning in life: Is it a protective factor for adolescents' psychological health? *International Journal of Behavioural Medicine, 18*(1), 44–51.

Bromberg, M. H., Law, E. F., & Palermo, T. M. (2017). Suicidal ideation in adolescents with and without chronic pain. *The Clinical Journal of Pain, 33*(1), 21–27.

Busch, K. A., Fawcett, J., & Jacobs, D. G. (2003). Clinical correlates of inpatient suicide. *Journal of Clinical Psychiatry, 64*(1), 14–19.

Cao, X.-L., Zhong B.-L., Xiang Y.-T., Ungvari, G. S., Lai, K. Y., Chiu, H. F., & Caine, E. D. (2015). Prevalence of suicidal ideation and suicide attempts in the general population of China: A meta-Analysis. *International Journal of Psychiatric Medicine, 49*(4), 296–308.

Centers for Disease Control and Prevention. (2013). *Web-based Injury Statistics Query and Reporting System (WISQARS)* [Online]. National Center for Injury Prevention and Control, CDC (producer).

Centre for Disease Control and Prevention (2014). *Fatal Injury reports, 1999–2013*. Retrieved from http://www.cdc.gov/injury/wisqars/fatal_injury_reports.html.

Chan, L., Shamsul, A. S., & Maniam, T. (2014). Are predictors of future suicide attempts and the transition from suicidal ideation to suicide attempts shared or distinct: A 12-month prospective study among patients with depressive disorders. *Psychiatry Research, 220*(3), 867–873.

Conrad, R., Walz, F., Geiser, F., Imbierowicz, K., Liedtke, R., & Wegener, I. (2008). Temperament and character personality profile in relation to suicidal ideation and suicide attempts in major depressed patients. *Psychiatry Research, 170*(2–3), 212–217.

Coombs, D. W., Miller, H. L., Alarcon, R., Herlihy, C., Lee, J. M., & Morrison, D. P. (1992). Presuicide attempt communications between parasuicides and consulted caregivers. *Suicide and Life Threatening Behaviour, 22*(3), 289–302.

De Luca, S. M., & Wyman, P. A. (2012). Association between school engagement and disclosure of suicidal ideation to adults among Latino adolescents. *Journal of Primary Prevention, 33*(2–3), 99–110.

Deisenhammer, E. A., Ing, C. M., Strauss, R., Kemmler, G., Hinterhuber, H., & Weiss, E. M. (2009). The duration of the suicidal process: How much time is left for intervention between consideration and accomplishment of a suicide attempt? *Journal of Clinical Psychiatry, 70*(1), 19–24.

Dunn, E. C., McLaughlin, K. A., Slopen, N., Rosand, J., & Smoller, J. W. (2013). Developmental timing of child maltreatment and symptoms of depression and suicidal ideation in young adulthood: Results from the National Longitudinal Study of Adolescent Health. *Depression and Anxiety, 30*(10), 955–964.

Gallagher, M., Prinstein, M. J., Simon, V., & Spirito, A. (2014). Social anxiety symptoms and suicidal ideation in a clinical sample of early adolescents: Examining loneliness and social support as longitudinal mediators. *Journal of Abnormal Child Psychology, 42*(6), 871–883.

Giegling, I., Olgiati, P., Hartmann, A. M., Calati, R., Möller, H. J., Rujescu, D.& Serretti, A. (2009). Personality and attempted suicide. Analysis of anger, aggression and impulsivity. *Journal of Psychiatric Research, 43*(16), 1262–1271.

Gliatto, M. F., & Rai, A. K. (1999). Evaluation and treatment of patients with suicidal ideation. *American Family Physician, 59*(6), 1500–1506.

Halvorsen, J. A., Stern, R. S., Dalgard, F., Thoresen, M., Bjertness, E., & Lien, L. (2011). Suicidal ideation, mental health problems, and social impairment are increased in adolescents with acne: A population-based study. *Journal of Investigative Dermatology, 131*(2), 363–370.

Harel-Fisch, Y., Abdeen, Z., Walsh, S. D., Radwan, Q., & Fogel-Grinvald, H. (2012). Multiple risk behaviours and suicidal ideation and behaviour among Israeli and Palestinian adolescents. *Social Sciences and Medicine, 75*(1), 98–108.

Harwood, D., & Jacoby, R. (2000). Sucidal Behaviour among the elderly. In K. Hawton & K. van Heeringen (Eds.), *The international handbook of suicide and attempted suicide* (pp. 275–292). Chichester: Wiley.

Hawton, K., Houston, K., Haw, C., Townsend, E., & Harriss, L. (2003). Comorbidity of Axis I and Axis II disorders in patients who attempted suicide. *The American Journal of Psychiatry, 160* (8), 1494–1500.

Hawton, K., Sutton, L., Haw, C., Sinclair, J., & Deeks, J. J. (2005). Schizophrenia and suicide: Systematic review of risk factors. *The British Journal of Psychiatry, 187*(1), 9–20.

Heikkinen, M. E., Henriksson, M. M., Isometsä, E. T., Marttunen, M. J., Aro, H. M., & Lönnqvist, J. K. (1997). Recent life events and suicide in personality disorders. *Journal of Nervous and Mental Disorders, 185*(6), 373–381.

Horwitz, A. G., Hill, R. M., & King, C. A. (2011). Specific coping behaviours in relation to adolescent depression and suicidal ideation. *Journal of Adolescence, 34*(5), 1077–1085.

Ibrahim, N., Amit, N., & Suen, M. W. (2014). Psychological factors as predictors of suicidal ideation among adolescents in Malaysia. *PLoS ONE, 9*(10), e110670.

Ilardi, S. S., & Craighead, W. E. (1999). The relationship between personality pathology and dysfunctional cognitions in previously depressed adults. *Journal of Abnormal Psychology, 108* (1), 51–57.

Jang, S. I., Lee, K. S., & Park, E. C. (2013). Relationship between current sleep duration and past suicidal ideation or attempt among Korean adolescents. *Journal of Preventive Medicine and Public Health, 46*(6), 329–335.

Joiner, T. E. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.

Juan, W., Xiao-Juan, D., Jia-Ji, W., Xin-Wang, W., & Liang, X. (2010). The associations between health risk behaviours and suicidal ideation and attempts in an urban Chinese sample of adolescents. *Affective Disorders, 126*(1–2), 180–187.

Kessler, R. C. (2012). The costs of depression. *Psychiatric Clinics of North America, 35*(1), 1–14.

Kobler, A. L., Stotland, E., & Gotfried, S. D. (1964). *The end of hope. A social–clinical study of suicide*. London: Collier-Macmillan.

Kukoyi, O. Y., Shuaib, F. M., Campbell-Forrester, S., Crossman, L., & Jolly, P. E. (2010). Suicidal ideation and suicide attempt among adolescents in Western Jamaica: A preliminary study. *Crisis, 31*(6), 317–327.

Kwok, S. Y., Chai, W., & He, X. (2013). Child abuse and suicidal ideation among adolescents in China. *Child Abuse and Neglect, 37*(11), 986–996.

Kwok, S. Y., & Shek, D. T. (2010). Family processes and suicidal ideation among Chinese adolescents in Hong Kong. *The Scientific World Journal, 11,* 27–41.

Labelle, R., Breton, J. J., Pouliot, L., Dufresne, M. J., & Berthiaume, C. (2013). Cognitive correlates of serious suicidal ideation in a community sample of adolescents. *Journal of Affective Disorders, 145*(3), 370–377.

Linker, J., Gillespie, N. A., Maes, H., Eaves, L., & Silberg, J. L. (2012). Suicidal ideation, depression, and conduct disorder in a sample of adolescent and young adult twins. *Suicide and Life Threatening Behaviour, 42*(4), 426–436.

Mann, J. J., Waternaux, C., Haas, G. L., & Malone, K. L. (1999). Toward a clinical model of suicidal behaviour in psychiatric patients. *American Journal of Psychiatry, 156*(2), 181–189.

McCarty, C. A., Russo, J., Grossman, D. C., Katon, W., Rockhill, C., McCauley, E., … Richardson, L. (2011). Adolescents with suicidal ideation: Health care use and functioning. *Academic Pediatrics, 11*(5), 422–426.

McEwen, B. S. (2016). In pursuit of resilience: Stress, epigenetics, and brain plasticity. *Annals of the New York Academy of Sciences, 1373*(1), 56–64.

McKeown, R. E., Cuffe, S. P., & Schulz, R. M. (2006). US suicide rates by age group, 1970–2002: An examination of recent trends. *American Journal of Public Health, 96*(10), 1744–1751.

Neeleman, J., de Graaf, R., & Vollebergh, W. (2004). The suicidal process: Prospective comparison between early and later stages. *Journal of Affective Disorders, 82*(1), 43–52.

Nock, M. K., & Banaji, M. R. (2007). Prediction of suicide ideation and attempts among adolescents using a brief performance-based test. *Journal of Consulting and Clinical Psychology, 75*(5), 707–715.

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Bruffaerts, A. B., … Williams, D. R. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *The British Journal of Psychiatry, 192*(2), 98–105.

Nock, M. K., Hwang, I., Sampson, N. A., & Kessler, R. C. (2010). Mental disorders, comorbidity and suicidal behaviour: Results from the National Comorbidity Survey Replication. *Molecular Psychiatry, 15*(8), 868–876.

Nordqvist, C. (2014). What are suicidal thoughts? What is suicidal ideation? *Medical News Today*. Retrieved from http://www.medicalnewstoday.com/articles/193026.php.

O'Connor, R. C., & Nock, M. K. (2014). The psychology of suicidal behaviour. *The Lancet Psychiatry, 1*(1), 73–85.

Park, B. C., Im, J. S., & Ratcliff, K. S. (2014). Rising youth suicide and changing cultural context in South Korea. *Crisis, 35*(2), 102–109.

Park, Y. J., Ryu, H., Han, K. S., Kwon, J. H., Kim, H. K., Kang, H. C., … Shin, H. (2010). Anger, anger expression, and suicidal ideation in Korean adolescents. *Archives of Psychiatric Nursing, 24*(3), 168–177.

Paykel, E. S., Prusoff, B. A., & Myers, J. K. (1975). Suicide attempts and recent life events. A controlled comparison. *Archives of General Psychiatry, 32*(3), 327–333.

Peltzer, K., & Pengpid, S. (2012). Suicidal ideation and associated factors among school-going adolescents in Thailand. *International Journal of Environmental Research on Public Health, 9* (2), 462–473.

Petrie, K., & Chamberlain, K. (1986). Predicting suicidal behaviour: Clinical and statistical strategies. In R. J. Brook (Ed.), *The fascination of statistics* (pp. 295–305). New York: Marcel-Dekker.

Pflum, S., Venema, K., Tomlins, J., Goldblum, P., & Bongar, B. (2015). Suicidal ideation and behaviour among sexually minorities youth. In U. Kumar (Ed.), *Suicidal behaviour: Underlying dynamics* (pp. 123–135). New York: Routledge.

Rew, L., Young, C., Brown, A., & Rancour, S. (2016). Suicide ideation and life events in a sample of rural adolescents. *Archives of Psychiatric Nursing, 30*(2), 198–203.

Robins, E., Gassner, S., Kayes, J., Wilkinson, Rh, Jr., & Murphy, G. E. (1959). The communication of suicidal intent: A study of 134 consecutive cases of successful (completed) suicide. *American Journal of Psychiatry, 115*(8), 724–733.

Rozanov, V. A. (2017). *Stress and Epigenetics in Suicide.* London: Academic Press.

Rozanov, V. A. (2014). Suicides in children and adolescents—What is happening and what may be the reason? *Suicidology (Suitsidologia), 14,* 14–24.

Rozanov, V. A., & Mid'ko, A. (2011). Personality patterns of suicide attempters: Gender differences in Ukraine. *Spanish Journal of Psychology, 14*(2), 693–700.

Rozanov, V. A., Rakhimkulova, A. V., & Ukhanova, A. I. (2014). "Life has no meaning" feelings in adolescents—Relation to suicidal ideation and attempts and mental health. *Suicidology (Suitsidologia), 5,* 33–40.

Rodgers, R. F., van Leeuwen, N., Chabrol, H., & Leichsenring, F. (2011). An exploration of the role of defensive psychopathology in adolescent suicidal ideation and behaviour. *Bulletin of the Menninger Clinic, 75*(3), 236–253.

Rudd, M. D., Joiner, T., & Rajab, M. H. (2001). *Treating suicidal behaviour: An effective, time-limited approach*. New York: The Guilford Press.

Sarchiapone, M., Mandelli, L., Carli, V., Iosue, M., Wasserman, C., Hadlaczky, G., … Wasserman, D. (2014). Hours of sleep in adolescents and its association with anxiety, emotional concerns, and suicidal ideation. *Sleep Medicine, 15*(2), 248–254.

Sareen, J., Cox, B. J., Afifi, T. O., de Graaf, R., Asmundson, G. J. C., ten Have, M., & Stein, M. B. (2005). Anxiety disorders and risk for suicidal ideation and suicide attempts. A population-based longitudinal study of adults. *Archives of General Psychiatry, 62*(11), 1249–1257.

Schotte, D. E., & Clum, G. A. (1987). Problem-solving skills in suicidal psychiatric patients. *Journal of Consulting and Clinical Psychology, 55*(1), 49–54.

Schneider, B., Schnabel, A., & Wetterling, T. (2008). How do personality disorders modify suicide risk. *Journal of Personality Disorders, 22*(3), 233–245.

Shneidman, E. (1985). *Definition of suicide*. New York: Wiley.

Selby, E. A., Yen, S., & Spirito, A. (2013). Time varying prediction of thoughts of death and suicidal ideation in adolescents: Weekly ratings over 6-month follow-up. *Journal of Clinical Child and Adolescent Psychology, 42*(4), 481–495.

Simon, R. I. (2014). Passive suicidal ideation: Still a high-risk clinical scenario. *Current Psychiatry, 13*(3), 13–15.

Skapinakis, P., Bellos, S., Gkatsa, T., Magklara, K., Lewis, G., Araya, R., … Mavreas, V. (2011). The association between bullying and early stages of suicidal ideation in late adolescents in Greece. *BMC Psychiatry, 11,* 22.

Souza, L. D., Silva, R. A., Jansen, K., Kuhn, R. P., Horta, B. L., & Pinheiro, R. T. (2010). Suicidal ideation in adolescents aged 11 to 15 years: Prevalence and associated factors. *Revista Brasileira de Psiquiatria, 32*(1), 37–41.

Tu, C., Huang, Z., Fu, L., Fang, Y., Wang, J., Guo, T., .. & Tao, F. (2012). Predictors of suicidal ideation with sub-optimal health status and anxiety symptom among Chinese adolescents. *Journal of Tropical Pediatr, 58*(4), 314–319.

Turner, H. A., Finkelhor, D., Shattuck, A., & Hamby, S. (2012). Recent victimization exposure and suicidal ideation in adolescents. *Archives of Pediatric and Adolescent Medicine, 166*(12), 1149–1154.

Twenge, J. M. (2011). Generational differences in mental health: Are children and adolescents suffering more, or less? *American Journal of Orthopsychiatry, 81*(4), 469–472.

Undheim, A. M., & Sund, A. M. (2013). Involvement in bullying as predictor of suicidal ideation among 12- to 15-year-old Norwegian adolescents. *European Child and Adolescent Psychiatry, 22*(6), 357–365.

Vander-Stoep, A., McCauley, E., Flynn, C., & Stone, A. (2009). Thoughts of death and suicide in early adolescence. *Suicide and Life Threatening Behaviour, 39*(6), 599–613.

Ventura-Juncá, D. R., Carvajal, C., Undurraga, S., Vicuña, P., Egaña, J., & Garib, M. J. (2010). Prevalence of suicidal ideations and suicidal attempts among adolescents living in Metropolitan Santiago. *Revista Medico Chile, 138*(3), 309–315.

Wasserman, D. (2001). A stress-vulnerability model and the development of the suicidal process. In D. Wasserman (Ed.), *Suicide. An unnecessary death* (pp. 13–27). London: Martin Duniz.

Wasserman, D. (2016). The suicidal process. In D. Wasserman (Ed.), *Suicide. An unnecessary death* (2nd ed., pp. 27–37). New York: Oxford University Press.

Wasserman, D., & Sokolowski, M. (2016). Stress-vulnerability model of suicidal behaviours. In D. Wasserman (Ed.), *Suicide. An unnecessary death* (2nd ed., pp. 27–37). New York: Oxford University Press.

Wang, R. H., Lai, H. J., Hsu, H. Y., & Hsu, M. T. (2011). Risk and protective factors for suicidal ideation among Taiwanese adolescents. *Nursing Research, 60*(6), 413–421.

Weyrauch, K. F., Roy-Byrne, P., Katon, W., & Wilson, L. (2001). Stressful life events and impulsiveness in failed suicide. *Suicide and Life Threatening Behaviour, 31*(3), 311–319.

Wenzel, A., & Beck, A. T. (2008). A cognitive model of suicidal behaviour: Theory and treatment. *Applied and Preventive Psychology, 12*(4), 189–201.

WHO. (2010). *International statistical classification of diseases and related health problems, volumes 1, 2 and 3 (Tenth Revision)*. Retrieved from http://www.who.int/classifications/icd/en/.

WHO. (2013). *Suicide data*. Retrieved from http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/.

WHO. (2014). *Preventing suicide: A global imperative. Executive summary*. Retrieved from http://www.who.int/mental_health/suicide-prevention/world_report_2014/en/.

Williams, J. M. G., & Pollock, L. R. (2000). The psychology of suicidal behaviour. In K. Hawton & K. van Heeringen (Eds.), *The international handbook of suicide and attempted suicide* (pp. 79–93). Chichester: Wiley.

Yen, C. F., Lai, C. Y., Ko, C. H., Liu, T. L., Tang, T. C., Wu, Y. Y. & Yang, P. (2014). The associations between suicidal ideation and attempt and anxiety symptoms and the demographic, psychological, and social moderators in Taiwanese adolescents. *Archives of Suicide Research, 18*(1), 104–116.

Zubin, J. (1974). Observations on nosological issues in the classification of suicidal behaviour. In A. T. Beck, H. L. P. Resnik, & D. J. Lettieri (Eds.), *The prediction of suicide* (pp. 3–25). Bowie: The Charles Press Publishers.

Chapter 16
Geriatric Population: Suicide as a Road to Relief or to Release

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Introduction

dehino 'smin yathā dehe, kaumāram yauvanam jarā

tathā dehāntara-prāptir, dhīras tatra na muhyati

{As the embodied soul continuously passes, in this body, from boyhood to youth to old age, the soul similarly passes into another body at death. A sober person is not bewildered by such a change}.

The Bhagvad Gita, 2016a.

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Under the Indian Ashram system, the journey of human life has been divided into four periods or stages, namely: Brahmachary, Grihasth, Vanaprasth and Sanyas Ashram. The goal of each period was the fulfilment of some responsibilities and overall growth and development of an individual. While some scriptures present these as sequential stages of the human life cycle and recommend particular age when one enters each stage, many scriptures state them as four alternative ways of life, and not as sequential stage that any individual must follow, nor do they place any age limits.

Old age is the last phase of human life cycle. The post-retirement stage refers to when a person hands over responsibilities to the next generation and takes on an advisory role in the family and society. The person gradually tries to withdraw from the so called worldly desires and pleasures. The phase starts with the transition from a Grihasth (family) life with greater emphasis on Kaam and Arth (wealth, property, security, pleasure and sexual desires involving materialistic things) towards a life having a greater emphasis on Moksha (Spiritualism and salvation). It is the phase, where a person is almost done with the major responsibilities and the roles in their life. Sadly, for many this does not turn out to be a smooth end of human life cycle. There are many life events and hurdles in one's life that keep on changing the perspective of life. Suicide is sometimes one of the sad culmination points for some. It is an act of intentionally killing or ending one's own life. The old age comes with various problems ranging from physical, mental to social deterioration. Multiple factors increase suicidal risk in elderly ranging from distal early and mid-life issues such as child abuse, parental death, substance misuse and traumatic life experiences to proximal precipitants in late life such as social isolation and health-related concerns. Clinical depression is the most frequently identified proximal mental health concern in geriatric population (Draper, 2014). The functional disability because of ageing was independently associated with death wishes in older adults (Fässberg et al., 2014). The greater suicide rate in the oldest old than in the middle-aged can be attributed to the increased prevalence of medical hospitalization (Erlangsen, Vach & Jeune, 2005). Chronic mental health problems are risk factors associated with suicide, with particular emphasis on affective disorders, including depression and bipolar disorders, on top of personality traits, stressful life events, comorbid medical conditions, social isolation, unemployment and poverty (Conwell, Duberstein, & Caine, 2002; Pompili, Rihmer, & Akiskal, 2012; Pompili et al., 2013).

In studies, depression is described to have negative impact on person's reasoning ability leading to inability to cope or adapt to the new challenges. When this occurs, symptoms like unstable mood, loss of social interaction, looking down upon one-self, self-attack, etc. will start forming. Age is reported to have a strong relationship with depression (Heun & Hein, 2005; Koenig et al., 1995). This old age stage is supposed to be marked by renunciation or giving up of materialistic desires and preconceived notions that it should represent a state of disinterest and detachment from material life. *Sallekhanā* is the last vow prescribed by the Jain ethical code of conduct. The vow of sallekhanā is observed by the Jain ascetics and at the end of their life by slowly reducing the intake of liquid and food. Sallekhanā is allowed

when normal life according to religion is not possible due to weakness in old age, incurable chronic disease or when a person is nearing her/his end. It is a highly respected practice among the Jain community (Tukol, 1976).

By reviewing the suicide in elderly the issue arises "Is aging really a bad experience"? Why a person after living his/her almost entire life losses hope at this last stage of life. Keeping these questions in mind, following areas have been covered like psychology of ageing, changes in the phase of ageing, factors affecting ageing resulting in suicide, risk factors, indicators, warning signs of suicide and in the conclusion would enumerate few preventive strategies and recommendations.

Epidemiology of Geriatric Population and Suicide

The percentage of older adults is expected to increase dramatically in the coming decades. Worldwide, the population is ageing rapidly. World Health Organization (WHO), (2016) report says that between 2015 and 2050, the proportion of the world's population over 60 years will nearly double from 12 to 22%. The share of India's population aged 60 and above is projected to rise from 8% in 2010 to 19% in 2050, according to the United Nations Population Division (United Nations, 2011). This huge shift in the share of aged Indians taking place in the context of changing family values and grossly limited income support in the elderly comes with many social, economic and healthcare policy challenges. Neuropsychiatric disorders among the older adults account for 6.6% of the total disability for this age group. Approximately 15% of adults aged 60 and over suffer from a mental disorder. The most common neuropsychiatric disorders in this age group are dementia and depression. Anxiety disorders affect 3.8% of the elderly population, substance use problems affect almost 1% and around a quarter of deaths from self-harm are among those aged 60 or above. Substance abuse problems among the elderly are often overlooked or misdiagnosed and mental health problems are under-identified by healthcare professionals and older people themselves, and the stigma surrounding mental illness makes people reluctant to seek help (WHO, 2016).

In India, in the year 2014, 7107 males and 2654 females (Total 9761) aged 60 years and above committed suicide. This comprises 7.4% of total number of suicides in the country (National Crime Record Bureau, 2014).

Geropsychology

> *There is a certain maturity of judgment about men, things, causes and life generally, that nothing in the world but years can bring, a real wisdom that only age can teach.*
>
> (Hall, 1922)

The journey of life transition begins in the womb of a mother. It starts from the union of sperm and egg to form an embryo and moves on to become a fetus-to-infant-to-child-to-adolescent, adulthood and then the old age. At each point in life, a person sheds previous roles and assumes newer ones. Age is not simply a biological function of number of years someone has lived or physiological changes the body goes through. It also reflects the social norms, values and expectations. With the advancement of medical science, old age has taken on a new meaning in society. This phase is valued by others more than any other phase because an individual at this stage has finally acquired the wisdom necessary to guide others. This is exemplified by the famous quote "Old is Gold".

It is difficult to generalize about the psychological experiences of any particular age group, since there are considerable parallels between the youth and aged. While both are times of mental and physical changes, leading to increased introspection, search for meaning of life and of the very existence, questions of identity and sense of privacy. A remarkable point here is that, while the young have shorter pasts and longer futures, older people have longer pasts and shorter futures. It is a time of loss: the loss of spouse, friends, jobs, standard of living and health. Old age is that lifecycle stage when individuals are forced to face life's most stressful experiences. A Gerodynamics/Branching theory imply to the branching behaviour of an individual at the psychological, biological or social level of functioning. As an example, traumatic life events may result in lower order structures and a healthy life style may result in higher order structures, and consequently higher and lower probabilities of dying respectively. However it may not hold true for everyone. There are exceptions. Some people are strengthened by illness, and divorce may have a positive rather than a negative effect on mental health in terms of life expectancy and quality of life for some people (Schroots, 1996). Another famed theory by Ericksons' psychosocial theory (1959) explains old age as exemplified by integrity versus despair. In this stage, there is a question of existentialism of the self. Erikson believed that the last stage involves much of reflection of past life. As older people, some can look back with a feeling of integrity; a contentment and fulfilment, having led a meaningful life and did valuable contribution to the society. Others may have a sense of despair during this stage, reflecting upon their experiences and failures, feel guilt about past, or feel that they did not accomplish their life goals, they become dissatisfied with life. Dissatisfaction and despair in life gives rise to many psychiatric and psychological problems. Depression, anxiety and loneliness become very common when the ageing result in despair from life. "Empty Nest" is an important aspect of ageing. In early phase of life whole family lives together. As the children grow they move away from their parental nest for further education and career and then get settled with their own families. Parents stay alone with their companion. They want their near and dear ones around. The situation gets worse when they lose their spouses. They already suffer from the biological changes and deterioration in their body which worsen by the addition of theses environmental and emotional factors. This fatal combination gives rise to various psychiatric and psychological issues. The adverse conditions of physical and mental health can influence the elderly' sense of life satisfaction (Pinto, Fontaine, & Neri, 2016).

Tornstam (1989) suggested that the process of living into old age that is human ageing envisages a general potential towards gerotranscendence: that is a shift in metaperspective from a materialistic and rational vision towards a more cosmic and transcendent vision. This is normally followed by an increase in life satisfaction. So, there is a need to understand the basic requirements of elderly. This phase of ageing has become much more a social phenomenon rather than merely a being a biological one. They surrender to the huge emotional burden. Their frail shoulders which once were the strong foundation of a family start trembling and can in some cases culminate in suicide. A small step towards understanding the elderly can prevent a big step like suicide.

Changes in Old Age

Changes in old age depends upon various factors like genetic, individual's physical and social environment like their home, community, the individual's personal characteristics, sex, socioeconomic status and the ethnicity. These factors start influencing the ageing process at an early stage. The way they are brought up in their childhood and their own characteristics have lasting effects on how they age. These changes in old age can be either positive or negative. Negatives changes can result in unhealthy ageing followed mainly by negative thoughts and poor physical symptoms and can be a significant cause of suicide. These are the changes that take place in the process of ageing.

Physiological/medical changes. There is a slow decline in the overall functioning of the body system. Furthermore, as people age, they are more likely to experience several changes at the same time (WHO, 2015). Multiple physical diseases were linked to increased risks of suicide in older adults. Elevated risks of suicide were identified for cancers, lymphomas, epilepsy, cerebrovascular diseases, heart diseases, chronic obstructive pulmonary disorders (COPD), gastrointestinal disease, liver disease, arthritis, osteoporosis, prostate disorders and spinal fracture (Erlangsen, Stenager, & Conwell, 2015). Functional disability, specific physical illnesses was shown to be associated with suicidal behaviour in older adults and (Fässberg et al., 2016). Studies reported on the role of noncoding microribonucleic acid in moderating or mediating synaptic plasticity, stress reactions, serotoninergic function and major affective disorders, but little is yet known of the direct role of microribonucleic acid in mediating risk for suicide (Serafini et al., 2012). Elderly suicide attempters with diagnosable depressive disorder showed more subcortical grey matter hyperintensities with a trend towards having more periventricular signals on Imaging studies (Ahearn et al., 2001).

Psychological/emotional changes. Mental health and emotional well-being are as important in older age as at any other stage of life. In fact, at this stage these emotions become much stronger than other stages. They become more sensitive to criticism, become emotionally week and dependent. However, there are some factors like lack of economic security, loneliness, loss of loved ones and limited

social interactions that adversely affect ageing. A study reported that majority of older persons who commit suicide are those who have lost their life partner. Old men experience the highest increase in suicide risk immediately after the loss compared to middle-aged men who are still married. Gender also plays a role in deciding the amount of time required to overcome a sad situation. Old men seem to suffer more from the loss and need longer time to recover than women. Although a small proportion of oldest old who commit suicide have experienced a recent bereavement, there is a significant increase in the suicide risk during the first year after bereavement, especially for men (Erlangsen, Jeune, Bille-Brahe, & Vaupel, 2004).

Neuropsychological changes. The pattern of the way the brain works differs from young age to old age. The capacity deteriorates not only physically but mentally too. There are various neuropsychological changes that take place in ageing such as the slow decline in information-processing speed, dual task, task shifting, encoding, storage and retrieval of memory, deterioration in intellectual capacity. The old person finds it difficult to remember names and location. The psychomotor activity becomes very slow and they take more than usual time to complete a particular task. Dementia and Alzheimer's disease which is a neurodegenerative disease hinders their normal functioning significantly. A study by Erlangsen, Zarit, and Conwell (2008) has shown that dementia was associated with an elevated risk of suicide for older adults. Those who are aged 70 or older with dementia have a threefold higher risk than persons with no dementia.

Social changes. Old age often leads to decrease in social activities and interaction. They prefer to stay within a very closely knit environment, with family members, close relatives and very close friends. Many a times the youth find it very uninteresting to spend time with their elderly. This gives the elderly a feeling of being unwanted. A feeling of loneliness and sadness gradually sets in. Loneliness is highly prevalent among older persons with depressive symptoms (Van Beljouw et al., 2014). Community-based studies have identified a variety of risk factors for loneliness/isolation including widowhood, no (surviving) children, living alone, deteriorating health and life events. Having a confident attitude has been identified as a protective factor for loneliness (Grenade & Boldy, 2008). Certain situational factors heighten the risk for increased loneliness. These include low socioeconomic status, marital discord, infrequent contact with friends and family, few social roles, lack of participation in voluntary organizations, physical health symptoms and physical limitations (Hawkley et al., 2008; Savikko, Koyanagi, Tyrovolas, & Haro, 2005). Apart from this, loss of loved ones, separation and retirement are also the vulnerable factors causing isolation and depression in old age. Retirement is the phase which is inescapable. One person can see retirement as a phase of relaxation and freedom from responsibility and other can take it as stress and threat to financial condition and dependency on others. Limited social involvement is also significant contributor. A systematic review of studies has shown that in industrialized countries, limited social connectedness is associated with suicidal ideation, non-fatal suicidal behaviour and suicide in later life (Fässberg et al., 2012).

Sexual changes. There are various medical conditions and psychological factors that hinder the sexual life of the old person. A study found that sexual pleasure and the need for intimacy continue to be important for older women, but that changing sexual abilities and sexual health needs, such as the reduction of sexual desire, as well as increased painful intercourse due to menopause-associated vaginal drying, were persistent barriers to sexual fulfilment and satisfaction (Taylor et al., 2016). Apart from this, declining sexual interests, lack of energy, erectile dysfunction, death of the spouse are some of the common causes of decreased sexual activity. Cultural and social factors contribute significantly to these changes. Sexual activity in old age is perceived as a social stigma in Indian society. In Indian culture, sex in later life is a taboo and a shameful act. It is a kind of suppressing id and over-powering super ego. Old people suppress their desires and avoid talking about their sexual life because of this social stigma.

Risk Factors

Suicide is an adverse clinical outcome driven by complex bio-psychosocial risk factors (WHO, 2002). According to the World Health Organization, older adults, being the fastest-growing population segment worldwide, are at greater risk for suicide than any other age group (WHO, 1999). This age group is more vulnerable to the changes and losses. These losses can make an old person physically weak, economically poor, socially dependent, humiliated or psychologically harmed. There are some risk factors that can be a significant cause of suicide in ageing:

Life Events Life events can be positive or negative. Negative life events are often sudden and dramatic incidents that have the potential to significantly change one's social world. The older people become more sensitive to these life changes. Illness or injury, retirement, death of spouse, unemployment, death of an adult child, loosing friends can be a significant life event for older population. Stressful life events have detrimental effects on physical and mental health (Cohen, Janicki-Deverts, & Miller, 2007; Pearlin, Schieman, Fazio, & Meersman, 2005; Thoits, 2006). Studies have shown that dysfunctional coping is associated positively with suicide ideation. Thus, problem and emotion focused coping appear to be adaptive, whereas dysfunctional coping appears to be somewhat less related to resilience to suicidal ideation among community-dwelling older adults (Marty, Segal, & Coolidge, 2010).

Divorce/Widowed With ageing a person leaves many people and relationships behind. The relation who mostly lives along is the spouse. Sometimes they also leave or are left because of divorce. Divorced old people can think in two ways; either they are better alone or regret how did they end up alone. There is a fear in old people that how they will live this independent life. This results in anxiety and depression. Men who are widowed or divorced, or unmarried are reported to be at increased risk of suicide (Fukuchi et al., 2013). In recently married and divorced people, the increase in suicide risk depended on age but the risk was higher in older

people (Roškar et al., 2011). Negative partner interactions were significantly associated with increased likelihood of depression, anxiety and suicidal ideation, while positive partner interactions were significantly and inversely related to anxiety and suicidal ideation. Higher levels of social integration were significantly associated with lower odds for depression (Santini, Koyanagi, Tyrovolas, & Haro, 2015).

Lack of Environmental Support Social and family relationships are a core element of quality of life for seniors and these relationships have been ranked second, next to health, as the most important area of life. Several related concepts—reduced social contact, being alone, isolation and feelings of loneliness—have all been associated with a reduced quality of life in older people. Social isolation and loneliness have also been associated with a number of negative outcomes such as poor health, maladaptive behaviour and depressed mood. Higher levels of loneliness have also been associated with increased likelihood of institutionalization (Health Quality Ontario, 2008). A study showed that depression, perceived social support and disability were significant predictors of suicidal ideation. In terms of social support, less perceived social support from family members was related to higher levels of suicidal ideation. The associations between various categories of disability and suicidal ideation disappeared after controlling for depression. The effect of depression on the relationship between disability and suicidal ideation revealed that depression was either a complete (disability related to cognition, self-care, getting along with others, and life activities) or partial (disability related to participation) mediator (Park et al., 2014).

Psychopathology A study reported elevated mortality risk of suicide for both men and women aged 50 years and over diagnosed with schizophrenia (Erlangsen, Eaton, Mortensen, & Conwell, 2012). Suicide risk peaks in periods immediately after admission and discharge. The risk is particularly high in persons with affective disorders and in persons with short hospital treatment. Affective disorders have the strongest impact on suicide risk in terms of its effect size and population attributable risk; and suicide risk associated with affective and schizophrenia spectrum disorders declines quickly after treatment and recovery, while the risk associated with substance abuse disorders declines relatively slower (Qin & Nordentoft, 2005). Evidence indicates that management of depression can reduce the suicidal behaviour in elderly (Draper, 2014).

Personality Traits Apart from all the risk factors personality traits were found to have significant impact on ageing and suicide. Anxious temperament plays a strong role in predicting suicide attempts in the presence and absence of diagnosable mental disorders. The irritable and the depressive temperaments are additional risks in people with mental disorders. The hyperthymic trait “having self-confidence” is strongly protective of suicide attempts. However “liking to be the boss”, “getting into heated arguments”, and “the right and privilege to do as I please” are hyperthymic risk traits for suicide attempts reflecting the “dark side” of the hyperthymic temperament (Karam et al., 2015). Evidence also suggests that adverse childhood experiences have persistent and multifaceted effects on suicidality in late life. The constructs like biological factors (neurological, gene-environmental), psychiatric and health functioning, and psychosocial development (cognitive biases, coping

resources, interpersonal deficits) and the interaction of these constructs with late-life stressors give rise to suicidality in older adulthood (Sachs-Ericsson, Rushing, Stanley, & Sheffler, 2016). Depressive personality disorder (Segal, Gottschling, Marty, Meyer, & Coolidge, 2015) and Elevated openness to experience and neuroticism (Heisel et al., 2006) strongly related to increased suicidal thinking among older adults.

Old Age Abuse Elder abuse includes psychological, physical, and sexual abuse, neglect (caregiver neglect and self-neglect), and financial exploitation. At least 1 in 10 older adults suffers some form of elder abuse, and many in repeated forms (Government Accountability Office, 2011). Evidence suggests that prevalence of financial exploitation is almost three times higher and psychological abuse is two times higher in African American older adults than White older adults (Beach, Schulz, Castle, & Rosen, 2010). Dong, Simon, Rajan, and Evans (2011) found that lower global cognitive function level, Mini-Mental State Examination (MMSE), episodic memory and perceptual speeds are associated with increased risks of elder abuse. The WHO has declared that elder abuse is a violation of one of the most basic fundamental rights of a human being to be safe and free of violence (WHO, 2009). Elder mistreatment is a stressful life event that may lead to psychological distress in the victims. Several cross-sectional studies have shown that older adults who were mistreated had higher levels of psychological distress than those who had no such experience (Comijs, Penninx, Knipscheer, & Van Tilburg, 1999; Mouton, 2003). Clinical studies suggest other effects of elder mistreatment, including feelings of learned helplessness, alienation, guilt, shame, fear, anxiety, denial and posttraumatic stress syndrome (Wolf, 2000).

Signs and Symptoms of Suicide in Old Age

There few sign and symptoms which can be an indicator of committing suicide

- Avoiding going out, prefer social isolation
- Crying a lot or being angry a lot with little issues
- Past suicidal attempts
- Loss of interest in things or activities that are usually found enjoyable
- Avoiding social interaction and gives less attention to the self-care,
- Breaking medical routine, non-compliance with medicine
- Experiencing or expecting a major life event
- Feeling hopeless and/or worthless about self
- Mostly found talking natively about life
- Preoccupation with death or a lack of concern about personal safety
- Talking about the property and will
- A very important indicator is an expression of suicidal thoughts
- Wants to get rid of physical and medical conditions.

Preventive Strategy for Suicide in Ageing

No single prevention strategy is likely to be working alone. A multifaceted, multi-pronged approach is required. Primary, secondary and tertiary preventions remain the most important part of management.

Primary Prevention This aims to prevent any incident, disease or injury before it ever occurs. This is done by preventing exposure to hazards that cause the incident, altering unhealthy/unsafe behaviours that can lead to the incident, disease or injury. This preventive strategy can be helpful in preventing suicide in geriatric population by providing information or spreading awareness about ageing and related factors and consequences through community curriculum, media, networking sites and mental health clinics. The aim should also be implemented broadly to prevent suicide related morbidity and mortality through reducing risk and enhancing protective factors. This awareness should include

- Promoting healthy life style and its long-term consequences. This can include healthy eating habit, yoga, exercise, meditation.
- Spreading awareness in society that suicide is not the last resort. It will not help the sufferer but will give life-long pain to their dear ones.
- Spreading awareness in the family about how common suicide can be in geriatric population. Creating healthy and positive family environment for elderly can decrease the probability.
- Preventing various causes that can lead to suicide; retirement related issues, healthy coping mechanism for inevitable situations.
- The community awareness will also help the young generation to help the elderly with the changes.
- Promote the importance of social interaction among society.

Secondary Prevention This aims to reduce the impact of a disease or injury that has already occurred. This is done by detecting and treating disease or injury as soon as possible to slow or stop its progress and preventing its reoccurrence.

- Early identification of the signs and symptoms of mental and physical illnesses in elderly and managing appropriately can prevent suicide.
- If there is an attempt of suicide then serious caution should be taken to avoid any further attempts and professional help must be sought for.
- Routine medical examinations, follow ups, compliance to medicine, routine physiotherapy can decrease the severity of the symptoms and related psychological consequences.
- Help individuals in early stages of dementia build coping strategies and reduce distress through psychotherapy and psychoeducational support groups. Memory training strategies help to optimize residual cognitive capabilities.

Tertiary Prevention This aims to soften the impact of an ongoing illness or injury that has lasting effects. This is done by helping people manage long term diseases/disabilities, and making them more functional and increasing the quality of life.

- Helping the elderly to fight with the existing symptoms. Providing family support and congenial family environment.
- Proper counselling sessions and therapeutic management can help the old people to cope with the adverse situations they are facing.
- Rehabilitation programs and chronic disease management programs for chronic illnesses like diabetes, arthritis, depression, etc. also forming groups of people suffering from same diseases so that they can share their experiences.
- Support groups that allow members who either suffered or saw people suffering (depression, suicidal attempts or ideation) to share strategies for living well.
- Teach behavioural and environmental strategies to caregivers to deal with behaviours such as aggression and wandering.

Recommendations

The demand for mental health practitioners with expertise in elderly care will increase many fold as the older population grows. There are few recommendations for how we can help this precious geriatric population to stop from ending their lives

- Psychotherapy, commonly known as "talk therapy" can effectively reduce suicide risk. Cognitive behaviour therapy (CBT) is one of the form of psychotherapy effective in dealing with the negative schema, automatic negative thoughts, anxiety and help people learn new ways of coping and dealing with stressful experiences specially when thoughts of suicide arises. In a study, 16-session course of Interpersonal Psychotherapy (IPT) adapted for older adults at risk for suicide and result showed that the participants experienced significant reductions in suicide ideation, death ideation and depressive symptom severity, and significant improvement in perceived meaning in life, social adjustment, perceived social support and other psychological well-being variables. There was an enhanced psychological well-being and reduced symptoms of depression and suicide ideation over the course of IPT adapted for older adults at risk for suicide (Heisel, Talbot, King, Tu, & Duberstein, 2015).
- Behavioural training methods, such as biofeedback, bladder training, goal setting and self-monitoring, to reduce incontinence. Incontinence has significant implications for the independence of older adults. It is one of the commonest reasons why families admit an elder to a nursing home.
- Insomnia is prevalent among elders. Cognitive Behavioural Therapy, sleep restriction and stimulus control, and sleep hygiene instruction are helpful.
- Help elders to manage multiple chronic medical conditions that accompany ageing, such as heart disease, stroke and arthritis. Prevent further disability and hospitalization through treatment adherence and behavioural interventions, rehabilitation including physical activity, nutrition and stress reduction techniques.

- Suicidal thoughts or ideation are often a symptom of depression and should for all time be taken seriously. Symptoms of depression in older adults are often overlooked because they are inaccurately assumed to be a normal part of ageing or may coincide with medical illnesses or life events that commonly occur as people age. Identify and treat both major depressive disorder and subclinical forms of depression.
- If the family members are noticing warning signs of suicide in elderly then they should clearly talk about suicide, about their worries and also they can go for professional help.
- Provide supporting environment enable elderly to do what is important to them regardless of losses in ability. A study by Savikko, Routasalo, Tilvis, Strandberg and Pitkala (2010), reported several common favourable processes and mediating factors were identified in the psychosocial group rehabilitation intervention that led to alleviation of loneliness among older people. Doing things together and sharing experiences with their peers inspired lively discussions, created a feeling of togetherness and led to participants' empowerment and increased self-esteem.
- Awareness in elderly about professional helps and online suicide helpline can prevent depression and suicidal ideation.
- Promoting and implementing effective clinical assessment and professional practices for elderly risk for suicidal behaviour.
- Focusing on healthy coping mechanism. As people age, they experience some changes or decline in health status and coping will become an important tool to move on with life changes (Birkeland & Natvig 2009).
- Awareness towards good old age homes, in case of family discord and immoral attitude towards elderly. The old person bears all the humiliation as they think that there is no other way out and lastly they end their lives.
- The family should do prior planning of retirement of their elderly so that they do not feel worthless and lonely.
- Family caregivers can be the best care providers to the elderly. Although the role of caregiving can be rewarding, it can also be quite stressful and taxing. Caregivers themselves may suffer from depression, anxiety, substance abuse, anger and stress-related health problems, including cardiovascular disease. Psychologists can help family members to better deal with the physical and emotional demands of caring for a physically or cognitively challenged elderly.
- A strong bond of emotional support by the family members at the time to spouse death which is a very crucial point for the elderly to adjust. Either the elderly will survive or they will scatter after the life event.
- More research and training in Geropsychology.
- Legislation to enhance the availability of and access to effective mental health services for elders. Barriers to effective management are financial repercussions, lack of parity between reimbursement of health versus mental health services, poor recognition and diagnosis of mental illness, lack of programs focusing on mental health, transportation; living in a rural area; and social stigma.

- Increase the coordination of mental and physical healthcare stemming from the often complex interplay of physical and mental health problems in elderly.
- Awareness about the interface between Physical and Mental health care is of paramount importance. Both are interdependent. For example, aged people with medical illness like cardiac disease have increased rates of depression compared those who are healthy. Also unmanaged depression in an elderly with heart disease adversely affects the outcome of the disease. Depression has a very strong negative impact on ability to function smoothly. The whole family becomes affected.

Promoting Positive Ageing

Accepting the fact that ageing is inevitable and facing the fear of getting older is the first step towards positive ageing. With some effort a person can eradicate the negative side of ageing by being physically active, healthy life style, social interaction, creating positive feeling about self, being flexible with the flow of life, minimizes life stress and regular medical follow ups. Adapting healthy ageing can take away the adverse effects of ageing and can prevent suicide. A study reported that having a "meaning in life" may play an important role in promoting mental health and well-being and potentially conferring resiliency to contemplations of suicide in later life (Heisel & Flett, 2016). Control is another relevant element to late life suicide in terms of motivational theory of lifespan development. This theory posits that opportunities to exert control over important aspects of one's life diminish in late life as a result of declines in physical functioning and other factors, and that successful ageing is associated with adaptive regulation of this developmental change. Individuals who do not adapt to developmental changes by altering their strategies for exerting control will be at risk for suicidal behaviour in late life (Fiske & O'Riley, 2016). Well-being and a positive view of ageing are major protective factors against the effects of age on the organism (Lupien & Wan, 2004). There are multi-domain predictors of successful ageing, among which are intelligence, personality and motivational psychological characteristics (Fernandez-Ballesteros et al., 2010).

This phase of ageing should be shifted from the chase of wealth to the maintenance of health. This phase is away from the phase of career tension, growth, relationships and responsibility. An old person who is done with all his/her responsibility demands very few things from their family members. Family time and respect are the most important things that give hope and a sense of happiness to them. They tend to be less open to lifestyle changes, they may be unwilling to adopt new habits or do things. They can show frustration with family member's well-intentioned support. Take this as responsibility and try to treat elderly as a child because they did the same for you.

Conclusion

Ageing is a process that cannot be avoided, an inescapable truth, and a slow process. This process may or may not be affected with diseases or disabilities but with time, it will eventually lead to death. Since death is an inevitable part of life, it rather be in a natural way and not by suicide. It is a time to cope and fight. An elderly who may be thinking about suicide probably does not want to die, but some way they want their pain or suffering to go away. They want to be relieved of the suffering or they just want to be released or made free from all their worldly ties as on the surface, suicide seems to provide a truly fundamental escape from extreme suffering. Is it really so? This is the time when a community or family most needs to pull together to help one another. Old age should not be viewed negatively. Positive ageing needs to be promoted and more talked about. This phase should be welcomed as a phase of change like any other stage and not as an end stage. It is a person who will decide whether *"to live healthy old or to live ill old"*. To conclude, suicide in geriatric population should neither be the road to relief or to release. As has been explained in The Bhagvad Gita about the state of mind during dying and thus condemning suicide:

> *yam yam vapi smaran bhavam, tyajatyante kalevaram*
>
> *tam tam evaiti kaunteya, sada tad-bhava-bhavitah*
>
> *(Whatever state of being one remembers when he quits his body, that state he will attain without fail).*
>
> The Bhagvad Gita, 2016b

References

Ahearn, E. P., Jamison, K. R., Steffens, D. C., Cassidy, F., Provenzale, J. M., Lehman, A., …, Krishnan, K. R. (2001). MRI correlates of suicide attempt history in unipolar depression. *Biological Psychiatry, 50*(4), 266–270.

Beach, S. R., Schulz, R., Castle, N. G., & Rosen, J. (2010). Financial exploitation and psychological mistreatment among older adults: Differences between African Americans and non-African Americans in a population-based survey. *Gerontologist, 50*(6), 744–757.

Bhagavad Gita. (2016a). Version 2: Chapter 13. Retrieved from http://sanskrit.app.arat.us/?tmp=verses&chapter=2.

Bhagavad Gita. (2016b). Chapter 8: Text 6: Attaining the supreme. Retrieved from http://www.asitis.com/8/6.html.

Birkeland, A., & Natvig, G. K. (2009). Coping with ageing and failing health: a qualitative study among elderly living alone. *International Journal of Nursing Practice, 15*(4), 257–64.

Cohen, S., Janicki-Deverts, D., & Miller, G. E. (2007). Psychological stress and disease. *JAMA: The Journal of the American Medical Association, 298*(14), 1685–1687.

Comijs, H. C., Penninx, B. W., Knipscheer, K. P., & Van Tilburg, W. (1999). Psychological distress in victims of elder mistreatment: the effects of social support and coping. *Journal of Gerontology Series B: Psychological Science and Social Science, 54*(4), 240–245.

Conwell, Y., Duberstein, P. R., & Caine, E. D. (2002). Risk factors for suicide in later life. *Biological Psychiatry, 52*(3), 193–204.

Dong, X., Simon, M., Rajan, K., & Evans, D. A. (2011). Association of cognitive function and risk for elder abuse in a community-dwelling population. *Dementia and Geriatric Cognitive Disorders, 32*(3), 209–215.

Draper, B. M. (2014). Suicidal behaviour and suicide prevention in later life. *Maturitas, 79*(2), 179–183.

Erikson, E. H. (1959). *Childhood and society*. New York: Norton.

Erlangsen, A., Jeune, B., Bille-Brahe, U., & Vaupel, J. W. (2004). Loss of partner and suicide risks among oldest old: A population-based register study. *Age and Ageing, 33*(4), 378–383.

Erlangsen, A., Eaton, W. W., Mortensen, P. B., & Conwell, Y. (2012). Schizophrenia–A predictor of suicide during the second half of life? *Schizophrenia Research, 134*(2–3), 111–117.

Erlangsen, A., Stenager, E., & Conwell, Y. (2015). Physical diseases as predictors of suicide in older adults: A nationwide, register-based cohort study. *Social Psychiatry Psychiatric Epidemiology, 50*(9), 1427–1439.

Erlangsen, A., Vach, W., & Jeune, B. (2005). The effect of hospitalization with medical illnesses on the suicide risk in the oldest old: A population-based register study. *Journal of American Geriatric Society, 53*(5), 771–776.

Erlangsen, A., Zarit, S. H., & Conwell, Y. (2008). Hospital-diagnosed dementia and suicide: A longitudinal study using prospective, nationwide register data. *Amercian Journal of Geriatric Psychiatry, 16*(3), 220–228.

Fässberg, M. M., Cheung, G., Canetto, S. S., Erlangsen, A., Lapierre, S., Lindner, R., Draper, B., … Wærn, M. (2016). A systematic review of physical illness, functional disability, and suicidal behaviour among older adults. Aging *Mental Health, 20*(2), 166–194.

Fässberg, M. M., Van Orden, K. A., Duberstein, P., Erlangsen, A., Lapierre, S., Bodner, E., Canetto, … Waern, M. (2012). A systematic review of social factors and suicidal behaviour in older adulthood. *International Journal of Environment Research Public Health, 9*(3), 722–745.

Fässberg, M. M., Östling, S., Braam, A.W., Bäckman, K., Copeland, J. R., Fichter, M., Kivelä, S. L., … Waern, M. (2014). Functional disability and death wishes in older Europeans: Results from the EURODEP concerted action. *Journal of Social Psychiatry and Psychiatric Epidemiology, 49*(9), 1475–1482.

Fernández-Ballesteros, G. R., Zamarrón Casinello, M. D., López Bravo, M. D., Molina Martínez, M. Á., Díez Nicolás, J., Montero López, P., & Schettini del Moral, R. (2010). Successful aging: Criteria and predictors. *Psicothema, 22*(4), 641–647.

Fiske, A., & O'Riley, A. A. (2016). Toward an understanding of late life suicidal behaviour: The role of lifespan developmental theory. *Aging Mental Health, 20*(2), 123–130.

Fukuchi, N., Kakizaki, M., Sugawara, Y., Tanji, F., Watanabe, I., Fukao, A., & Tsuji I. (2013). Association of marital status with the incidence of suicide: A population-based Cohort Study in Japan (Miyagi cohort study). *Journal of Affective Disorder, 150*(3), 879–885.

Government Accountability Office. (2011). *Elder justice: Stronger federal leadership could enhance national response to elder abuse.* Retrieved from http://aging.senate.gov/events/hr230kb2.pdf.

Grenade, L., & Boldy, D. (2008). Social isolation and loneliness among older people: Issues and future challenges in community and residential settings. *Australian Health Review, 32*(3), 468–478.

Hall, G. S. (1922). *Senescence: The last half of life*. New York, NY: D. Appleton & Co.

Hawkley, L. C., Hughes, M. E., Waite, L. J., Masi, C. M., Thisted, R. A., & Cacioppo, J. T. (2008). From social structural factors to perceptions of relationship quality and loneliness: The Chicago health, aging, and social relations study. *Journal of Gerontology, Series B, Psychological Science and Social Science, 63*(6), 375–384.

Health Quality Ontario. (2008). Social isolation in community-dwelling seniors: An evidence-based analysis. *Ontario Health Technology Assessment Series, 8*(5), 1–49.

Heisel, M. J., & Flett, G. L. (2016). Does recognition of meaning in Life confer resiliency to suicide ideation among community-residing older adults? A longitudinal investigation. *American Journal of Geriatric Psychiatry, 4*(6), 455–466.

Heisel, M. J., Duberstein, P. R., Conner, K. R., Franus, N., Beckman, A., & Conwell, Y. (2006). Personality and reports of suicide ideation among depressed adults 50 years of age or older. *Journal of Affective Disorder, 90*(2–3), 175–180.

Heisel, M. J., Talbot, N. L., King, D. A., Tu, X. M., & Duberstein, P. R. (2015). Adapting interpersonal psychotherapy for older adults at risk for suicide. *American Journal of Geriatric Psychiatry, 23*(1), 87–98.

Heun, R., & Hein, S. (2005). Risk factors of major depression in the elderly. *European Psychiatry, 20*(3), 199–204.

Karam, E. G., Itani, L., Fayyad, J., Hantouche, E., Karam, A., Mneimneh, Z., …, Rihmer, Z. (2015). Temperament and suicide: A national study. *Journal of Affective Disorder, 15*(184), 123–128.

Koenig, H. G., Cohen, H. J., Blazer, D. G., Kudler, H. S., Krishnan, K. R., & Sibert, T. E. (1995). Religious coping and cognitive symptoms of depression in elderly medical patients. *Psychosomatics, 36*(4), 369–375.

Lupien, S. J., & Wan, N. (2004). Successful ageing: From cell to self. *Philosophical Transactions of the Royal Society B: Biological Sciences, 359*(1449), 1413–1426.

Marty, M. A., Segal, D. L., & Coolidge, F. L. (2010). Relationships among dispositional coping strategies, suicidal ideation, and protective factors against suicide in older adults. *Aging Mental Health, 14*(8), 1015–1023.

Mouton, C. P. (2003). Intimate partner violence and health status among older women. Psychological well-being among older adults: Exploring the role of psychosocial resources and deficits. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences, 66B*(2), 217–229.

National Crime Record Bureau. (2014). Accidental deaths & suicide in India. Ministry of home affairs, Government of India (p. 192). Retrieved from http://ncrb.nic.in/StatPublications/ADSI/ADSI2014/chapter-2%20suicides.pdf and http://ncrb.nic.in/StatPublications/ADSI/ADSI2014/adsi-2014%20full%20report.pdf.

Park, J. I., Han, M. I., Kim, M. S., Yoon, M. S., Ko, S. H., Cho, H. C., & Chung, Y. C. (2014). Predictors of suicidal ideation in older individuals receiving home-care services. *International Journal of Geriatric Psychiatry, 29*(4), 367–376.

Pearlin, L. I., Schieman, S., Fazio, E. M., & Meersman, S. C. (2005). Stress, health, and the life course: Some conceptual perspectives. *Journal of Health Social Behaviour, 46*(2), 205–219.

Pinto, J. M., Fontaine, A. M., & Neri, A. L. (2016). The influence of physical and mental health on life satisfaction is mediated by self-rated health: A study with Brazilian elderly. *Archieves of Gerontology Geriatric, 65,* 104–110.

Pompili, M., Gonda, X., Serafini, G., Innamorati, M., Sher, L., Amore, M., …, Girardi, P. (2013). Epidemiology of suicide in bipolar disorders: A systematic review of the literature. *Bipolar Disorder, 15*(5), 457–490.

Pompili, M., Rihmer, Z., & Akiskal, H. (2012). Temperaments mediate suicide risk and psychopathology among patients with bipolar disorders. *Comprehensive Psychiatry, 53*(3), 280–285.

Qin, P., & Nordentoft, M. (2005). Suicide risk in relation to psychiatric hospitalization: Evidence based on longitudinal registers. *Archives of General Psychiatry, 62*(4), 427–432.

Roškar, S., Podlesek, A., Kuzmanić, M., Demšar, L. O., Zaletel, M., & Marušič, A. (2011). Suicide risk and its relationship to change in marital status. *Crisis, 32*(1), 24–30.

Sachs-Ericsson, N. J., Rushing, N. C., Stanley, I. H., & Sheffler, J. (2016). In my end is my beginning: Developmental trajectories of adverse childhood experiences to late-life suicide. *Aging and Mental Health, 20*(2), 139–165.

Santini, Z. I., Koyanagi, A., Tyrovolas, S., & Haro, J. M. (2015). The association of relationship quality and social networks with depression, anxiety, and suicidal ideation among older

married adults: Findings from a cross-sectional analysis of the Irish Longitudinal Study on Ageing (TILDA). *Journal of Affective Disorder, 179,* 134–141.

Savikko, N., Routasalo, P., Tilvis, R. S., Strandberg, T. E., & Pitkälä, K. H. (2005). Predictors and subjective causes of loneliness in an aged population. *Archives Gerontology Geriatric, 41*(3), 223–233.

Savikko, N., Routasalo, P., Tilvis, R., & Pitkälä, K. (2010). Psychosocial group rehabilitation for lonely older people: Favourable processes and mediating factors of the intervention leading to alleviated loneliness. *International Journal of Older People Nursing, 5*(1), 16–24.

Schroots, J. J. F. (1996). Theoretical developments in the psychology of aging. *The Gerontologist, 36*(6), 742–748.

Segal, D. L., Gottschling, J., Marty, M., Meyer, W. J., & Coolidge, F. L. (2015). Relationships among depressive, passive-aggressive, sadistic and self-defeating personality disorder features with suicidal ideation and reasons for living among older adults. *Aging Mental Health, 19*(12), 1071–1077.

Serafini, G., Pompili, M., Innamorati, M., Giordano, G., Montebovi, F., Sher, L., …, Girardi, P. (2012). The role of microRNAs in synaptic plasticity, major affective disorders and suicidal behaviour. *Neuroscience Research, 73*(3), 179–190.

Taylor, T. N., Munoz-Plaza, C. E., Goparaju, L., Martinez, O., Holman, S., Minkoff, H. L., …, Wilson, T. E. (2016). The pleasure is better as I've gotten older: Sexual health, sexuality, and sexual risk behaviours among older women living with HIV. *Archives of Sexual Behaviour.* doi:10.1007/s10508-016-0751-1

Thoits, P. A. (2006). Personal agency in the stress process. *Journal of Health and Social Behaviour, 47*(4), 309–323.

Tornstam, L. (1989). Gero-transcendence: A reformulation of the disengagement theory. *Aging Clinical and Experimental Research, 1*(1), 55–63.

Tukol, Justice T. K. (1976). *Sallekhanā is not suicide* (1st ed). Ahmedabad: L.D. Institute of Indology. Retrieved from http://www.jainworld.com/education/seniors/senles15.htm.

United Nations Population Division (UN). (2011). World Population Prospects: The 2010 Revision (New York: United Nations, 2011). In Population Reference Bureau. *Today's research on aging*. Retrieved from http://www.prb.org/pdf12/TodaysResearchAging25.pdf.

Van Beljouw, I. M., van Exel, E., de Jong Gierveld, J., Comijs, H. C., Heerings, M., Stek, M. L., & van Marwijk, H. W. (2014). Being all alone makes me sad: Loneliness in older adults with depressive symptoms. *International Psychogeriatrics, 26*(9), 1541–1551.

World Health Organization, WHO. (2016). *Mental health and older adults*. Retrieved from http://www.who.int/mediacentre/factsheets/fs381/en/.

World Health Organization, WHO. (2015). *Aging and health*. Retrieved from http://www.who.int/mediacentre/factsheets/fs404/en/.

Wolf, R. (2000). Introduction: The nature and scope of elder abuse. *Generations, 24*(2), 6–11.

World Health Organization (2009). *World report on violence and health*. Retrieved from http://www.who.int/violence_injury_prevention/violence/world_report/en/summary_en/.

World Health Organization. (1999). *Figures and facts about suicide*. Geneva, Switzerland: Department of Mental Health, World Health Organization (pp. 1–122). Retrieved from http://whqlibdoc.who.int/hq/1999/WHO_MNH_MBD_99.1.pdf.

World Health Organization. (2002). *The World Health Report 2002: Reducing risks, promoting healthy life*. Geneva, Switzerland: World Health Organization Publication (pp. 1–230). Retrieved from http://www.who.int/whr/2002/en/whr02_en.pdf?ua=1.

Chapter 17
Substance Abuse and Suicidal Behaviour

Vimala Veeraraghavan

According to World Health Organization (WHO) (2015), United Nations Office on Drugs and Crime publication, drug use prevalence continues to be stable around the world. It is estimated that a total of 246 million people—slightly over 5% of those aged 15–64 years worldwide—used an illicit drug in 2013. Some 27 million people are problem drug users, almost half of whom are people who inject drugs (PWID). An estimated 1.65 million of people who inject drugs were living with HIV in 2013. Men are three times more likely than women to use cannabis, cocaine and amphetamines, while women are more likely to misuse prescription opioids and tranquillizers.

According to WHO updates on management of substance abuse, the following to be noted:

- Harmful use of alcohol results in 3.3 million deaths each year;
- At least 15.3 million persons have drug use disorders;
- Injecting drug use reported in 148 countries, of which 120 report HIV infection among the injecting drug population.

Recent estimates according to United Nations World Drug Report (2015) stating the statistics and trends mention that 155–250 million people of the world's population aged 15–64 had used illicit substances at least once in the past year. According to the report such illicit drug use has caused significant social and health problems. The number of deaths due to substance use/abuse reported above appears considerable and these fall in the category of unnatural deaths. To this, if the number of deaths due to suicide (which again is an unnatural death) is added, the total unnatural deaths excluding many other deaths such as accidental deaths become phenomenal.

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Two questions arise: (i) Does substance abuse lead to suicide? and (ii) Do substances such as dangerous drugs are taken to commit suicide? In latter category, there is an intention to commit suicide (may be for other reasons) and drugs are only the means. Sometimes drugs as causative factor for suicide and drugs as the method to suicide are interlinked.

According to the Drug Abuse Warning Network, (DAWN), SAMHSA (2015), the data for 2011 showed an estimated 228,366 'emergency department' (ED) visits for drug-related suicide attempts. Of these, nearly one lakh patients were middle aged (ages 35–64).

Substance Abuse

Chopra (2015) in her article 'Drug abuse and Addiction in India' refers to 'drug abuse', as the habit of regular intake of illegal drugs characterized by misuse of drugs. According to the author, there is a thin line between drug abuse and addiction. It is well known that substance/drug abuse and addiction is a worldwide phenomenon. According to the World Drug Report, drug use prevalence rate continues to be stable around the world (UNODC, 2015). The data showed that there were three times more men than women who used cannabis, cocaine and amphetamines, where as in the case of women they misused more of prescription drugs, prescription opioids and tranquillizers.

According to 'Join together staff' of the Researchers Release First Report on Worldwide Addiction Statistics (June, 2015), about 240 million people around the world are dependent on alcohol, and about 15 million people use injection drugs such as heroin. According to lead researcher Dr. Linda Gowing (2015) of the University of Adelaide's School of Medical Sciences in Australia [as published by the National Public Radio (NPR)], alcohol takes a greater toll on 'productive years of life lost' than does tobacco. That is, people appear to die not only at a younger age, but also have poor health over a long period of time, and alcohol affects their work relationships and reduces their quality of life. The UNODC (2015) executive director had also stated that even though the drug use around the world is stable, only one out of six problem drug users have access to treatment. About drug use and its impact on health, the UNODC chief pointed out that an estimated 187,100 drug-related deaths had taken place in 2013, which is unacceptably a high number (UNODC, 2015). The report also showed that there were more drug users suffering from cannabis use disorders as is seen in the high proportion of persons seeking first-time treatment in several regions of the world (UNODC, 2015). According to this report, there is also a greater demand for amphetamine type stimulants (ATS), which include methamphetamine and 3,4-methylenedioxy-methamphetsmine (MDMA) drug called 'Ecstasy'. It is a synthetic drug that alters mood and perception of the individual who ingests it. There is also an increasing demand for new psychoactive substances (NPS) known as 'legal highs'.

The Times of India, Jaipur edition dated 2 June (2016) carried a heading 'US death rate goes up first time in 10 years'. In this, it was mentioned that the increase in death rate is partly due to people dying from drug over dose, suicide and Alzheimer disease (Times of India, Jaipur edition, 2016). The official Indian data from the Ministry of Social Justice and Empowerment has an estimated 3.4 million drug abuse victims. This number excludes alcoholics, who figure at around 11 million in the country (Hindustan Times, 2014).

With the 'Golden Crescent' in the northwest part of India and the 'Golden Triangle' in the northeast, drugs are not only easily available in India, but India is also highly vulnerable to drug trade, drug abuse and addiction.

Suicide and Suicidal Behaviour

The word 'suicide' was first used by the English author, Sir Thomas Browne in 1642, in his treatise 'Religio Medici'. The word originated from SUI (of oneself) and CAEDES (murder). Suicide is defined as the act of deliberately killing oneself. According to psychoanalytical point of view, suicide is aggression turned towards self. Suicide is the third leading cause of death among young adults worldwide. According to the World Health Organization (2015), suicide is the 10th leading cause of death in the USA. The available data show that in 2014, there were 42,773 deaths by suicide in the USA. While suicide is the 10th leading cause of death, homicide ranks the 17th cause of death. There is one death by suicide in USA every 12.3 min (American Foundation for Suicide Prevention, 2014) Also the US statistics (NIMH, 2015) show one in 100,000 children between 10 and 14 years of age and 7 out of 100,000 youngsters between the ages of 15–19 commit suicide. As for the elderly persons, there is one suicide for every four attempted suicides among the elderly. In general, there is one suicide for every 25 suicide attempts.

Gender wise, suicide among males is four times higher than among females. The more commonly used method to commit suicide in the USA is the firearm perhaps due to the fact that getting a licence to possess a gun is easier in the USA and hence the easy accessibility. Use of firearm to commit suicide is more among males whereas poisoning seems to be a more common method used by females for suicide.

In India, 135,000 (17% of the suicide worldwide) persons commit suicide (Registrar General of India, GOI, 2012). It ranks 43rd in descending order of rates of suicide. And this rate greatly increased among youth in India, who are considered being at the highest risk for committing suicide. Statistics reveal that at least 25,426 people committed suicide due to drug abuse and addiction-related problems in the last 10 years across India, i.e. an average of 2542 suicides every year or 211 per month or seven per day. The number of suicides has been thus steadily increasing since 2004, with an increase of 149% from 2004 to 2013. (Hindustan Times, November 5, 2014). The suicide rate in India is comparable to that of Australia and the USA (Radhakrishnan & Andrade, 2012). According to them, there is an

increasing rate of suicide in the recent decades which appears consistent with the global trend.

Data on suicide in India are available from the National Crime Records Bureau (NCRB; Ministry of Home Affairs). The suicide rates in India rose from 6.3 per 100,000 in 1978 to 8.9 per 100,000 in 1990, an increase of 41.3% during the decade from 1980 to 1990 and a compound growth rate of 4.1% per year (Chagas, Gaunekar, Patel, Kukalekar & Fernandes, 2003). More recent data, however, reveal a different picture. The rate of suicide showed a declining trend from the year 1999 to 2002 and a mixed trend during 2003–2006, followed by an increasing trend from 2006 to 2010. During 2009, the rate was 10.9 per 100,000 population. This represented 1.7% increase in suicides since 2008. In the most recent National Crime Research Bureau report, the rate in 2010 rose to 11.4 per 100,000 population, an increase of 5.9% in the number of suicides (NCRB, 2010).

In Western literature traditionally, risk factors for suicide were associated with younger age group persons (15–24 years), females, low educational level, unemployment and socio-economic deprivation. Although suicide rates were commonly highest among older adult males, rates among young people have been increasing over the years. This young age group (15–29 years) accounted for the largest proportion (34.5%) of suicides followed by those in the age group of 30–44 years (34.2%). Two-thirds of women who completed suicide were less than 25 years of age (NCRB, 2009) (cited by Radhakrishnan & Andrade, 2012).

While the number of suicides is high, many suicides go unreported or may be classified as accidents. It is noteworthy that the number of deaths due to accidents far exceeds death due to suicide as given in Table 17.1 'deaths due to accidents and suicides (2009–2014)' (see Table 17.1). This trend is also seen in attempted suicides. In one study, the mean age of attempters was 25.3 years. Suicidal ideation was also more common in the 16–45 years age group in a study of suicidal ideation in a general hospital setting (Ray, 2004).

Youth is a period of heightened risk of suicide and according to Ray (2004), suicide is a leading cause of death among young people in India. In his study which evaluated the cause of death among those aged 10–19 years, in a rural population of

Table 17.1 Deaths due to accidents and suicides 2009–2014

Deaths due to accidents				Deaths due to suicide		
Year	Male (lakhs)	Female (lakhs)	Total (lakhs)	Male (lakhs)	Female (lakhs)	Total (lakhs)
2009	2.76	0.80	3.57	0.81	0.46	1.27
2010	2.98	0.86	3.84	0.87	0.48	1.35
2011	3.02	0.88	3.91	0.88	0.48	1.26
2012	3.06	0.89	3.95	0.88	0.47	1.35
2013	3.13	0.88	4.00	0.91	0.44	1.35
2014	3.55	0.97	4.52	0.89	0.42	1.31
1967			1.27			0.39

Source National Crime Research Bureau (2014)

108,000 in South India, suicide accounted for about a quarter of all deaths in males and between 50 and 75% of all deaths in females aged 10–19 years. According to this study, the suicide rate for girls was 148 per 100,000, and for boys, 58 per 100,000. Stating some of the causes for suicide among females, Samantary, Ray, Selvaraj, Prasad, and Chandiramani (1997), stated that not attending school or college, lack of opportunities for independent decision-making, premarital sex, physical abuse at home, being vulnerable to exploitation, sexual abuse and certain mental disorders. They also found that violence and psychological distress were independently associated with suicidal behaviour.

Selvaraj, Prasad, Ashok, and Appayya (1997) found higher incidence of suicide in men than in women, but certain others (e.g. Babu & Sengupta, 1997) reported the contrary. The male:female suicide ratio was 1:0.78 in India in 2008 and 2009. In children up to age 14 years, the ratio was 1:0.04, that is, almost equal between the sexes. In young men and women in 1991–1997, the ratio was 1:0.3, contrasting with the male preponderance in developed countries (Subodh, Benegal, Murthy, Girish, & Gururaj, 2008). In a more recent study by Kumar, Verma, Bhattacharya, and Rathore (2013), there were 2946 males to 2258 female committing suicide (The ratio comes to 1:0.76).

The number of deaths due to suicide is quite large despite the fact many suicides go unreported, and it is possible that many accidents (railways, motor car, etc) could be suicides. The National Crimes Records Bureau (2014) has given data for deaths due to suicide and accidental deaths. Table 17.1 presents the details.

According to the NCRB data given above, the number of accidental deaths and deaths due to suicides during 2014 were 4.52 lakhs and 1.31 lakhs, respectively. This represented an increase from 1.27 lakhs and 0.39 lakhs from the data for the year 1967. Suicides alone have increased from 39,000 to 132,000, nearly four times. Part of the increase may be attributed to better collection of data. However, the total number of suicides stands at 1.32 lakhs in 2014 which is more than 10,000 a month deemed as shockingly high.

While there can be multiple causes for suicide and attempted suicide, family problems (other than marriage-related problems) (21.7%) and illness (18%) together accounted for 39.7% of all suicides during 2014. Other family problems (1586), failure in examination (1284) and illness (1105) were the main causes of suicide among persons below 18 years of age. Only 874 cases were attributed to drug overdose during 2014, while in the same year, consumption of illicit or poisonous liquor claimed 1699 victims and poisoning another 20,587 victims (NCRB, 2014). Also, it is worth noting that for each of these recorded suicide, there may be quite a few that may go unrecorded and there may also be several attempted suicides (AS) which are not included in the above data. All this indicates the seriousness of the problem of suicide.

There is reason to believe that suicide due to drug overdose remains rather under stated for the following reasons: (i) there are a large number of attempted suicides (ii) suicide due to unknown causes (8588) and (iii) other than identified causes

(33,296) may also include a number of cases of overdose. This is because the suicide and attempted suicide victims and their friends and relatives may be quite unaware of the damage being done due to drug overdose.

Research on suicides has often shown that alcoholism is one of the main factors causing suicide. Depression affects 20–25% of Americans ages 18+ in a given year and it is stated that in the USA, over 38,000 Americans every year commit suicide. Only half of all Americans experiencing an episode of major depression receive treatment (NAMI, 2013). About 80–90% of adolescents who seek treatment for depression are treated successfully using therapy and/or medication. It has been noted that in quite a few cases, suicide is due to certain psychiatric disorders especially depression. Schizophrenia and certain neurological disorders have also been stated to be causes of suicide. In some cases, it has also been noted that physical illnesses such as terminal ones, including HIV infection too causes suicidal behaviour as the person feels ashamed due to the stigma attached to HIV and there is no immediate cure for the same.

Causes of Substance Abuse and Suicide

There are many causes for substance abuse and suicide, and many of these are common to both of these behaviours. These causes can be broadly categorized into biological, psychological, social and cultural factors.

Biological Factors

Zai et al. (2012) conducted a detailed research and came to the conclusion based on their 'family studies' and 'twin studies' that a genetic component is involved in suicidal behaviour. They have provided evidence that the inheritance of suicidal behaviour is seen in both attempted and completed suicides. In their paper, they have also shown that the familial transmission of suicidal tendencies may be independent of the underlying neuropsychiatric disorders. Furthermore according to them, at least part of the heritability of suicidal behaviour may overlap with suicidal ideation, suicide attempt and suicide completion. It is believed that both suicidal behaviour and depression are somewhat linked to decreased serotonin in the brain. In fact, research on the people who have committed suicide and post-mortem of the suicide cases has shown low levels of serotonin metabolite in the cerebrospinal fluid.

Despite considerable research (e.g. Reiss & Dombeck, 2007), it is not yet clear which genes are related to suicide though it appears that there is a set of genes which may increase a person's suicide risk, just as there are specific genes which increase specific types of mental illness (e.g. depression) and specific type of personality (e.g. impulsive/aggressive temperament). In terms of neurological and

neurochemical influence on suicidal risk behaviour, research has shown that the hypothalamic-pituitary-adrenal (HPA) axis which controls the individual's responses to actual, anticipated or perceived harm, is dysfunctional and the dysregulation of this axis can develop chronic stress which may be linked to depression and anxiety and there on to suicidal behaviour (Reiss & Dombeck, 2007).

Thus, almost similar to some of the most complex conditions like obesity (Froguel & Boutin, 2001), hypertension (Higaki, Katsuya, Morishit, & Ogihara, 2001) and coronary artery disease (Winkelmann & Hagar, 2000), suicide is also considered to be a condition which is caused by genetic factors even though many other factors are also involved in suicidal behaviour.

Substance Abuse and Addiction: Biological and Genetic Causes

Tracy (2015) refers to drug addiction/abuse, as the obsessive and repeated use of dangerous amounts of drugs, compulsive and repeated use of drugs, with a continuous increase in the dosage taken and the appearance of withdrawal symptoms when not using drugs. Though specific causes are identified for this problem, genetic factors have been found to play a significant role though many psychological, social and cultural factors may also contribute to the problem. Drug addiction tends to run in families, indicating genetics play a role in causing drug addiction. In fact, as stated by Bevilacqua and Goldman (2009), based on their study on twins, it appears half of someone's risk of becoming addicted to drugs is genetic.

In response to the query that which biological factors increase the risk of suicide, Horvath, Misra, Epner, and Cooper (2013) pointed out that genetics and biological forces of nature are important and that these factors are equally important in addictive behaviours in addition to the abnormalities present in brain chemistry, brain structure and genetic abnormalities. They were of the view that two basic types of things influence addictive behaviours, (1) biological forces and (2) environmental influences both in combination cause addictive behaviour. The authors have put forth a model of addiction namely the Bio-Psycho-Social-Spiritual model (BPSS model) which recognizes the different aspects being interrelated in addiction. They opined that there is no one particular addiction gene but a number of genetic and biological factors together render a person addicted to substance abuse.

Substance use/abuse/addiction thus appears to run in families. As mentioned earlier in this chapter, the study of twins has shown that if one twin develops addiction, the other twin also develops such behaviour. Hence, genetic causes of drug addiction/substance abuse appear to involve multiple gene sequences and science has not yet been able to pinpoint all the genes involved, though it is known that some genes like those involved in brain receptors of nicotine contribute to substance behaviour. Of course, genes are not the sole determinant of alcoholism or drug dependence, but their presence or absence may increase the likelihood that a person will become alcohol or drug dependent (Mayfield, McLeod, & Hall, 2008).

The write up in 'alcohol rehab.com' on genetics and drug addiction, on 24 April 2015, also points out the importance of genetic predisposition for drug addiction/substance abuse. For instance, if the individual's parent or grandparent had an addiction problem, the probability of the person being vulnerable to addiction is quite high; however, it is not necessary that he would develop alcoholism or substance abuse. It only means that the person concerned will be more predisposed to develop substance use/abuse behaviours. That is, the person does not inherit drug abuse problem but he may inherit susceptibility to it. At the same time, it must be kept in mind that even if a person does not have a genetic factor for substance abuse, he may yet start abusing drugs, which may be passed on by the individual to the future generation in his family along with other predispositions such as physiological reactions to drugs and risk taking behaviours. It is of course possible that a person, who becomes also physiologically addicted to a substance, may have certain changes in the brain and nervous system that may bring about a change in the functions of the neurotransmitters. This was pointed out to be so in the case of suicide behaviour, in the earlier discussion of biological factors in suicidal behaviour.

To summarize this section on biological factors contributing to suicidal and substance abuse/drug-related behaviours, it may be stated that though one may not inherit the suicidal tendency, ideation and suicidal behaviours, substance abuse and addiction behaviours, one may inherit a predisposition to develop any of these behaviours if someone in the family such as a parent or grandparent had such problems. Also many of the genetic and biological factors appear common to developing suicidal tendencies or drug abuse/addiction behaviours.

Psychological Factors Contributing to Suicide and Drug Abuse

While biological factors to quite an extent contribute to suicides and substance abuse/addiction, there are many psychological factors that can lead to these problems. For instance, suicides can occur due to psychological factors such as stress, depression and mental disorders. The Committee on Pathophysiology and Prevention of Adolescent and Adult Suicide (2002) stated that according to the available data, in most cases (90%) of suicide, mental disorders have been associated. This was supported by Lewiecki and Miller (2013). The other factors include predisposing personality traits, aggression and impulsivity, acute or chronic stress, trauma, substance or alcohol abuse and related factors. According to Reiss and Dombeck (2007), suicide is to be viewed as a poor response to stress. Personality, level of attention, arousal and reactivity to new or novel situations (temperament) are all to be considered as factors contributing to suicide behaviour. Research has shown that typical characteristic temperament is displayed by the persons having suicidal tendencies. These persons may be depressive or withdrawn or high on neuroticism, and manifest negative and avoidant behaviours. Some also

overreact to stress, and this tendency leads to develop anxiety or depressive disorders that may ultimately lead to suicide. These people also have been found to have difficulties in relationships at home, work and school.

Another psychological explanation is that those who commit suicide or have suicidal ideation may have poor control over their emotions such as fear, anxiety, anger and frustration. They not only disregard other people's feelings but also make poor and snap judgements and indulge in alcohol, drugs and even sexual abuse. It is stated that in infancy, these persons show high irritability triggering negative responses from their care givers and as they grow up they experience negative responses from their peers and authority figures. Some may suffer from psychiatric or psychological problems. Researches (e.g. The National Bureau of Economic Research, 2016), which focused on people who have committed suicide, have shown that some of them also indulged in substance use and abuse, indulged in excessive alcohol intake, encountered financial and personal relationship problems, indulged in impulsive behaviours and so on, which all made them more prone to commit suicide. These people are considered to be at risk for suicide behaviour.

Harris and Barraclough (1997) and Molnar, Berkman, and Buka (2001), pointed out that individuals who contemplated suicide also suffered from a mental disorder or substance abuse disorder or both. Independent of each other, mental illnesses, substance abuse and suicide each has a profound impact on individuals and families, schools and workplaces, communities and society at large.

The psychological variables that have been studied in relation to suicide include aspects of thinking, reasoning and behaviour, as listed below:

- Memory and cognitive distortions;
- Hopelessness and hope;
- Self-efficacy;
- Locus of control;
- Coping style and affect regulation.

Similarly, there are many possible causes for substance abuse/addiction, which include abnormality in a person's behaviour, thinking and feelings as well as experiences which may be a part of mental illness.

Vulnerability to substance abuse is also influenced by demographic, environmental, behavioural and personality factors. Poverty, previous sexual abuse, rebelliousness, delinquency, incarceration and peer drug use are also issues that contribute to a person's vulnerability to substance abuse. Furthermore, the environment in which the individuals are brought up, their interaction with their own family members, their responses to environment, culture and so on may all develop in them certain unhealthy behaviours leading to addiction. For instance, if the person's thoughts and beliefs are unrealistic and dysfunctional, he may feel so much discomfort that he resorts to substance abuse to overcome the discomfort. The substance taken may for a certain period alter the individual's state of mind and take him to a more peaceful (artificially created by the drug) state. Thus taking drugs to overcome discomfort become a habit leading on to addiction over a period of time.

Some of the causative models put forward by psychologists include the psychopathological model which states that cognitive difficulties, mood disturbances and various mental illnesses occur along with drug addiction which is termed comorbidity. According to Miller, Forchimes, and Zweben (2011), half of those who seek treatment for addiction have been found to suffer from one or the other mental disorder.

Mayo Clinic (2014) pointed out the following risk factors for substance abuse: (i) family history of addiction; (ii) male gender; (iii) having another mental health disorder; (iv) peer pressure; (v) lack of family involvement; (vi) anxiety, depression and loneliness; and (vii) taking a highly addictive drug. Personality traits, such as 'denial of obvious problems', have been found along with problems in regard to emotional regulation and impulse control, which all may be underlying factors in substance abuse/addiction. Mayo Clinic (2014) added that addiction to substance has been found in persons suffering from personality disorders. Alcoholism in parents, exposure to alcohol and alcoholic life style, peer pressure and mental disorders may lead individuals to develop the tendency of drinking that can result in addiction in course of time. Those who are thrill seekers and those who want to be less inhibited may take alcohol which may lead to addiction over a period of time. Addiction to substances can also arise due to significant personal issues, such as failure in exam or failure to come up to the expectations of others, failure in business, stress, peer pressure and family influences.

There are also environmental factors that contribute to substance abuse and addiction. These include the following: (a) participating in sports and using performance enhancing drugs; (b) peer group that encourages the individual to take drugs; and (c) sometimes poverty or very low socio-economic status. Poor economic conditions make some fall a prey to drug traders to make quick money by selling drugs.

To summarize the psychological factors causing suicide and substance abuse behaviours, it may be stated that low frustration tolerance and an inability to face stress cause substance abuse and suicide behaviour which are both dangerous behaviours, having certain common biological and psychological causes.

The issue here is the relationship between the two phenomena, viz. substance abuse and suicide. It is known that persons, who want to commit suicide, do so with or without substance abuse. At the same time those who use or abuse substances may not necessarily think of committing suicide. Both behaviours are indulged in because of frustration, disgust with life, feelings of failure, conflict with nears and dears, little control over emotions and a strong need to escape from all troubles. The inability to deal with frustration, anxiety provoking situations, inability to control the strong emotions like fear, aggression, anger—all appear to be causes leading to the two behavioural phenomena, viz. substance abuse and suicide. Both are damaging to self and to the significant persons in the individual's life. Studies based on psychological autopsies have shown that not only the two phenomena are complex and complicated, but the causes such as biological, psychological and environmental factors interrelate among themselves resulting in the two damaging behaviours, which cause untold misery and distress to the family and deprive the

community and society of productive individuals who could otherwise contribute to the development of not only the community but also the society.

Those who use substances do so because it takes them to a totally different world where they are able to forget the pain of every day struggle and disappointments with own self and also with others. However, they may not necessarily have the intention to take their life, all that they want is to escape the life's cruelty and disappointments and the pain of everyday living by going into a different world, an altered state of mind that gives relief (though temporary and artificial) from the pain of living with disappointments and frustrations. In some cases, the individual may experiment a substance as a one time trial to overcome negative painful feelings, but continue indulging in it as it makes him feel comfortable and thus gets habituated to taking the substance almost on a regular basis. From this psychological need for the substance, the person graduates to the physiological need for the drug as his organ system gets used to the substance, and being not on that substance/drug causes extreme physical distress such as cramps, severe headache and nausea, which are called the withdrawal symptoms. Even at this stage, there may be no intention to commit suicide, but inadvertent ingestion of heavy doses of the substance and trying for greater 'high' with the dangerous drugs may end up in fatality. This is the death due to overdose of the concerned drug and not actually suicide.

On the other hand, a person who commits suicide may face all the problems mentioned above such as pain and suffering of living with frustrations and disappointments but prefers to end his life and thereby end all his pains of living. In both the cases of suicide and substance abuse, the main rationale is to escape from the psychological pain which is so intense and unbearable. However, while the substance abuser tries to enter altered state of mind and escapes the reality, the person who commits suicide escapes it once and for all by killing himself.

Substance Abuse and Suicide

The Substance Abuse and Mental Health Services Administration (SAMHSA) which conducted a National Survey on Drug Use and Health (NSDUH) in 2014 gave estimates of suicidal thought and behaviour for 18 years of age and above persons. The survey asked whether they had thought (i.e. at any time during the past 12 months) seriously about trying to kill themselves. About 9.4 million adults admitted entertaining suicide thoughts, and 2.7 million reported that they had made plans to commit suicide and 1.1 million had actually made suicide attempt. Stated differently, one-third of the adults who had thought of suicide made suicide plan and about one out of nine adults who had serious thoughts of suicide made suicide attempt. That is, two-thirds of adults who had serious thoughts of suicide did not make suicide plan and 8 out of 9 adults who thought of suicide did not attempt suicide.

Information was also obtained on nine categories of illicit drugs, viz. marihuana, hashish, cocaine, crack, heroin, hallucinogens and inhalants as well as the non-medical use of prescription drugs such as pain killers, tranquillizers, stimulants and sedatives. The survey revealed that 59.4 million adults, 18 years of age and above, were binge alcohol users. Of these, 3.1 million had serious thoughts of suicide, 896,000 made suicide plan and 453,000 attempted suicide in the past year. An estimated 16.1 million adults were found to be heavy alcohol users. Of these, 987,000 had serious thoughts of suicide, 297,000 made suicide plans and 190,000 attempted suicide. In 2014, as per the above data adults who used illicit drugs in the past year appeared more likely to have had serious thoughts of suicide, to have made suicide plan and were also more likely to attempt suicide as compared to those who did not use or abuse substances.

In 2015, an estimated 39.8 million adults aged 18 and above were illicit drug users in the previous year. Among these, about 3.7 million had serious thoughts of suicide, 1.1 million made suicide plans and 525,000 attempted suicide in the past year. The survey also showed that besides having serious thoughts of suicide, making suicide plan or attempting suicide in the past year, varied by types of substances used. For instance, the report showed that those who used marihuana (9.1%) had serious thoughts of suicide in the past year. In 2014 among adults who used illicit drugs in the past year, the percentage who reported suicide plan, ranged from 2.6% for marihuana users to 7.1% for non-medical users of sedatives.

As for illicit drug users in 2014 who made suicide attempt, the range was 1.2% who used marihuana to 4.5% non-medical users of sedatives. As for users of both alcohol and illicit drugs, they were more likely than all others to have serious thoughts of suicide and made suicide plan and suicide attempt. The data also showed that about 2.5 million adults had received substance use treatment at a specialty facility which included 5.2 lakh persons showing serious thoughts of suicide, 2.30 lakhs had made suicide plan and 1.26 lakhs who attempted suicide in the past year.

Thus, substance abuse seems to be highly related to suicidal behaviour. In a recent article of The National Bureau of Economic Research (2016), it was reported that alcohol and substance/drug use increased suicidal behaviour. It pointed out that each year more American young people died from suicides than from all other leading natural causes of death. It added that family and friends of the persons caused many stresses leading to suicidal tendencies in the individual. Substance abuse can also increase impulsiveness and decrease inhibitions, and increase suicidal tendencies. In the working paper No: 8810 of National Bureau of Economic Research, the authors Markowitz, Chatterji, Kaestner and Dave (2016a, b) analysed the responses of 3000 students between ages 17 and 24 years at the University of Southern Illinois, and found the students who were on alcohol or substance use were much more likely to have suicidal tendencies as compared to those who were not alcohol or substance users or abusers. The socio-economic and demographic information obtained highlighted parental history of alcohol and drug problem as well as students smoking, which had a significant correlation with psychiatric

disorders and substance abuse disorders. The researcher concluded that policies designed to reduce the consumption of alcohol and illegal drugs may perhaps succeed in reducing suicidal behaviours.

In an article based on a survey of 200 respondents (100 heroin users and 100 opiate users) regarding risk for suicide attempt, Dragisic, Dickove and Mijatovicn (2015) stated that suicide is closely linked to substance abuse, and therefore it is very important to confirm the substance abuse factors while assessing suicidal behaviour. They also found a relationship between psychotic disorders, substance abuse and suicidal behaviour in the family of the subjects. Also, they found that the main risk factors for suicide attempt were: (i) heredity; (ii) psychotic disorder; (iii) drug addiction; (iv) suicidal attempts; (v) duration of substance abuse; (vi) intravenous heroin use; and (vii) hyper sensitive personality structure with biological and psychological structures interacting with the effects of substance.

According to NCBI, Van Orden and Conwell (2011) stated that many of the factors that contribute to depression also increased the risk of alcoholism and suicide. Loss, stress, loneliness, low self-esteem and feelings of anxiety, rejection, helplessness and hopelessness and such other factors characterized late life alcoholism and depression. In research on suicide in adults (Welte, Barnes, Wieczorek, Tidwell, & Parker 2001) and youth (Brent et al., 1993), the researchers found that suicides were related to alcohol, relationship loss and impulsivity. Similar findings in alcohol-related suicides were reported by Makela (1996) and by Ward (1984) and Bechtold (1988) among Native Americans.

From the above, it appears that relationship problems are frequently precipitants in alcohol-related suicides which had been reported in the studies by Miles (1977), Murphy and Robins (1967) and Rich, Fowler, Fogarty, and Young (1988). According to Institute of Medicine (2002), alcohol and substance abuse are important risk factors for suicide and should be noted by physicians as indicators of possible suicide by these persons.

Motives for Suicide

A truism in suicide literature is that ‘not all persons who commit suicide want to die and not all persons who want to die commit suicide’. Thus, intention to commit suicide is an important aspect to look into when considering the motives for suicide. According to Freud (Menninger, 1938), the ‘wish to kill’, the ‘wish to die’ and the ‘wish to be killed’, are some of the motives for suicide. The motive may go beyond Durkheim (1897)’s sociological typology of suicide (e.g. egoistic suicide, altruistic suicide, anomic suicide and fatalistic suicide). The motive for suicide may be as diverse as a need for identification as in the case of ‘copycat’ suicides (also called the Werther effect) to delusional beliefs as in the case of Klingsor syndrome, i.e. genital self-mutilation based on religious delusions (Welte et al., 2001).

An Indian study of suicide attempters classified motivation into 'the wish for change' and 'the wish to die' groups and found that the former had low lethality, lack of planning for their attempt, more likelihood of rescue and was not intoxicated during the attempt. The latter group utilized more drastic measures, such as hanging and was more likely to have a psychiatric disorder with co-morbid alcoholism (De Luca, Tharmalingam, & Kennedy, 2007).

According to Medindia (2012), the causes of suicide were family problems (25.6%), illness, including mental illness (20.8%), drug abuse/addiction (3.3%), love affair (3.2%0, failure in examination (1.6%), sudden change in economic status (2.1%), poverty (1.9%) and dowry dispute (2.3%) and other causes included suspected/illicit relations, cancellation/non-settlement of marriage, not having children(barrenness/impotency), death of a dear one, dowry dispute, divorce, ideological causes/hero worship, illegitimate pregnancy, physical abuse (rape, incest, etc.), poverty and professional/career problem.

Psychiatric Diagnosis

As mentioned elsewhere, one of the major risk factors in suicide is psychiatric disorders particularly depression, substance abuse disorders, schizophrenia and impulsiveness and personality disorders. Studies in India (e.g. Sarkar, Murthy, & Singh, 2003; Goel & Netto, 1975) on suicides show varying results with rates of psychiatric disorders ranging from 9.5 to 24.9%. Murthy (2008) reported (based on psychological autopsy study) that major depression, bipolar disorder and schizophrenia were found in 24% of the suicide cases, and substance abuse was prevalent in 18% of the subjects.

Benegal, Sathyaprakash, and Nagaraja (2008), in their research on attempted suicide cases, found that 11.6% had a psychiatric diagnosis, namely major depressive disorder, alcohol dependence, schizophrenia, conduct disorder and personality disorder in that order. In another more recent study, Kulhalli, Isaac, and Murthy (2007) took 100 consecutive suicides in a rural setting and reported DSM-III-R psychiatric diagnosis (37%), alcohol dependence (16%) and adjustment disorders (15%). According to the researchers, schizophrenia, major depressive episode and dysthymia constituted smaller proportion (2% each). Different researchers have mentioned varying rates of psychiatric diagnosis in suicide cases. For instance, nearly two decades ago Gupta, Jha, and Devi (1987) reported 59.7% rate of psychiatric diagnosis in attempted suicide cases, whereas it came down slightly a few years later to 57% according to Kisore et al. (1994). Then onwards, in 2008, Praharaj and his colleagues reported a rate of 46.7% psychiatric diagnosis (Praharaj et al., 2008).

Mood disorders, especially depressive disorder was more commonly given as the psychiatric diagnosis followed by alcohol abuse, neurotic, stress related and somatoform disorders by different researchers (e.g. Singh, Sharma, & Pasweth, 2005). In regard to suicidal ideation, Gupta et al. (1987) based on a study conducted

in a general hospital found that nearly 60% of patients with suicidal ideation had depression followed by substance abuse and psychosis (9.74% each). Bipolar disorder was diagnosed in about 9% of cases and slightly more than 7% was found to be suffering from different neurotic disorders. Khalid, Kunwar, Rajbhandari, Sharma, and Regmi (2000) took 1560 patients diagnosed as suffering from schizophrenia and tried to find out the rate of attempted suicide among them. They concluded that 4.7% of these patients attempted suicide.

Patients diagnosed as manifesting personality disorder were found to have attempted suicide but without lethality and intentionality (Sher et al., 2009), and the diagnosed personality disorders included schizoid personality disorder, borderline personality disorder and antisocial personality disorder. Singh et al. (2005) studied the first-time suicide attempters, and they found that the more commonly obtained personality disorder was histrionic and anankastic personality disorder.

Physical Illness

The suicidal thoughts, ideation and the intention to commit suicide seriously may be associated also with incurable or extremely painful and chronic physical illnesses. In this regard, Parkar, Seethalakshmi, Adarkar, and Kharawala (2006) pointed out that in Indian women who attempted suicide, many of them suffered from chronic physical illness such as abnormal vaginal discharge and dysmenorrhea. Benegal et al. (2008) corroborated the above findings and stated that dysmenorrhea was the cause for suicide attempts in 20% of cases, followed by ailments such as peptic ulcer, hypertension, bronchial asthma and arthritis in that order.

Other risk factors for suicide include early parental deprivation, bereavement and family history of suicide (Radhakrishnan & Andrade, 2012). Basu et al. (1993) pointed out that suicidal behaviour was correlated with severity of depression. Alcohol dependence and suicide were studied by Murphy et al. (1992) who identified factors in alcoholism were intimately linked to suicide. They included continued drinking, major depressive episode, suicidal communication, poor social support, serious medical illness, unemployment and living alone. Antisocial personality disorder (Satija, Sharma, Gaur, & Nathawat, 1989) was considered as risk factors for suicidal behaviour. In addition, marital discord, delusional jealousy factors also play a role in suicidal behaviours and these include financial difficulties, alcohol abuse certain socio-economic (Radharkrishnana & Andrade, 2012).

Apart from the various biological, psychological and social factors, there is yet one more factor, 'the influence of the media' in increasing or decreasing suicidal behaviour. In regard to increasing suicidal behaviour, an example from Hong Kong between 1998 and 2002 will be more appropriate. At this time, a large number of people in Hong Kong committed suicide using charcoal burning method which was propagated by the media (Chen, Yip, Lee, Gunnell, & Wu, 2015). This almost took the form of suicide epidemic. Another example comes from Sri Lanka between 1980 and 1990, when people committed suicide by self-poisoning with seeds of

yellow oleander tree. Both these methods were learnt by people through the media which propagated the same (Eddelton et al., 1999; Mohan, Pradhan, & Channabasvanna, 1983). Also the media, for instance, by glorifying 'sati' in India and highlighting building of a temple for sati and so on, almost justified such suicides among women.

As for the positive role of the media, it can have a protective effect by acting as a source of information to people. By responsible reporting of suicide by the media and providing information to people regarding help available and at the same time not sensationalizing the problem the media can help reduce the number of suicides being committed.

So far, the discussions had been focusing on the relationship between substance abuse and suicide. Studies in regard to both the phenomena have categorically shown that there are many factors common to substance abuse and suicide. Biologically, both have though no direct inheritance or specific genes that are related to the problems, and research has shown that there is inheritance of predisposition to indulge in substance abuse and become addict as well as to have suicidal thoughts, suicidal ideation, suicidal attempt or commit suicide. The various causes motivating a person to substance use/abuse/addiction and to attempt or commit suicide are also related to psychiatric diagnosis of depression, bipolar and other mental disorders, anxiety and neurotic disorders, personality disorders and many physical illnesses and pain which are unbearable leading to either suicide or substance abuse. In addition, research has shown that there are many sociocultural, socio-demographic and socio-economic factors that goad a person to either use or abuse substances or lead him to attempt or commit suicide.

Many of these factors are preventable and these include factors such as frustration, disgust, failures in life, disappointments in love affair, poor financial security, lack of parental and/or family support, conflicts with nears and dears, poor peer relationships, abandonment by parents at a young age, failure in love affair, failure in studies, examination and work, sudden change in business and earnings lead to extreme psychological pain, unbearable dejection and depression and undue stress, from all of which the individual seeks relief. Some find substance abuse which alters the state of mind provides comfort and relieves the individual of pain and suffering and takes him out of the pain of everyday living.

A considerably long-term use of substances such as marihuana, cannabis, and hard drugs such as heroin which are taken through intravenous mode make the person ultimately get hooked on to them and cannot escape from it due to both physiological and psychological reactions when not using the drug. Such persons in course of time require more quantities of the substance and more frequent intake of the same, and thus inadvertently take such a heavy dose or combination of different substances to get high that it ends up being fatal, even though the individual may not necessarily want to die.

The same and almost equal set of factors such as psychiatric disorders, frustrations of all kinds in life, failure in business, failed marriage, or divorce, lack of family support, unemployment, family violence, inter-generational conflicts and

loss of job or loved one may finally goad the person to end his life by using overdose of drugs, or hanging, drowning, shooting, etc.

Thus, there is a relationship between the two phenomena, viz. substance abuse and suicide, and both being dangerous behaviours causing untold damage to the family, nears and dears, and also to the society which loses productive young persons who could have contributed in many ways to the societal development.

The US Department of Health and Human Services (2009) in their TIP50, a Treatment Improvement Protocol, addressing suicidal thoughts and behaviours in substance abuse treatment, have mentioned the following:

- Suicide is a leading cause of death among people who abuse alcohol and drugs;
- Compared to the general population individuals treated for alcohol abuse or dependence are at about 10 times greater risk to eventually die by suicide as compared with general population;
- People who inject drugs are at about 14 times greater risk for eventual suicide;
- People with substance use disorders are at elevated risk for suicidal ideation and suicidal attempts;
- People with substance use disorders who are in treatment are at especially high risk for suicide for many reasons: (i) they enter treatment at a point when their substance abuse is out of control; (ii) they enter treatment when a number of co-occurring life crises may be occurring as, for example, marital crisis, legal or job crisis; (iii) they enter treatment at peaks in depressive symptoms; and (iv) mental health problems such as depression and PTSD associated with suicidality often co-occur among people who have been treated for substance use disorder. All the above confirm a strong link between substance abuse and suicidality.

Strategies for Ameliorating, Rehabilitating and Preventing Substance Abuse and Suicides

In 2000, the World Health Organization (2009) launched the multisite intervention study on suicidal behaviours (SUPRE-MISS) which aimed to increase knowledge about suicidal behaviours and about the effectiveness of interventions for suicide attempters in culturally diverse places around the world.

Early detection and adequate treatment of a primary psychiatric disorder is of paramount importance. Vijayakumar, Umamaheswari, Ali, Devraj, and Kesavan (2011) examined the efficacy of brief intervention and regular contact in a randomized controlled trial in suicide attempters and found that it did reduce rates of completed suicide over an 18-month period. Importantly however, the care received by the treatment-as-usual group in this study was below desirable standards because it was limited to the acute management of the somatic sequelae of the suicide attempt and did not include psychiatric or psychological assessment or treatment.

The early identification and treatment of vulnerable populations with risk factors for suicide across the lifespan is another strategy. Given the strong link between negative life events early in childhood and suicide risk, it is important to identify populations that have been exposed to traumatic childhood experiences, such as sexual/physical abuse and parental domestic violence. The identification and management of such individuals requires a multidisciplinary approach with active participation from medical, paramedical personnel, psychiatrists and psychologists but also involvement of teachers and school authorities, health professionals and the legal system.

Primary prevention strategies include promoting positive health and instilling adaptive coping strategies among children; improving awareness among parents, teachers and healthcare professionals regarding child-rearing practices and early intervention for maladaptive coping styles.

At the community level, the establishment of social programs such as child and family support programs and programs aimed at achieving gender and socio-economic equality may prove useful (Vijaykumar, 2007). Every effort should be made to raise the awareness level regarding the link between substance abuse and suicide and help make suicide prevention a priority. The program has to be tailored to the needs of the populations at risk for suicide and substance use and abuse.

Strategies such as the USI (Universal, Selective, Indicated) model, which outlines 'universal' preventive strategies for the population as a whole; 'selective' strategies targeting at-risk individuals (e.g. psychiatrically ill, homeless, socially excluded groups) and 'indicated prevention' strategies targeting suicide attempters in OPD and emergency units must be worked out and implemented systematically. 'Gatekeeper training' focuses on skill development to enable community members such as teachers, coaches and others to identify signs of depression and suicide-related behaviours among youth (Ranganathan, 2005).

The role of the media is becoming increasingly important. A delicate balance needs to be maintained between press freedom and responsibility of the press to minimize potential harm to vulnerable individuals. Effective regulation by law and check on availability of firearms and drugs is an essential ingredient for prevention of suicide.

Integrated Rehabilitation Centre for Addicts (IRCA) can provide counselling, treatment and rehabilitation services to drug abuse victims. The number of rehabilitation centres in India is around 401 which is very few for 3.4 million drug abuse victims.

Several types of drugs come to the market through the smugglers, dishonest traders and peddlers, particularly around schools and colleges. The intake of the substance out of curiosity by the youngster becomes a habit of taking drugs regularly, and the effect of these dangerous drugs is fatal and horrible. Surveillance and prevention of such activities have to be an important part of control of drug abuse. Similarly to control suicides, there should be strong check on availability of lethal means.

Counselling and psychological therapies, along with community and family support services, are essential elements of any strategy for prevention of drug addiction and suicidal behaviour and rehabilitation of drug addicts and those with suicidal tendency. Policies and strategies must integrate all the knowledge gained and techniques available for preventive and rehabilitative measures.

As it is difficult to entangle cause and effect relationship between drug disorders, alcoholism, suicidal behaviour and psychiatric disorders, the counselling services, preventive, ameliorative and rehabilitative—should be multipronged and coordinated and should be easily accessible to the needy. Creating awareness in the community especially the young population about the various drugs used and abused and the various facilities available to overcome the problem should be high on the agenda. Supportive atmosphere at home and work place is vital to prevent relapses, frustration, depression and disappointments.

Individual and societal tensions, changing values, lack of opportunities, availability of new types of chemicals and drugs, the impact of media—all create a situation where continuing vigilance and efforts to understand the causes and remedial measures are called for. This requires not only dynamic action but also coordinated research and educational efforts. The current level of research both theoretical and applied and our knowledge of the causes and remedies are hardly commensurate with the magnitude and complexity of the problem.

References

American Foundation for Suicide Prevention. (2014). *Suicide statistics*. Washington, DC: AFSP.

Babu, R. S., & Sengupta, S. N. (1997). A study of problem drinkers in a general hospital. *Indian Journal of Psychiatry, 39*(1), 13–17.

Basu, D., Raj, L., Mattoo, S. K., Malhotra, A., & Varma, V. K. (1993). The agoraphobic alcoholic: Report of two cases. *Indian Journal of Psychiatry, 35*(3), 185–186.

Bechtold, D. W. (1988). Cluster suicide in American Indian adolescents. *American Indian and Alaska Native Mental Health Research, 1*(3), 26–35.

Benegal, V., Sathyaprakash, M., & Nagaraja, D. (2008). Alcohol misuse in the Andaman and Nicobar Islands. *Report on project commissioned by the Indian Council of Medical Research and funded by Action Aid, India*.

Bevilacqua, L., & Goldman, D. (2009). Gene and addictions. *Journal of Clinical Pharmacology Therapy, 85*(4), 359–361.

Brent, D. A., Perper, J. A., Moritz, G., Allman, C., Friend, A. M. Y., Roth, C., … Baugher, M. (1993). Psychiatric risk factors for adolescent suicide: A case-control study. *Journal of the American Academy of Child & Adolescent Psychiatry*, *32*(3), 521–529.

Chagas Silva, M., Gaunekar, G., Patel, V., Kukalekar, D. S., & Fernandes, J. (2003). Alcohol abuse on infant growth in low income countries: New evidence from South Asia. *The Bulletin of World Health Organisation, 81*, 609–615.

Chen, Y. Y., Yip, P. S., Lee, C. K., Gunnell, D., & Wu, K. C. C. (2015). The diffusion of a new method of suicide: Charcoal-burning suicide in Hong Kong and Taiwan. *Social Psychiatry and Psychiatric Epidemiology, 50*(2), 227–236.

Chopra, A. (2015). *Drug abuse and addiction in India (Causes and Remedial Measures).* Retrieved from http://www.importantindia.com/15493/drug-abuse-and-addiction-in-india/.

De Luca, V., Tharmalingam, S., & Kennedy, J. L. (2007). Association study between the corticotropin-releasing hormone receptor 2 gene and suicidality in bipolar disorder. *European Psychiatry, 22*(5), 282–287.

Dragisic, T., Dickov, A., Dickov, V., & Mijatovic, V. (2015). Drug addiction as risk for suicide attempts. *Materia Socio-medica, 27*(3), 188–191.

Durkheim, E. (1897). *Suicide: A study in sociology*. London: The Free Press.

Eddleston, M., Ariaratnam, C. A., Meyer, W. P., Perera, G., Kularatne, A. M., Attapattu, S., … Warrell, D. A. (1999). Epidemic of self-poisoning with seeds of the yellow oleander tree (Thevetia peruviana) in northern Sri Lanka. *Tropical Medicine & International Health, 4*(4), 266–273.

Froguel, P., & Boutin, P. (2001). Genetics of pathways regulating body weight in the development of obesity in humans. *Experimental Biology and Medicine, 226*(11), 991–996.

Goel, D. S., Captain, S., & Netto, D. (1975). Cannabis: The habit and psychosis. *Indian Journal of Psychiatry, 17*(4), 238–243.

Gowin, L. (2015). *New report: First compilation of global addictions*. Adelaide: School of Medical Sciences, University of Adelaide.

Gupta, N., & Basu, D. (1999). The ongoing quest for sub-typing substance abuse: Current status. *Indian Journal of Psychiatry, 41*(4), 289–299.

Gupta, A. K., Jha, B. K., & Devi, S. (1987). Heroin addiction: Experiences from general psychiatry out-patients department. *Indian Journal of Psychiatry, 29*(1), 81–83.

Harris, E. C., & Barraclough, B. (1997). Suicide as an outcome for mental disorders. A meta-analysis. *The British Journal of Psychiatry, 170*(3), 205–228.

Higaki, J., Katsuya, T., Morishita, R., & Ogihara, T. (2001). Symposium on etiology of hypertension: Summarizing studies in 20th century hypertension and genes. *Internal Medicine, 40*(2), 144–147.

Hindustan Times. (2014). India on a 'high' with 7 drug addiction related suicides. e-paper HT Data Hindustan Times.com. November, 5.

Horvath, T., Misra, K., Epner, A. K., & Cooper, G. M. (2013). Biological causes of addiction. Retrieved from http://www.who.int/mental_health/prevention/suicide/supremiss/en/.

Institute of Medicine. (2002). *Psychiatric and psychological factors in reducing suicide. A national imperative*. New York: The National Academic Press.

Khalid, A., Kunwar, A. R., Rajbhandari, K. C., Sharma, V. D., & Regmi, S. K. (2000). A study of prevalence and comorbidity of depression in alcohol dependence. *Indian Journal of Psychiatry, 42*(4), 434–438.

Kisore, P., Lal, N., Trivedi, J. K., Dalal, P. K., & Aga, V. M. (1994). A study of comorbidity in psychoactive substance dependence patients. *Indian Journal of Psychiatry, 36*(3), 133–137.

Kulhalli, V., Isaac, M., & Murthy, P. (2007). Cannabis-related psychosis: Presentation and effect of abstinence. *Indian Journal of Psychiatry, 49*(4), 256–261.

Kumar, S., Verma, A. K., Bhattacharya, S., & Rathore, S. (2013). Trends in rates and methods of suicides in India. *Egyptian Journal of Forensic Sciences, 3*(3), 75–80.

Lewiecki, E. M., & Miller, S. A. (2013). Suicide, guns, and public policy. *American Journal of Public Health, 103*(1), 27–31.

Makela, P. (1996). Alcohol consumption and suicide mortality by age among Finnish men, 1950–1991. *Addiction, 91*(1), 101–112.

Markowitz, Chatterji, P., Kaestner, R., & Dave, D. (2016). *Substance use and suicidal behaviours among young adults.* NBER Working Paper No. 8810 National Bureau of Economic Research, Cambridge.

Markowitz, Chatterji, P., Kaestner, R., & Dave, D. (2016). Alcohol and drug abuse increases suicidal behaviours. *The National Bureau of Economic Research.* Retrieved from http://www.nber.org/digest/aug02/w8810.html.

Mayfield, D., McLeod, G., & Hall, P. (2008). Genetic factors influencing alcohol dependence. *British Journal of Pharmacology, 154*(2), 275–287.

Mayo Clinic. (2014). *Risk factors, diseases and conditions. Drug addiction*. Scottsdale, AZ: Mayo Clinic.

Menninger, K. (1938). *Man against himself*. New York: Harcourt Brace and World.
Miles, C. P. (1977). Conditions predisposing to suicide: A review. *Journal of Nervous and Mental Disease, 164*(4), 231–246.
Miller, W. R., Forchimes, A. A., & Zweben, A. (2011). *Treating addiction: A guide for professionals*. New York: Guilford.
Mohan, K. S., Pradhan, N., & Channabasavanna, S. M. (1983). A report of subclinical psychological deterioration (A type of alcoholic dementia). *Indian Journal of Psychiatry, 25*(3), 243–245.
Molnar, B. E., Berkman, L. F., & Buka, S. L. (2001). Psychopathology, childhood sexual abuse and other childhood adversities: Relative links to subsequent suicidal behaviour in the US. *Psychological Medicine, 31*(06), 965–977.
Murali, T., Rao, I. N., Keshavan, M. S., & Narayanan, H. S. (1983). Thiamine refractory—Wernicke—Korsakoffs syndrome-a case report. *Indian Journal of Psychiatry, 25*(1), 80–81.
Murphy, G. E., & Robins, E. (1967). Social factors in suicide. *Journal of the American Medical Association, 199,* 303–308.
Murphy, G. E., Wetzel, R. D., Robins, E., & McEvoy, L. (1992). Multiple risk factors predict suicide in alcoholism. *Archives of General Psychiatry, 49*(6), 459–463.
Murthy, P. (2008). Women and drug use in India. Substance, women and high risk assessment study: United Nations Office on Drugs and Crime, Ministry of Social Justice and Empowerment, Government of India and United Nations Development Fund for Women.
NAMI. (2013). *Suicide facts sheet*. NAMI, USA. Retrieved from http://www2.nami.org/factsheets/suicide_factsheet.pdf.
National Crime Records Bureau. (2014). *Accidental deaths and suicides in India*. New Delhi: Ministry of Home Affairs.
National Crime Research Bureau. (2010). *Suicides in India*. Retrieved from http://www.ncrb.nic.in/StatPublications/ADSI/ADSI2014/chapter-2%20suicides.pdf.
National Institute of Mental Health. (2015). *Director's blog: Mental health awareness month, by the numbers*. Maryland: NIMH.
Van Orden, K., & Conwell, Y. (2011). Suicides in late life. *Current Psychiatry Reports, 13*(3), 234–241.
Parkar, S. R., Seethalakshmi, R., Adarkar, S., & Kharawala, S. (2006). Is this 'complicated' opioid withdrawal? *Indian Journal of Psychiatry, 48*(2), 121–122.
Ponnudurai, R., Uma, T. S., Rajarathinam, S., & Krishnan, V. S. (2001). Determinants of suicidal attempts of wives of substance abusers. *Indian Journal of Psychiatry, 43*(3), 230–234.
Praharaj, S. K., Verma, P., & Arora, M. (2008). Inhalant abuse (typewriter correction fluid) in street children. *Journal of Addiction Medicine, 2*(4), 175–177.
Radhakrishnan, R., & Andrade, C. (2012). Suicide: An Indian perspective. *Indian Journal of Psychiatry, 54*(4), 304–319.
Ranganathan, S. (2005). Conversation with Shanthi Ranganathan. *Addiction, 100*(11), 1578–1583.
Ray, R. (2004). The extent, pattern and trends of drug abuse in India, National Survey, Ministry of Social Justice and Empowerment, Government of India and United Nations Office on Drugs and Crime, Regional Office For South Asia.
Registrar General of India. (2012). *Suicides in India*. New Delhi: Government of India.
Reiss, N. S., & Dombeck, M. (2007). *Other factors contributing to suicide risk*. Retrieved from https://www.mentalhelp.net/articles/other-factors-contributing-to-suicide-risk/.
Rich, C. L., Fowler, R. C., Fogarty, L. A., & Young, D. (1988). San Diego suicide study: III. Relationships between diagnoses and stressors. *Archives of General Psychiatry, 45*(6), 589–592.
Samantaray, P. K., Ray, R., & Chandiramani, K. (1997). Predictors of inpatient treatment completion of subjects with heroin dependence. *Indian Journal of Psychiatry, 39*(4), 282–287.
SAMHSA. (2009). *Addressing suicidal thoughts and behaviours in substance abuse treatment.* A treatment improvement protocol TIP 50. U.S. Department of Health and Human Services (HHS) Publication No. (SMA) 09-4381. Rockville, MD: Substance Abuse and Mental Health Services Administration.

SAMHSA. (2014). *Behavioural health trends in the United States: Results from the 2014 National Survey on Drug Use and Health*. U.S. Department of Health and Human Services (HHS) Publication No. SMA 15-4927. Rockville, MD: Substance Abuse and Mental Health Services Administration.

SAMHSA. (2015). *The CBHSQ Report. Drug-related suicide attempts by middle-aged adults likely to involve alcohol combined with drugs*. In *Drug abuse warning network (DAWN)*. Retrieved from http://www.samhsa.gov/data/sites/default/files/report_2096/Spotlight-2096.html.

Sarkar, J., Murthy, P., & Singh, S. P. (2003). Psychiatric morbidity of cannabis abuse. *Indian Journal of Psychiatry, 45*(3), 182–188.

Satija, D. C., Sharma, D. K., Gaur, A., & Nathawat, S. S. (1989). Prognostic significance of psychopathology in the abstinence from opiate addiction. *Indian Journal of Psychiatry, 31*(2), 157–162.

Selvaraj, V., Suveera, P., Ashok, M. V., & Appaya, M. P. (1997). Women alcoholics: Are they different from men alcoholics? *Indian Journal of Psychiatry, 39*(4), 288–293.

Sher, L. (2006). Alcohol consumption and suicide. *Quarterly Journal of Medicine, 99*(1), 57–61.

Sher, L., Oquendo, M. A., Richardson-Vejlgaard, R., Makhija, N. M., Posner, K., Mann, J. J., & Stanley, B. H. (2009). Effect of acute alcohol use on the lethality of suicide attempts in patients with mood disorders. *Journal of Psychiatric Research, 43*(10), 901–905.

Silva, M. C., Gaunekar, G., Patel, V., Kukalekar, D. S., & Fernandes, J. (2003). The prevalence and correlates of hazardous drinking in industrial workers: A study from Goa, India. *Alcohol and Alcoholism, 38*(1), 79–83.

Singh, N. H., Sharma, S. G., & Pasweth, A. M. (2005). Psychiatric co-morbidity among alcohol dependants. *Indian Journal of Psychiatry, 47*(4), 222–224.

Subodh, B. N., Benegal, V., Murthy, P., Girish, N. R., & Gururaj, G. (2008). Alcohol related harm in India—An overview. *Drug Abuse: News-n-Views*, 3–6.

The Committee on Pathophysiology and Prevention of Adolescent and Adult Suicide. (2002). *Reducing suicide: A national imperative*. Washington, DC: National Academies Press (US).

The National Bureau of Economic Research. (2016). *Alcohol and drug use increases suicidal behaviours*. Cambridge, MA: National Bureau of Economic Research.

Tracy, N. (2015). *Effects of drug addiction-physical and psychological*. Mental Health Channel. Addiction Community. Retrieved from http://www.healthyplace.com/addictions/drug-addiction/effects-of-drug-addiction-physical-and-psychological/.

United Nations Office on Drug abuse and Crime. (2015). World Drug Report, New York.

UNODC. (2015). World drug report. New York: United Nations.

US death rate goes up for the first time in 10 years. (2016). Times of India (Jaipur edition).

US Department of Health and Human Services. (2009). *Addressing suicidal thoughts and behaviour in substance abuse treatment. Treatment Improvement Protocol 50. TIP50*. Center for substance abuse treatment, Rockville.

Vijayakumar, L., Umamaheswari, C., Ali, Z. S. S., Devaraj, P., & Kesavan, K. (2011). Intervention for suicide attempters: A randomized controlled study. *Indian Journal of Psychiatry, 53*(3), 244–248.

Vijaykumar, L. (2007). Suicide and its prevention: The urgent need in India. *Indian Journal of Psychiatry, 49*(2), 81–84.

Ward, J. A. (1984). Preventive implications of a Native Indian mental health program: Focus on suicide and violent death. *Journal of Preventive Psychiatry, 2*(4), 371–385.

Welte, J., Barnes, G., Wieczorek, W., Tidwell, M. C., & Parker, J. (2001). Alcohol and gambling pathology among US adults: Prevalence, demographic patterns and comorbidity. *Journal of Studies on Alcohol, 62*(5), 706–712.

WHO. (2009). Multisite intervention study on suicidal behaviours (SUPRE-MISS). In *Mental health section* (*SUPRE-MISS*). WHO: Washington, DC. Retrieved from http://www.who.int/mental_health/prevention/suicide/supremiss/en/.

WHO. (2015). *Suicide facts at a glance*. Atlanta: Center for Disease Control and Prevention.

WHO Management of Substance Abuse. (2014). *Facts and figures: The bare facts*. Retrieved from http://www.who.int/substance_abuse/facts/en/).

Winkelmann, B. R., & Hager, J. (2000). Genetic variation in coronary heart disease and myocardial infarction: Methodological overview and clinical evidence. *Pharmacogenomics, 1*(1), 73–94.

Zai, C, C., Manchia, M., De Luca, V., Tiwari, A. K., Chowdhury, N. I., Zai, G. C., … Kennedy, J. L. (2012). The biological aspects of suicidal behaviour. *International Journal of Neuropsychopharmacol*, *15*(8), 1037–1042.

Chapter 18
Antidepressants and Suicide Risk: Harmful or Useful?

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Antidepressants: Target the Right Population for an Effective Suicide Prevention

For some years now, there is a worldwide controversy concerning the potential risk of suicidal behaviour when using antidepressant treatment. Depression is currently the most prevalent mental disorder. By 2030, it will overcome cardiovascular disease and become the most severe disease in terms of overall cost. Depression is also the leading cause of suicide and suicide attempts. Indeed, 40–80% of suicide attempts are directly linked to depressive episodes (Greden, 2001) and suicide rates range from 5 to 20% among depressed patients (Courtet & Olié, 2014).

Considering this data, we may wonder if the controversy about antidepressant use is legitimate. Given that depression is the most important cause of suicide, if depression is treated, suicide will be prevented. A study conducted by Cougnard et al. (2009) demonstrated that if all depressed patients received antidepressants, more than one out of three suicide deaths would be prevented in comparison with no prescribing antidepressants. In other words, not treating depressed patients or the lack of treatment response among those patients, rather than the antidepressant treatment itself, seems

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to cause suicidal behaviour. A recent study revealed that suicidal patients responded less well to antidepressants but this treatment did not worsen their suicidal behaviour (Lopez-Castroman, Jaussent, Gorwood, & Courtet, 2016).

Many studies show the interest of using antidepressants for the prevention of suicidal behaviour, and many randomized controlled trials demonstrate that antidepressants are significantly more effective than placebo in the treatment of depression. A review analysing several randomized controlled trials of antidepressants versus placebo in adults under 65 years of age showed significant efficacy of antidepressants in the treatment of depression (Arroll et al., 2009). A recent study that focused specifically on the efficiency of selective serotonin reuptake inhibitors (SSRI), the most commonly prescribed antidepressants, suggests that negative SSRI trials are partly due to the use of an insensitive measure of efficacy and shows a consistent superiority of SSRIs over placebo in reducing depressed mood in patients with major depression (Hieronymus, Emilsson, Nilsson, & Eriksson, 2016). Other studies have shown a superior efficacy of antidepressants compared with cognitive therapy in the treatment of depression. For instance, the study conducted by DeRubeis et al. (2005) demonstrated a greater effectiveness of drug treatment.

Since antidepressants are effective in the treatment of depression, it seems quite logical to think that they also reduce suicidal behaviour. In a reanalysis of randomized placebo controlled studies of two antidepressants, fluoxetine and venlafaxine, these medications decreased suicidal thoughts and behaviours among adult and geriatric patients. Although depression improved under treatment, there was no effect, neither positive nor negative, on suicidal thoughts and behaviour among the young (Gibbons, Brown, Hur, Davis, & Mann, 2012). Recently, a retrospective cohort study demonstrated that patients on antidepressants did not have significantly higher risk of attempting suicide compared to untreated patients and this result was independent of the antidepressant class (Valuck et al., 2016).

Ecological studies also support the benefit of antidepressants in suicide prevention. For instance, an inverse correlation between the sales of antidepressants and suicide rates has been reported. This was the case in the multinational ecological study conducted by Gusmão et al. (2013): suicide rates decreased significantly in European countries where antidepressants sales showed the highest rise. Indeed, an increase in SSRI sales of one pill per capita would reduce suicide by an estimated 5% (Ludwig, Marcotte, & Norberg, 2009).

Finally, post-mortem studies have been conducted to measure the impact of antidepressants in suicide rates. A Swedish study by Isacsson, Holmgren, Osby, and Ahlner (2009) also reviewed the results of autopsies and toxicological screening of 16,937 suicides and 33,426 death controls between 1995 and 2005. They concluded that antidepressants had reduced the risk of suicide by 43%.

Through these studies (clinical, epidemiological, ecological, forensic), the efficacy of antidepressants is proven. Untreated depression remains the largest risk factor for suicide. Depressive patients should not, because of non-objective and biased opinions, be deprived of the possibility of an antidepressant treatment that is often salutary.

US Food and Drug Administration's Warnings

In truth, this controversy is not new. It began in 1990 when Dr Martin Teicher, a Psychiatrist at Harvard Medical School, published an article describing 6 patients who developed suicidal behaviour under fluoxetine (Teicher, Glod, & Cole, 1990). In 1991, an extensive clinical trial demonstrated that the use of fluoxetine was not associated with increased suicidality (Beasley, 1991). Following this article, regulatory bodies decided to carry on their policies about antidepressants (Laughren, 2006) but the controversy was launched.

More recently, in May 2003, the European and American regulatory authorities (EMEA: European Agency for the Evaluation of Medicinal Products, and FDA: Food and Drugs Administration) had knowledge of cases where SSRIs, in particular paroxetine, caused an increase in suicidality among children and adolescents. These findings lead British authorities to ban paroxetine prescriptions for children under 18 years in June 2003 (Hättenschwiler, 2007). Shortly afterwards, the FDA issued two warnings recommending to avoid SSRI prescriptions, except fluoxetine, for adolescents and children. Then, in March 2004, following a study in which the average risk of suicidality-related events was 4% with antidepressants and 2% with placebo, the FDA requested a box warning (black box) in antidepressant labelling and a modification of the information to alert patients, families and caregivers about suicidality risks. Subsequently, several studies have examined the risk of increased suicidal behaviour under antidepressant treatment. For instance, Hammad, Laughren and Racoosin (2006b) found that the use of antidepressant drugs in pediatric patients was associated with a modest increase of suicidality. The same authors found in another study an emergence of suicidal behaviour during treatment, but statistical power was too small to conclude that it was more important with antidepressants than with placebo (Hammad, Laughren, & Racoosin, 2006a).

Finally, in May 2007, the FDA extended previous recommendations on the occurrence of suicidal thoughts during antidepressant treatment to young adults aged 18–24 years. At the same time, they stated that scientific data did not demonstrate an increased risk of suicidal ideation in adults over 24 years and that suicide risk is decreased in persons aged 65 years or older. Since last warning, there were no further changes but the debate on this issue continues.

Consequences of FDA's Warnings

Unexpected effects appeared soon after the warnings were issued. In fact, even before FDA's warnings the prescription of antidepressants decreased. Following the British warning in June 2003, a Canadian study showed a 54% decrease of paroxetine prescriptions in adolescents and children (Kurdyak, Juurlink, & Mamdani, 2007). Thus, when the FDA's warning was widely reported by the

media, there were important consequences (Wallis, 2014): (i) the prescription of antidepressants declined sharply (mainly SSRIs); (ii) this trend was not compensated by an increase in the use of alternative therapies; (iii) the diagnoses of depression also decreased substantially; and (iv) the number of suicides and suicide attempts made by adolescents and young adults augmented in the year after the warning. To put some figures on these changes, a review study by Lu et al. (2014) showed that antidepressant prescription was decreased by 31% among adolescents, 24% among young adults and 14% among adults and they noted a significant increase in psychotropic drug poisoning in adolescents and young adults, but not in adults. It should be noted that the consequences of the alerts were not limited to teens and young adults, but also affected prescription habits in adults.

In fact, many studies have been interested in the consequences of the warnings. Some describe a reduction of SSRIs use only (Nemeroff et al., 2007; Olfson, Marcus, & Druss, 2008). Others show that, as mentioned above, depression diagnoses declined and alternative therapies such as psychotherapy or the prescription of an antipsychotic or anxiolytic did not increase (Kurian et al., 2007; Libby et al., 2007; Valuck et al., 2007). Finally, other more disturbing studies note an increase in suicide rates after the publication of the warnings (Gibbons et al., 2007; Katz et al., 2008). For instance, Gibbons et al. (2007) reported a 14% increase of suicide rates. Therefore, the consequences of the warnings were deleterious for patients and affected not only teens and young adults, but also adults. The unexpected consequences warrant a more comprehensive research. Also, there is a need for regulatory agencies to work with patients, providers and payers, to optimize the consequences of black box warnings (Nagar, Mehta, Bhatara, & Aparasu, 2010).

Who Is Actually at Risk?

Only a few clinical studies have investigated treatment-emergent suicidal behaviour in adult depressed patients. The STAR*D study followed a large cohort of patients treated with citalopram for 12–14 weeks (Zisook et al., 2009). Treatment-emergent suicidal ideation (TESI) appeared in about 6% of the patients, habitually during the first month, and persisted during follow-up for about a third of the patients (37%). In the GENDEP study, patients were treated either with escitalopram or nortriptyline, and 17% of them presented TESI, with a peak at the fifth week (Perroud et al., 2009). The multicenter trial of fluoxetine described an incidence of 14.3% TESI by the 4th week (Perlis et al., 2007a), while the incidence of TESI in the German research network study was far less common, it appeared only in 3.2% of patients treated with a variety of antidepressants (Seemüller et al., 2009). In our own cohort, the LUEUR study, 8.8% of patients treated with a range of antidepressants presented TESI at some point of the follow-up (Courtet, Jaussent, Lopez-Castroman, & Gorwood, 2014). Finally, in the only study focused on adolescents rather than adults (12–16 years, the TORDIA study), 176 depressed adolescents received a second-line SSRI or venlafaxine in some cases combined

with cognitive behavioural therapy (Brent et al., 2010). This adolescent sample showed a 10.2% of TESI. The differences in incidence between studies are mostly due to the use of dissimilar levels of suicidal ideation to define the threshold for TESI. Besides, the identification of TESI was based generally on a single item from a rating scale designed to measure depressive symptomatology rather than a specific instrument to measure suicidal outcomes. Importantly, in all adult studies suicide attempts were rare events happening in less than 0.5% of the patients (in the TORDIA study 2.2% of the patients made an attempt).

According to the results of these studies, some demographic features are associated with TESI: pre-adult onset (<18 years), female gender (except among patients treated with nortryptiline) and retirement or unemployment (Perroud et al., 2009; Seemüller et al., 2009; Zisook et al., 2009). The main clinical predictors of TESI were as follows: (i) the severity of depression, especially in case of melancholic features or symptom worsening during follow-up; (ii) the presence of physical pain; (iii) the abuse of drugs; (iv) the history of previous episodes of suicidal ideation or attempts; (v) the first weeks of treatment; and (vi) a poor response to antidepressants. Personality disorders, the presence of akathisia or activation and the number of hospitalizations were also predictive of TESI according to the STAR*D and German research network studies. In summary, large cohort studies show that the best clinical predictors of SI and SA are related to personal history of suicidal behaviour, substance misuse, psychosocial adversity, the severity of the depressive disorder and to a lack of antidepressant response.

It should also be highlighted the fact that precisely those who respond less well to the antidepressants seem to be at risk of developing new suicidal ideas. In the LUEUR cohort, we found that a poor response to treatment during the follow-up increased the onset of new suicidal ideas and attempts with an attributable risk of 67.5 and 56.5%, respectively (Courtet, Lopez-Castroman, Jaussent, & Gorwood 2014). Accordingly, a large study about treatment-resistant major depression compared patients who failed to reach response after several trials with those who responded to the antidepressants. They found that suicidal risk was one of the main predictors of treatment non-response (Souery et al., 2007). Moreover, worsening of suicidal ideas or TESI with an antidepressant treatment predicts the same type of suicidal outcomes if a second-line antidepressant treatment is initiated (Perlis et al., 2012). The type of drug needs also to be considered. In a post hoc analysis of data from a randomized clinical trial comparing paroxetine versus bupropion in depressed patients, paroxetine showed a stronger effect in reducing suicidal thoughts during the first weeks of antidepressant treatment (Grunebaum et al., 2013).

Another factor that can increase treatment-emergent suicidal behaviours is the dosage of antidepressant treatment. A very large cohort study examined the risk of deliberate self-harm in depressed patients treated with SSRIs. They found that using a high-therapeutic (rather than modal-therapeutic) dose doubled the risk of deliberate self-harm in children and young adults (Miller, Swanson, Azrael, Pate, & Stürmer, 2014). When we replicated their study in the LUEUR cohort, we found that suicidal ideas also worsened if SSRIs were given at a higher dose than

recommended. However, in our study the effect was independent of the age of the patient, and the worsening of suicidal ideas was also associated with the use of non-SSRI treatments (Courtet et al., 2014). This is to be pointed out as it is repeatedly observed that about a third of the patients start antidepressant treatments at high doses. Thus, we need to be careful in using SSRI as stated by Brent and Gibbons (2014).

Genetic predictors of TESI have also been investigated to improve the identification of patients at risk of TESI, and in order to define accurately the clinical phenotypes associated with a lack of response. Some of the genes that have been implicated code for: (i) ionotropic glutamate receptors GRIA3 and GRIK2 (Laje et al., 2007); (ii) noradrenergic system (alpha2A-adrenergic receptor); (iii) neurotrophic system: cyclic adenosine monophosphate response element binding (CREB1) (Perlis et al., 2007b), brain-derived neurotrophic factor (BDNF) and its receptor neurotrophic tyrosine kinase receptortype2 (NTRK2) (Perroud, et al. 2009); (iv) hypothalamic–pituitary axis system (FKBP5) (Brent et al., 2010); (v) inflammatory pathways (IL28 a-receptor); and (vi) new pathways such as papilin (PAPLN) (Laje et al., 2009). These candidate genes have also been implicated in other suicide studies irrespective of treatment. However, recent genome-wide association studies (GWAS) do not confirm these findings. In a GWAS based on the GENDEP database, the single-nucleotide polymorphism (SNP) that was most significantly associated with TESI was rs11143230, which is located 30 near a gene encoding guanine deaminase (GDA). Gene epistasis, gene gender and gene drug interactions were also described, but the 33 candidate genes they tested were not significantly associated with TESI after correction (Perroud et al., 2012). Another genome-wide association study found only some evidence connecting TESI with the GDA and FKBP5 genes mentioned above (Menke et al., 2012). Some of these genetic markers may be useful to predict TESI, but future studies with a clearly defined phenotype and larger samples are needed. Indeed, the lack of replication could be due to the use of different thresholds for suicidal ideation, non-specific instruments and small samples. A recent review of findings in GWAS studies about suicidal behaviour has been made by Sokolowsky, Wasserman and Wasserman (2014).

Suicidal Depressed Patients Are Poor Responders and Need New Treatments

Since the early 50s, suicide rates have not decreased, despite the fact that dozens of drugs have been released for the treatment of psychiatric disorders. Despite the strong evidence suggesting that treating depressed patients should decrease suicide rates, a study by Kessler et al. (2005) reported worrying data. When analysing trends in US representative data on suicidal ideation and attempts, and their treatment, from the National Comorbidity Surveys, they found no significant changes

occurred during the observed decade despite a dramatic increase in treatment. Recently, Valuck et al. (2016) reported in a retrospective cohort study that cohorts with depression had significantly higher suicide attempt risk than the general population, but the treated group did not differ significantly from the untreated group. If they concluded that "patients on antidepressants did not have significantly higher risk compared with untreated patients", the protective effect in treating depression still remains to be demonstrated. We can then question the interest of our strategies, particularly in treating psychiatric conditions to reduce suicide. What would we think if in the absence of treatment for myocardial infarction we will rely on prescribing statins?

As previously mentioned, it has also been suggested that a vulnerability for suicidal behaviours could predict poorer responses and/or symptoms worsening during antidepressant treatment (Malhotra, Schwartz, & Hameed, 2004). Due to this lack of appropriate RCTs, the best evidence comes from naturalistic studies. A study of the genome-based therapeutic drugs for depression (GENDEP) consortium compared antidepressants' response between suicide attempters and non-attempters (Perroud et al. 2010). Suicide attempters reported earlier, more severe and more frequent depressive episodes than non-attempters, as well as a higher number of antidepressants ever tried and more switches of medication during the follow-up. Although no difference in treatment response was found after 12 weeks of treatment, the authors concluded that suicide attempters should receive more intensive treatment to reduce the risk of SI. Kim et al. (2011) found that remission rates were lower among attempters, who also required longer times to achieve treatment response. In another study, Pompili et al. (2010) compared response between suicidal and non-suicidal depressed patients in a small sample of 82 depressed and treatment-resistant subjects under intravenous citalopram. Suicidal patients improved half as much as non-suicidal ones after 6 weeks and, independently of the diagnosis (unipolar or bipolar) and the severity of baseline depression, suicidal status was the only predictor of poor antidepressant response. Another large clinical study (STAR*D) has shown that baseline SI is associated with poorer outcomes (Zisook et al., 2009). In a recent study, Lopez-Castroman et al. (2016) examined the clinical responses to antidepressant treatment depending on suicidal status in a short-term (6 weeks) naturalistic study of a large cohort of depressed outpatients ($n = 4041$). They aimed at defining more precisely the response to antidepressants among suicidal patients and the threshold of suicidality that predicted a poor response. It was found that patients with SI or history of SAs at baseline showed higher scores of depression severity at the end of follow-up and attained remission less often than non-suicidal patients, beyond and over the role of associated factors such as the antidepressant class. The rate of remission after 6 weeks of treatment was approximately 34% for suicide attempters or active suicide ideators but 54% for non-attempters or non-ideators. Second, when considering baseline suicidal status, SI and a history of SA were the best predictors of non-remission. Importantly, the association of suicidal outcomes with a poor response was independent of other clinical variables of depression that are also predictive of treatment response, such as duration, type of antidepressant, number

of episodes and particularly baseline severity. Besides, clinician-rated SI seemed to be more predictive of poor treatment response than patient-rated SI. In conclusion, lifetime attempters and patients actively planning suicide at baseline were less likely to improve and to obtain remission, but not more likely to worsen after initiating an antidepressant treatment. Thus, antidepressant treatment seems to be less effective among those patients that need it most. The results of this study underline the need for clinical trials that include suicidal patients to investigate specific treatment options.

The serotonergic hypothesis of suicidal behaviour led to consider the use of SSRIs in the prevention of recurrent suicidal behaviour. Indeed, Verkes et al. (1998) nearly twenty years ago found that paroxetine was superior to placebo in reducing one-year reattempt rate in non-depressed suicide attempters. More recently, Grunebaum et al. (2012) performed a randomized controlled study in depressed suicidal patients (with current suicidal ideation, 60% presenting a history of suicide attempt) comparing paroxetine with bupropion (serotonergic vs. noradrenergic/dopaminergic agent). While the primary goal was not attained, exploratory analyses revealed a greater acute improvement of suicidal ideation with paroxetine, especially among the more severe ideators. Whereas this study did not compare the presence or absence of SI with regards to treatment response, their finding of a particular benefit with SSRIs in treating depressed suicidal patients contradicts the study carried out by the authors, where poor treatment response among suicidal patients was independent of the treatment class, and the study carried out by Pompili et al. (2010) using citalopram.

Tranquilization in the emergency room with benzodiazepines or antipsychotics is recommended for patients with high risk of suicide in order to alleviate the presuicidal syndrome and its warning signs (Rudd, 2008). However, no pharmacological treatment has been specifically approved for treating the imminent risk of a suicidal behaviour or a suicidal crisis. In other words, there is a lack of evidence concerning short-term treatment strategies in suicidal patients even though the greatest suicide risk is encountered in patients visiting emergency rooms, being hospitalized, or shortly after discharge. Besides, in patients with SI, the delayed onset of clinical response to conventional antidepressants can be life threatening (Griffiths, Zarate, & Rasimas, 2014). In a naturalistic study of a large population of depressed outpatients, it was observed that the decrease of SI was progressive all along the 6 weeks after initiation of the antidepressant treatment (Courtet, 2014). Despite some other representations clinicians may have, the problem is exactly the same with electroconvulsive therapy (ECT; Fink, Kellner, & McCall, 2014). In this study performed by the consortium for research in ECT (CORE), on 131 patients at high risk of acute suicide (active SI/suicidal act), a progressive resolution of suicidal ideation during ECT was reported. In this sample of patients at high risk, six sessions conducted over a period of two weeks were necessary before SI disappears in at least half of the patients.

As a whole these unmet needs regarding the availability of quickly efficient treatments for suicide risk led to the fifth aim of the National Action Alliance for Suicide Prevention Task Force's Research Prioritization, demanding the medical community "to find better ways to use existing biological treatment and improvement to find new ones to prevent suicide" (Griffiths et al., 2014).

Augmentation of Treatment in the Management of Suicidality

The simple use of antidepressants is not sufficient to protect against suicide. It is essential to seek new strategies for patients at risk. Randomized controlled studies in depressed patients at risk for suicide have been performed recently with the main objective of reducing the risk of suicide in the short term. This represents a great step, because for the first time these are not only post hoc analyses of classical clinical trials excluding patients at risk. The first one was performed by Khan et al. (2011), with 80 patients suffering from a major depression and a high level of suicidal ideation. This four-week randomized controlled study compared the adjunction of lithium or placebo to a citalopram treatment. Secondary analyses suggested that in a subgroup of patients assigned to citalopram and lithium who achieved therapeutic serum levels, suicidality remitted more often (45% compared to 19%, $p < 0.05$).

Two studies suggest the interest of combining antipsychotics with antidepressants to treat suicide risk. In a pilot study, Reeves et al. (2008) reported the efficacy of risperidone augmentation to antidepressants in the acute management of suicidality. Twenty-four depressed patients, who were suicidal despite taking an antidepressant, were enrolled in an 8-week double-blind controlled study comparing risperidone (0.25–2 mg/day) versus placebo. The main objective was the improvement of SI. Risperidone significantly reduced SI compared to placebo, the effects being evident at two weeks and held for eight weeks. The other study is the post hoc analysis of two 6-week trials ($n = 737$), in which antidepressant treatment was augmented with aripiprazole or placebo. Aripiprazole proved to be more effective in reducing SI (Weisler et al., 2011). The authors concluded that "adjunctive aripiprazole treatment in patients with depression is associated with a decreased rate of suicidality in a group of subjects not at significant risk".

In conclusion, preliminary data suggest that lithium or antipsychotics may be beneficial as an augmenting treatment in depressed patients presenting high-risk suicidal ideation. However, the relevant and significant results come from exploratory analyses or from small-sized pilot studies. In order to attain the "Objective 5", larger scale multicenter investigations on the efficacy of available agents for the treatment of depression with suicidality are strongly needed.

The Necessary Change of Paradigm in the Treatment of Suicidal Behaviour

A "suicidal behaviour disorder" appeared in the "conditions for further study" of the DSM-5 to promote further research on its validity at the clinical, pathophysiological and therapeutic levels. (Association, 2013) This category may help to investigate the possibilities offered by new promising pharmacological strategies against suicide risk (Griffiths, Zarate, & Rasimas, 2014). The new conceptions regarding emerging treatments are related to the research advances on the pathophysiology of suicide, a success of translational research (Courtet et al., 2011).

Evidence about the involvement of neuroinflammation and abnormalities of the glutamatergic system has been accumulated over the last years both at the genetic, peripheral and brain levels (Courtet et al., 2015). The existence of a chronic low-grade inflammation is consistent with the already known markers of the pathophysiology of suicide. Indeed, the increase of proinflammatory cytokines, via the kynurenine pathway, leads to an increased production of quinolinic acid, which is an agonist of NMDA receptors. This may disrupt the glutamatergic neurotransmission, particularly in the anterior cingulate, and provide a neurobiological explanation for the effect of ketamine. Ketamine blocks NMDA receptor transmission and can alleviate suicidal ideation and counteract inflammation (Erhardt et al., 2013).

The paradigm shift we are encountering in psychiatry has been brought by the demonstration of the spectacular efficacy of ketamine on suicidal ideation. As formulated by *Sanacora G, Schatzberg AF, Ketamine: promising path or false prophecy in the development of novel therapeutics for mood disorders?* (Sanacora & Schatzberg, 2015), how would psychiatrists consider "an agent administered intravenously, which is a street drug, works quickly, and developed by the industry for an intranasal use"? The rapid action of ketamine has inspired research efforts to explore its potential as a treatment to save the lives of patients with imminent risk of suicide. The conceptual revolution brought by ketamine is questioning the delayed neuroplasticity conveyed by antidepressants, which is related to their effects at the level of the hippocampus. Ketamine has an almost immediate impact on synaptogenesis (Lee et al., 2016). Its complex mechanism of action is the object of numerous studies that could be summarized as follows: inhibition of GABA interneurons causes an increase in glutamate transmission; stimulation of synaptic AMPA receptors; activation of mTOR and increasing BDNF function (Zarate & Niciu, 2015).

What is the evidence for the almost immediate anti-suicide effect of ketamine? This topic has been the subject of several very good review papers recently (Al Jurdi, Swann, & Mathew, 2015; Price & Mathew, 2015; Reinstatler & Youssef, 2015). In the first study, the effects of ketamine were examined on SI in patients with resistant depression (DiazGranados et al., 2010). Thirty-three subjects received a single infusion of ketamine (0.5 mg/kg), and SI was assessed at baseline at 40 min and for 4 h after infusion. In patients presenting SI at baseline, SI decreased

significantly and dramatically within the first 40 min and this effect remained significant during the four hours after infusion. At 40 min, only one of the ten patients continued to have significant SI. At 80 min, no participant had SI. Only one of the patients with lower baseline scores of suicidal ideation exhibited SI one day after infusion. These rapid and significant reductions of SI at 40 and 230 min after the infusion were subsequently replicated in another open study (Thakurta et al., 2012). To date, three randomized controlled trials versus placebo (or an active placebo, midazolam, with psychotomimetic effects but without antidepressant effects) have been published on this topic (Lee et al., 2016). Two of them analysed specifically the anti-suicidal effect, the other reanalysed data of a study in patients with resistant depression. The administration of ketamine followed the same pattern described above. Being controlled studies, patients at high risk of suicide were excluded. Price et al. (2014) aimed to assess the differential effects of ketamine compared with midazolam in resistant depression patients at baseline and 24 h after the infusion. SI scores were reduced in the ketamine group compared with midazolam, adjusting for baseline values, with a large effect size: 53% of patients treated with ketamine were not suicidal at 24 h compared with 24% of the group of midazolam and 7% of all patients at baseline. Of note, individuals with higher levels of suicidal ideation, as well as with a history of suicide attempt, showed the greatest differential effects with ketamine, suggesting that ketamine may be more effective in individuals with increased risk of suicide. Interestingly, this is the opposite of what we observed with conventional antidepressants (Lopez Castroman et al., 2016). The anti-suicide effects of ketamine have also been studied in routine clinical settings and in the emergency room. Two open studies were conducted in patients who attended the emergency room for suicidal ideation (Larkin & Beautrais, 2011). In this case, a single intravenous bolus of ketamine was prescribed. Suicidal ideation scores were significantly reduced 40 min after the administration. These patients, whether discharged or admitted, were monitored for four hours and surveyed daily for 10 days, and the benefits were maintained for 10 consecutive days after treatment. The effectiveness of this bolus infusion suggests that more studies are needed to confirm whether the slow infusions are indeed necessary and the best option. An important question remains: what to do after getting an immediate effect? The effect of a single injection may last 10 days as showed before. Another study has shown that repeated infusions three times a week allow the maintenance of response for a 12-day period (Price et al., 2009). The inclusion of additional measures could help to understand the neurocognitive mechanisms leading to the anti-suicidal effect of ketamine (Price & Mathew, 2015). It has been suggested that the dramatic effect on suicidal ideation was related only partially with the antidepressant effect (Ballard et al., 2014). Otherwise, ketamine appears to have effects on other risk factors, regardless of depressive symptoms, including anhedonia, hopelessness, psychological pain, agitation, impulsivity, cognitive and emotional regulation (Price & Mathew, 2015). Recent data suggest that these effects would be mediated, at least in part by neural circuits involved in cognitive processes relevant for executive functions and cognitive emotional processing (Ballard et al., 2015; Lee et al., 2016). A nasal spray containing

esketamine, which is a structural variant, obtained the status of "breakthrough" by the FDA in 2013 (Reardon, 2015). This designation allows the laboratory to accelerate the regulatory process. The development of intranasally administrated drugs is fashionable in psychiatry. Indeed, it has very beneficial effects (Andrade, 2015). Furthermore, it has been hypothesized for ketamine that a rapid deactivation of BA24, BA25 and/or insular cortex (located above the nasal epithelium) could block the perception of pain in vmPFC circuits, temporarily relieving psychological pain (Opler, Opler, & Arnsten, 2016).

There is a strong evidence of the determining role of pain, whether social, psychological or physical in suicidal behaviour. A meta-analysis showing that individuals with physical pain were more likely to report lifetime death wishes, both current and lifetime suicidal ideation, both current and lifetime suicidal plan, both current and lifetime suicide attempts, and even suicides was recently published (Calati et al., 2015). In another meta-analysis (20 studies), a higher intensity of psychological pain in subjects with current or previous attempted suicide in comparison to patients without any history of suicide attempt and in subjects with current suicidal ideation in comparison to non-ideators was reported. Importantly, it was found that the association remained significant when controlled by the degree of depression (Ducasse et al. submitted). All these considerations suggest that pain may be a key feature of the suicidal process (Klonsky, May, & Saffer, 2016). Pain perception, whatever would be the origin, would be increased in subjects carrying a suicidal vulnerability. Thus, in a study performed in a cohort from the general population, it was reported that opioid consumption was significantly higher in subjects with a past history of suicide attempt when compared with psychiatric as well as healthy controls, and after adjusting for numerous confounding factors (Olié et al., 2013). Other recent studies showed that opioid use in chronic pain patients increases the risk of completed suicide, particularly in subjects using high doses (Ilgen et al., 2016). Then, it may hypothesize that opioid consumption could represent an attempt to treat the suicide risk via its effects on the different types of pain endured by the patients. Growing evidence indicates that the μ-opioid receptor system, well known to dampen physical pain, is also involved in the modulation of social pain. Several recent imaging, pharmacological and experimental studies, suggest that μ-opioid receptors are involved in the modulation of emotional stress and social interactions (Hsu et al., 2015; Inagaki, Irwin, & Eisenberger, 2015). Furthermore, the μ-opioid system and social pain are implicated in suicidal behaviours. These observations indicate the interest that could represent drugs acting on the opioid system in the prevention of social pain and suicide (Lutz et al., 2015; Scarr et al., 2012). For example, a recent placebo controlled study showed that buprenorphine attenuated the biological (cortisol) and emotional responses to social stress in healthy individuals (Bershad et al., 2015). While these considerations are developing, an important study comparing an ultra-low dose of sublingual buprenorphine versus placebo has been just published. The sample is composed by high-risk patients with elevated suicidal ideation, two-thirds with a history of suicide attempt. The primary objective was the change in suicidal ideation at the end of each of the four weeks. According to this study, buprenorphine was superior to

placebo at the second and the fourth week of treatment Yovell et al. (2016). It also should be noted a decrease of psychic pain with buprenorphine and not with placebo. The concomitant use of antidepressants or a diagnosis of borderline personality disorder did not affect the response to buprenorphine. Last, patients could not present any substance abuse to be included, and there were no withdrawal symptoms after discontinuation of treatment at the end of the trial. Of note, ketamine also has weak affinity at mu opiate receptors.

Why are we waiting to use ketamine and opioids in suicidal patients? To the extent that no anti-suicide fast acting treatment is available and robust data are emerging, furthermore with some biological rationale, what could prevent clinicians to use ketamine and opioids now? Many papers recently pointed out the need to avoid rushing to use off-label ketamine (Al Jurdi et al., 2015; Loo, 2015; Zhang, Harris, & Ho, 2016). Indeed, before admitting this potential panacea in our therapeutic armamentarium, more research is needed. First, new studies should be performed without limiting biases such as excluding patients with an imminent risk of suicide or comorbid conditions. Second, answers to the following questions proposed by Abdallah, Averill, and Krystal (2015) are needed: Is the effect on suicidal ideation really beneficial on the morbidity and mortality from suicide? Is the anti-suicidal effect observed through diagnostic categories? What should be the optimal dose and the preferred route of administration? What are the frequency and dosage at which administration that becomes detrimental rather than beneficial? What is the treatment regimen to maintain the response? What are the biological mechanisms by which these agents confer protection against suicide? What would be the interest of combination therapy with other preventive strategies (e.g. cognitive behavioural therapy)?

We are certainly living an important period for suicidology and particularly for the near arrival of efficient treatments of suicidal behaviour. For the first time, numerous ongoing clinical trials aim at defining the best treatment for suicide risk. As summarized by Al Jurdi et al. (2015), Lee et al. (2016) ClinicalTrials.gov includes a large number of ongoing active clinical trials investigating ketamine for its anti-suicidal effects on populations of depressed and bipolar subjects, using various methods of administration, both in inpatient and outpatient units and emergency departments. Moreover, there is now an interest for other potentially innovative agents acting on the glutamatergic system.

References

Abdallah, C. G., Averill, L. A., & Krystal, J. H. (2015). Ketamine as a promising prototype for a new generation of rapid-acting antidepressants. *Annals of the New York Academy of Sciences, 1344*(1), 66–77.

Al Jurdi, R. K., Swann, A., & Mathew, S. J. (2015). Psychopharmacological agents and suicide risk reduction: Ketamine and other approaches. *Current Psychiatry Reports, 17*(10), 81.

Andrade, C. (2015). Intranasal drug delivery in neuropsychiatry: Focus on intranasal ketamine for refractory depression. *The Journal of Clinical Psychiatry, 76*(5), 628–631.

Arroll, B., Elley, C. R., Fishman, T., Goodyear-Smith, F. A., Kenealy, T., Blashki, G., … MacGillivray, S. (2009). *Antidepressants versus placebo for depression in primary care. In Cochrane Database of Systematic Reviews*. John Wiley & Sons, Ltd. Consulté à l'adresse http://onlinelibrary.wiley.com.gate2.inist.fr/doi/10.1002/14651858.CD007954/abstract.

Association, A. P. (2013). *Diagnostic and statistical manual of mental disorders (DSM-5®)*. Arlington: American Psychiatric Pub.

Ballard, E. D., Ionescu, D. F., Vande Voort, J. L., Niciu, M. J., Richards, E. M., Luckenbaugh, D. A., … Zarate, C. A. (2014). Improvement in suicidal ideation after ketamine infusion: Relationship to reductions in depression and anxiety. *Journal of Psychiatric Research, 58*, 161–166.

Ballard, E. D., Lally, N., Nugent, A. C., Furey, M. L., Luckenbaugh, D. A., & Zarate, C. A. (2015). Neural correlates of suicidal ideation and its reduction in depression. *The International Journal of Neuropsychopharmacology/Official Scientific Journal of the Collegium Internationale Neuropsychopharmacologicum (CINP), 18*(1).

Beasley, C. M., Jr. (1991). Fluoxetine and suicide. *BMJ: British Medical Journal, 303*(6811), 1200.

Bershad, A. K., Jaffe, J. H., Childs, E., & de Wit, H. (2015). Opioid partial agonist buprenorphine dampens responses to psychosocial stress in humans. *Psychoneuroendocrinology, 52*(1), 281–288.

Brent, D. A., & Gibbons, R. (2014). Initial dose of antidepressant and suicidal behaviour in youth: start low, go slow. *JAMA Internal Medicine, 174*(6), 909–911.

Brent, D., Melhem, N., Ferrell, R., Emslie, G., Wagner, K. D., Ryan, N., … Keller, M. (2010). Association of FKBP5 polymorphisms with suicidal events in the Treatment of Resistant Depression in Adolescents (TORDIA) study. *The American Journal of Psychiatry, 167*(2), 190–197.

Calati, R., Laglaoui Bakhiyi, C., Artero, S., Ilgen, M., & Courtet, P. (2015). The impact of physical pain on suicidal thoughts and behaviours: Meta-analyses. *Journal of Psychiatric Research, 71,* 16–32.

Cougnard, A., Verdoux, H., Grolleau, A., Moride, Y., Begaud, B., & Tournier, M. (2009). Impact of antidepressants on the risk of suicide in patients with depression in real-life conditions: A decision analysis model. *Psychological Medicine, 39*(08), 1307–1315.

Courtet, P., Giner, L., Seneque, M., Guillaume, S., Olie, E., & Ducasse, D. (2015). Neuroinflammation in suicide: Toward a comprehensive model. *The World Journal of Biological Psychiatry: The Official Journal of the World Federation of Societies of Biological Psychiatry, 17*(8), 1–23.

Courtet, P., Gottesman, I. I., Jollant, F., & Gould, T. D. (2011). The neuroscience of suicidal behaviours: What can we expect from endophenotype strategies? *Translational Psychiatry, 1*(5), e7.

Courtet, P., Jaussent, I., Lopez-Castroman, J., & Gorwood, P. (2014a). Poor response to antidepressants predicts new suicidal ideas and behaviour in depressed outpatients. *European Neuropsychopharmacology: The Journal of the European College of Neuropsychopharmacology, 24*(10), 1650–1658.

Courtet, P., Lopez-Castroman, J., Jaussent, I., & Gorwood, P. A. P. M. (2014b). Antidepressant dosage and suicidal ideation. *JAMA Internal Medicine, 174*(11), 1863–1865.

Courtet, P., & Olié, É. (2014). Antidepressants do prevent suicide, at least pending something better. *Bulletin De l'Académie Nationale De Médecine, 198*(4–5), 881–892.

DeRubeis, R. J., Hollon, S. D., Amsterdam, J. D., Shelton, R. C., Young, P. R., Salomon, R. M., … Gallop, R. (2005). Cognitive therapy vs medications in the treatment of moderate to severe depression. *Archives of General Psychiatry, 62*(4), 409–416.

DiazGranados, N., Ibrahim, L. A., Brutsche, N. E., Ameli, R., Henter, I. D., Luckenbaugh, D. A., … Zarate, C. A. (2010). Rapid resolution of suicidal ideation after a single infusion of an

N-methyl-D-aspartate antagonist in patients with treatment-resistant major depressive disorder. *The Journal of Clinical Psychiatry, 71*(12), 1605–1611.

Erhardt, S., Lim, C. K., Linderholm, K. R., Janelidze, S., Lindqvist, D., Samuelsson, M., … Brundin, L. (2013). Connecting inflammation with glutamate agonism in suicidality. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology, 38*(5), 743–752.

Fink, M., Kellner, C. H., & McCall, W. V. (2014). The role of ECT in suicide prevention. *The Journal of ECT, 30*(1), 5–9.

Gibbons, R. D., Brown, C. H., Hur, K., Davis, J., & Mann, J. J. (2012). Suicidal thoughts and behaviour with antidepressant treatment: Reanalysis of the randomized placebo-controlled studies of fluoxetine and venlafaxine. *Archives of General Psychiatry, 69*(6), 580–587.

Gibbons, R. D., Brown, C. H., Hur, K., Marcus, S. M., Bhaumik, D. K., Erkens, J. A., … Mann, J. J. (2007). Early evidence on the effects of regulators' suicidality warnings on SSRI prescriptions and suicide in children and adolescents. *The American Journal of Psychiatry, 164*(9), 1356–1363.

Greden, J. F. (2001). The burden of recurrent depression: Causes, consequences, and future prospects. *The Journal of Clinical Psychiatry, 62*(22), 5–9.

Griffiths, J. J., Zarate, C. A., & Rasimas, J. J. (2014). Existing and novel biological therapeutics in suicide prevention. *American Journal of Preventive Medicine, 47*(3), S195–S203.

Grunebaum, M. F., Ellis, S. P., Duan, N., Burke, A. K., Oquendo, M. A., & John Mann, J. (2012). Pilot randomized clinical trial of an SSRI vs bupropion: Effects on suicidal behaviour, ideation, and mood in major depression. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology, 37*(3), 697–706.

Grunebaum, M. F., Keilp, J. G., Ellis, S. P., Sudol, K., Bauer, N., Burke, A. K., … Mann, J. J. (2013). SSRI versus bupropion effects on symptom clusters in suicidal depression: post hoc analysis of a randomized clinical trial. *The Journal of Clinical Psychiatry, 74*(9), 872–879.

Gusmão, R., Quintão, S., McDaid, D., Arensman, E., Van Audenhove, C., Coffey, C., … Hegerl, U. (2013). Antidepressant utilization and suicide in Europe: An ecological multi-national study. *PloS ONE, 8*(6), e66455.

Hammad, T. A., Laughren, T. P., & Racoosin, J. A. (2006a). Suicide rates in short-term randomized controlled trials of newer antidepressants. *Journal of Clinical Psychopharmacology, 26*(2), 203–207.

Hammad, T. A., Laughren, T., & Racoosin, J. (2006b). Suicidality in pediatric patients treated with antidepressant drugs. *Archives of General Psychiatry, 63*(3), 332–339.

Hieronymus, F., Emilsson, J. F., Nilsson, S., & Eriksson, E. (2016). Consistent superiority of selective serotonin reuptake inhibitors over placebo in reducing depressed mood in patients with major depression. *Molecular Psychiatry, 21*(4), 523–530.

Hsu, D. T., Sanford, B. J., Meyers, K. K., Love, T. M., Hazlett, K. E., Walker, S. J., … Zubieta, J.-K. (2015). It still hurts: Altered endogenous opioid activity in the brain during social rejection and acceptance in major depressive disorder. *Molecular Psychiatry, 20*(2), 193–200.

Ilgen, M. A., Bohnert, A. S. B., Ganoczy, D., Bair, M. J., McCarthy, J. F., & Blow, F. C. (2016). Opioid dose and risk of suicide. *Pain, 157*(5), 1079–1084.

Inagaki, T. K., Irwin, M. R., & Eisenberger, N. I. (2015). Blocking opioids attenuates physical warmth-induced feelings of social connection. *Emotion, 15*(4), 494–500.

Isacsson, G., Holmgren, A., Osby, U., & Ahlner, J. (2009). Decrease in suicide among the individuals treated with antidepressants: A controlled study of antidepressants in suicide, Sweden 1995–2005. *Acta Psychiatrica Scandinavica, 120*(1), 37–44.

Josef Hättenschwiler, P. B. (2007). Les antidépresseurs favorisent-ils la suicidalité et le suicide chez les individus dépressifs. *Forum Med Suisse, 7,* 757–764.

Katz, L. Y., Kozyrskyj, A. L., Prior, H. J., Enns, M. W., Cox, B. J., & Sareen, J. (2008). Effect of regulatory warnings on antidepressant prescription rates, use of health services and outcomes among children, adolescents and young adults. *CMAJ: Canadian Medical Association Journal, 178*(8), 1005–1011.

Kessler, R. C., Berglund, P., Borges, G., Nock, M., & Wang, P. S. (2005). Trends in suicide ideation, plans, gestures, and attempts in the United States, 1990–1992 to 2001–2003. *JAMA, 293*(20), 2487–2495.

Khan, A., Khan, S. R. F., Hobus, J., Faucett, J., Mehra, V., Giller, E. L., & Rudolph, R. L. (2011). Differential pattern of response in mood symptoms and suicide risk measures in severely ill depressed patients assigned to citalopram with placebo or citalopram combined with lithium: Role of lithium levels. *Journal of Psychiatric Research, 45*(11), 1489–1496.

Kim, S.-W., Stewart, R., Kim, J.-M., Shin, I.-S., Yoon, J.-S., Jung, S.-W., … Jun, T.-Y. (2011). Relationship between a history of a suicide attempt and treatment outcomes in patients with depression. *Journal of Clinical Psychopharmacology, 31*(4), 449–456.

Klonsky, E. D., May, A. M., & Saffer, B. Y. (2016). Suicide, suicide attempts, and suicidal ideation. *Annual Review of Clinical Psychology, 12,* 307–330.

Kurdyak, P. A., Juurlink, D. N., & Mamdani, M. M. (2007). The effect of antidepressant warnings on prescribing trends in Ontario, Canada. *American Journal of Public Health, 97*(4), 750–754.

Kurian, B. T., Ray, W. A., Arbogast, P. G., Fuchs, D. C., Dudley, J. A., & Cooper, W. O. (2007). Effect of regulatory warnings on antidepressant prescribing for children and adolescents. *Archives of Pediatrics and Adolescent Medicine, 161*(7), 690–696.

Laje, G., Allen, A. S., Akula, N., Manji, H., John Rush, A., & McMahon, F. J. (2009). Genome-wide association study of suicidal ideation emerging during citalopram treatment of depressed outpatients. *Pharmacogenetics and Genomics, 19*(9), 666–674.

Laje, G., Paddock, S., Manji, H., Rush, A. J., Wilson, A. F., Charney, D., & McMahon, F. J. (2007). Genetic markers of suicidal ideation emerging during citalopram treatment of major depression. *The American Journal of Psychiatry, 164*(10), 1530–1538.

Larkin, G. L., & Beautrais, A. L. (2011). A preliminary naturalistic study of low-dose ketamine for depression and suicide ideation in the emergency department. *The International Journal of Neuropsychopharmacology/Official Scientific Journal of the Collegium Internationale Neuropsychopharmacologicum (CINP), 14*(8), 1127–1131.

Laughren, T. P. (2006). Memorandum Department of Health and Human Services Public Health Service Food and Drug Administration Center for Drug Evaluation and Research.

Lee, Y., Syeda, K., Maruschak, N. A., Cha, D. S., Mansur, R. B., Wium-Andersen, I. K., … McIntyre, R. S. (2016). A new perspective on the anti-suicide effects with ketamine treatment: A procognitive effect. *Journal of Clinical Psychopharmacology, 36*(1), 50–56.

Libby, A. M., Brent, D. A., Morrato, E. H., Orton, H. D., Allen, R., & Valuck, R. J. (2007). Decline in treatment of pediatric depression after FDA advisory on risk of suicidality with SSRIs. *The American Journal of Psychiatry, 164*(6), 884–891.

Loo, C. (2015). Is ketamine ready to be used clinically for the treatment of depression? *The Medical Journal of Australia, 203*(11), 425.

Lopez-Castroman, J., Jaussent, I., Gorwood, P., & Courtet, P. (2016). Suicidal depressed patients respond less well to antidepressants in the short term. *Depression and Anxiety, 33*(6), 483–494.

Lu, C. Y., Zhang, F., Lakoma, M. D., Madden, J. M., Rusinak, D., Penfold, R. B., … Soumerai, S. B. (2014). Changes in antidepressant use by young people and suicidal behaviour after FDA warnings and media coverage: quasi-experimental study. *BMJ (Ed.)* 348, g3596.

Ludwig, J., Marcotte, D. E., & Norberg, K. (2009). Anti-depressants and suicide. *Journal of Health Economics, 28*(3), 659–676.

Lutz, P.-E., Zhou, Y., Labbe, A., Mechawar, N., & Turecki, G. (2015). Decreased expression of nociceptin/orphanin FQ in the dorsal anterior cingulate cortex of suicides. *European Neuropsychopharmacology: The Journal of the European College of Neuropsychopharmacology, 25*(11), 2008–2014.

Malhotra, K., Schwartz, T., & Hameed, U. (2004). Presence of suicidality as a prognostic indicator. *Journal of Postgraduate Medicine, 50*(3), 185–187; discussion 187–188.

Menke, A., Domschke, K., Czamara, D., Klengel, T., Hennings, J., Lucae, S., … Binder, E. B. (2012). Genome-wide association study of antidepressant treatment-emergent suicidal ideation. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology, 37*(3), 797–807.

Miller, M., Swanson, S. A., Azrael, D., Pate, V., & Stürmer, T. (2014). Antidepressant dose, age, and the risk of deliberate self-harm. *JAMA Internal Medicine, 174*(6), 899–909.

Nagar, S., Mehta, S., Bhatara, V., & Aparasu, R. (2010). Health care consequences of black-box warnings for antidepressants in the United States and Canada. *Research in Social and Administrative Pharmacy, 6*(1), 78–84.

Nemeroff, C. B., Kalali, A., Keller, M. B., Charney, D. S., Lenderts, S. E., Cascade, E. F., … Schatzberg, A. F. (2007). Impact of publicity concerning pediatric suicidality data on physician practice patterns in the United States. *Archives of General Psychiatry, 64*(4), 466–472.

Olfson, M., Marcus, S. C., & Druss, B. G. (2008). Effects of Food and Drug Administration warnings on antidepressant use in a national sample. *Archives of General Psychiatry, 65*(1), 94–101.

Olié, E., Courtet, P., Poulain, V., Guillaume, S., Ritchie, K., & Artero, S. (2013). History of suicidal behaviour and analgesic use in community-dwelling elderly. *Psychotherapy and Psychosomatics, 82*(5), 341–343.

Opler, L. A., Opler, M. G. A., & Arnsten, A. F. T. (2016). Ameliorating treatment-refractory depression with intranasal ketamine: Potential NMDA receptor actions in the pain circuitry representing mental anguish. *CNS Spectrums, 21*(1), 12–22.

Perlis, R. H., Beasley, C. M., Wines, J. D., Tamura, R. N., Cusin, C., Shear, D., … Fava, M. (2007a). Treatment-associated suicidal ideation and adverse effects in an open, multicenter trial of fluoxetine for major depressive episodes. *Psychotherapy and Psychosomatics, 76*(1), 40–46.

Perlis, R. H., Purcell, S., Fava, M., Fagerness, J., Rush, A. J., Trivedi, M. H., et al. (2007b). Association between treatment-emergent suicidal ideation with citalopram and polymorphisms near cyclic adenosine monophosphate response element binding protein in the STAR*D study. *Archives of General Psychiatry, 64*(6), 689–697.

Perlis, R. H., Uher, R., Perroud, N., & Fava, M. (2012). Do suicidal thoughts or behaviours recur during a second antidepressant treatment trial? *The Journal of Clinical Psychiatry, 73*(11), 1439–1442.

Perroud, N., Aitchison, K. J., Uher, R., Smith, R., Huezo-Diaz, P., Marusic, A., … Craig, I. (2009). Genetic predictors of increase in suicidal ideation during antidepressant treatment in the GENDEP project. *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology, 34*(12), 2517–2528.

Perroud, N., Uher, R., Hauser, J., Rietschel, M., Henigsberg, N., Placentino, A., … Farmer, A. (2010). History of suicide attempts among patients with depression in the GENDEP project. *Journal of Affective Disorders,* 123(1–3), 131–137.

Perroud, N., Uher, R., Marusic, A., Rietschel, M., Mors, O., Henigsberg, N., … Aitchison, K. J. (2009). Suicidal ideation during treatment of depression with escitalopram and nortriptyline in genome-based therapeutic drugs for depression (GENDEP): A clinical trial. *BMC Medicine, 7*, 60.

Perroud, N., Uher, R., Ng, M. Y. M., Guipponi, M., Hauser, J., Henigsberg, N., … McGuffin, P. (2012). Genome-wide association study of increasing suicidal ideation during antidepressant treatment in the GENDEP project. *The Pharmacogenomics Journal, 12*(1), 68–77.

Pompili, M., Baldessarini, R. J., Tondo, L., Innamorati, M., Tatarelli, R., Girardi, P., & De Pisa, E. (2010). Response to intravenous antidepressant treatment by suicidal vs. nonsuicidal depressed patients. *Journal of Affective Disorders, 122*(1–2), 154–158.

Price, R. B., Iosifescu, D. V., Murrough, J. W., Chang, L. C., Al Jurdi, R. K., Iqbal, S. Z., … Mathew, S. J. (2014). Effects of ketamine on explicit and implicit suicidal cognition: A randomized controlled trial in treatment-resistant depression. *Depression and Anxiety, 31*(4), 335–343.

Price, R. B., & Mathew, S. J. (2015). Does ketamine have anti-suicidal properties? Current status and future directions. *CNS Drugs, 29*(3), 181–188.

Price, R. B., Nock, M. K., Charney, D. S., & Mathew, S. J. (2009). Effects of intravenous ketamine on explicit and implicit measures of suicidality in treatment-resistant depression. *Biological Psychiatry, 66*(5), 522–526.

Reardon, S. (2015). Rave drug tested against depression. *Nature, 517*(7533), 130–131.

Reeves, H., Batra, S., May, R. S., Zhang, R., Dahl, D. C., & Li, X. (2008). Efficacy of risperidone augmentation to antidepressants in the management of suicidality in major depressive disorder: A randomized, double-blind, placebo-controlled pilot study. *The Journal of Clinical Psychiatry, 69*(8), 1228–1336.

Reinstatler, L., & Youssef, N. A. (2015). Ketamine as a potential treatment for suicidal ideation: A systematic review of the literature. *Drugs in R&D, 15*(1), 37–43.

Research, C. for D. E. and. (s. d.). Postmarket drug safety information for patients and providers-worsening depression and suicidality in patients being treated with antidepressants [WebContent]. Retrieved from http://www.fda.gov/Drugs/DrugSafety/PostmarketDrugSafetyInformationforPatientsandProviders/ucm161696.htm.

Rudd, M. D. (2008). Suicide warning signs in clinical practice. *Current Psychiatry Reports, 10*(1), 87–90.

Sanacora, G., & Schatzberg, A. F. (2015). Ketamine: Promising path or false prophecy in the development of novel therapeutics for mood disorders? *Neuropsychopharmacology: Official Publication of the American College of Neuropsychopharmacology, 40*(2), 259–267.

Scarr, E., Money, T. T., Pavey, G., Neo, J., & Dean, B. (2012). Mu opioid receptor availability in people with psychiatric disorders who died by suicide: A case control study. *BMC Psychiatry, 12,* 126.

Seemüller, F., Riedel, M., Obermeier, M., Bauer, M., Adli, M., Mundt, C., … Möller, H. J. (2009). The controversial link between antidepressants and suicidality risks in adults: Data from a naturalistic study on a large sample of in-patients with a major depressive episode. *The International Journal of Neuropsychopharmacology/Official Scientific Journal of the Collegium Internationale Neuropsychopharmacologicum (CINP), 12*(2), 181–189.

Sokolowski, M., Wasserman, J., & Wasserman, D. (2014). Genome-wide association studies of suicidal behaviours: A review. *European Neuropsychopharmacology: The Journal of the European College of Neuropsychopharmacology, 24*(10), 1567–1577.

Souery, D., Oswald, P., Massat, I., Bailer, U., Bollen, J., Demyttenaere, K., … Group for the Study of Resistant Depression. (2007). Clinical factors associated with treatment resistance in major depressive disorder: results from a European multicenter study. *The Journal of Clinical Psychiatry, 68*(7), 1062–1070

Teicher, M. H., Glod, C., & Cole, J. O. (1990). Emergence of intense suicidal preoccupation during fluoxetine treatment. *The American Journal of Psychiatry, 147*(2), 207–210.

Thakurta, R. G., Das, R., Bhattacharya, A. K., Saha, D., Sen, S., Singh, O. P., & Bisui, B. (2012). Rapid response with ketamine on suicidal cognition in resistant depression. *Indian Journal of Psychological Medicine, 34*(2), 170–175.

Valuck, R. J., Libby, A. M., Anderson, H. D., Allen, R. R., Strombom, I., Marangell, L. B., & Perahia, D. (2016). Comparison of antidepressant classes and the risk and time course of suicide attempts in adults: Propensity matched, retrospective cohort study. *The British Journal of Psychiatry: The Journal of Mental Science, 208*(3), 271–279.

Valuck, R. J., Libby, A. M., Orton, H. D., Morrato, E. H., Allen, R., & Baldessarini, R. J. (2007). Spillover effects on treatment of adult depression in primary care after FDA advisory on risk of pediatric suicidality with SSRIs. *The American Journal of Psychiatry, 164*(8), 1198–1205.

Verkes, R. J., Van der Mast, R. C., Hengeveld, M. W., Tuyl, J. P., Zwinderman, A. H., & Van Kempen, G. M. (1998). Reduction by paroxetine of suicidal behaviour in patients with repeated suicide attempts but not major depression. *The American Journal of Psychiatry, 155*(4), 543–547.

Wallis, L. (2014). Caution over antidepressants may have backfired. *The American Journal of Nursing, 114*(9), 16.

Weisler, R. H., Khan, A., Trivedi, M. H., Yang, H., Eudicone, J. M., Pikalov, A., … Carlson, B. X. (2011). Analysis of suicidality in pooled data from 2 double-blind, placebo-controlled aripiprazole adjunctive therapy trials in major depressive disorder. *The Journal of Clinical Psychiatry, 72*(4), 548–555.

Yovell, Y., Bar, G., Mashiah, M., Baruch, Y., Briskman, I., Asherov, J., … Panksepp, J. (2016). Ultra-low-dose buprenorphine as a time-limited treatment for severe suicidal ideation: A randomized controlled trial. *The American Journal of Psychiatry, 173*(5), 491–498.

Zarate, C. A., & Niciu, M. J. (2015). Ketamine for depression: Evidence, challenges and promise. *World Psychiatry: Official Journal of the World Psychiatric Association (WPA), 14*(3), 348–350.

Zhang, M. W., Harris, K. M., & Ho, R. C. (2016). Is off-label repeat prescription of ketamine as a rapid antidepressant safe? Controversies, ethical concerns, and legal implications. *BMC Medical Ethics, 17,* 4.

Zisook, S., Trivedi, M. H., Warden, D., Lebowitz, B., Thase, M. E., Stewart, J. W., … Rush, A. J. (2009). Clinical correlates of the worsening or emergence of suicidal ideation during SSRI treatment of depression: An examination of citalopram in the STAR*D study. *Journal of Affective Disorders, 117*(1–2), 63–73.

Chapter 19
Self-oriented Perfectionism and Socially Prescribed Perfectionism Add Incrementally to the Prediction of Suicide Ideation Beyond Hopelessness: A Meta-Analysis of 15 Studies

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> *The worst death for anyone is to lose the centre of his being, the thing he really is…. Whether by choice or by fate, to retire from what you do—and makes you what you are—is to back up into the grave.*
>
> —Ernest Hemingway (Hotchner, 2004, p. 228).

Introduction

In 1954, Ernest Hemingway achieved his lifelong dream—the Nobel Prize for English literature. However, this prestigious award brought him little satisfaction. Seven years later, Hemingway attempted suicide and was admitted to a psychiatric hospital. But Hemingway's psychiatric admission did little to assuage his suicidal thinking. On the contrary, Hemingway believed the electroshock therapy he received during his hospitalization had robbed him of his ability to write and as such the "centre of his being". In his own words, in response to a friend trying to convince him that he still had much to live for, Hemingway said, "What does a man

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care for? Staying healthy. Working good. Eating and drinking with friends… I haven't any of them. Do you understand god damn it? None of them" (Rubinstein, 1988, p. 508). And on July 2nd, 1961, two days after being discharged, Hemingway woke up early, put on his red robe, and looked for the key to his hunting cabinet; his fourth wife, Mary Welsh, had hidden the key knowing his suicidal intent. Unfortunately, Hemingway found the key, unlocked his gun cabinet, loaded his favourite shotgun, placed the butt of the gun on the floor, put the cold steel inside his mouth, and then pulled the trigger.

What was it about this remarkably talented and accomplished man that caused his untimely suicide? Was it Hemingway's pervading sense of hopelessness? Hopelessness and suicide go hand in hand (Minkoff, Bergman, Beck, & Beck, 1973)—people beset by suicidal thoughts rarely, if ever, see their future as brimming with hope. In fact, Hemingway once mused that his life was "like being in a Kafka nightmare. I'm bone tired and very beat up emotionally" (Trogdon, 2006, p. 273). Alternatively, over 20 years of research implicates perfectionism in suicide (Blatt, 1995; Flett, Hewitt, & Heisel, 2014; O'Connor, 2007). Might Hemingway's rigid need to meet his own and other's perfectionistic standards have contributed to his suicide? We aimed to answer such questions by meta-analysing research on perfectionism, hopelessness, and suicide ideation and testing if self-oriented perfectionism, other-oriented perfectionism, and socially prescribed perfectionism predict suicide ideation beyond hopelessness.

What Is Perfectionism?

Hewitt and Flett (1991) conceptualized perfectionism as a multidimensional personality trait composed of three dimensions: self-oriented, other-oriented, and socially prescribed perfectionism. Self-oriented perfectionism characterizes striving rigidly for perfection and is a double-edged construct. On the one hand, self-oriented perfectionism is sometimes associated with positive characteristics such as conscientiousness (Stoeber, Corr, Smith, & Saklofske, in press) and trait emotional intelligence (Smith, Saklofske, & Yan, 2015a, b). On the other hand, self-oriented perfectionism places people at risk for longitudinal increases in depressive symptoms (Smith, Saklofske, Stoeber, & Sherry, 2016). In contrast, other-oriented perfectionism involves demanding perfection from others (Hewitt & Flett, 1991) and represents a dark form of perfectionism given its relationship with narcissism (Smith et al., 2016a) and other uncaring personality characteristics such as psychopathy (Flett, Hewitt, & Sherry, 2016a, b). Socially prescribed perfectionism characterizes a tendency to perceive others as demanding perfection (Hewitt & Flett, 1991) and consistently shows strong associations with indicators of psychological distress such as depression (Smith, Saklofske, Yan, & Sherry, in press; Smith et al., 2016b; see Flett & Hewitt, 2015 for a review).

To illustrate, consider a prototypical perfectionist—Ernest Hemingway. Hemingway experienced intense self-oriented perfectionism. "Good enough" was

not in Hemingway's repertoire. And as Yolem observed (1971, p. 481), "rather than expectations, he [Hemingway] forged a set of restrictive demands upon himself, a tyrannical and inexorable dialogue which pervaded all areas of his inner worlds".

Hemingway also experienced intense other-oriented perfectionism. He "saw in others those aspects he rejected in himself and often responded to the other person quite vitriolically" (Yalom, 1971). For instance, after learning that his friend, F. Scott Fitzgerald, had modified a short story for a magazine, Hemingway lamented "I had been shocked at this and I said I thought it was whoring…I said that I did not believe anyone could write anything except the very best he could" (Hemingway & Bruccoli, 1986). And when asked what he considered the best intellectual training for a would-be writer, Hemingway replied "Let's say that he should go out and hang himself because he finds that writing well is impossibly difficult. Then he should be cut down without mercy and forced by his own self to write as well as he can for the rest of his life" (Hemingway & Bruccoli, 1986).

Finally, Hemingway was plagued by socially prescribed perfectionism and perceived severe external pressures to be perfect. He "was so tormented by adverse criticism of his writing that only a foolhardy friend would dare offer anything resembling authentic appraisal" (Yalom, 1971, p. 488). For Hemingway, critics were vultures waiting to strike at the first sign of weakness—they were "men who watch a battle from a high place and then come down to shoot the survivors" (Hemingway & Bruccoli, 1986).

Conceptualizing Suicide Ideation

Suicide ideation involves suicidal thoughts, intents, threats, plans, and other non-physical actions (Kessler, Berglund, Borges, Nock, & Wang, 2005). Each year, approximately 8 million Americans report having suicidal thoughts and nearly 2 million Americans report making plans for suicide (Crosby, Gfroerer, Han, Ortega, & Parks, 2011). Given that suicidal ideations confer risk for completed suicide (Brown, Beck, Steer, & Grisham, 2000; Brown, Steer, Henriques, & Beck, 2005), suicide ideations are considered a major public health concern with wide-reaching consequences (Rudd, 1989).

Perfectionism, Hopelessness, and Suicide Ideation

Over 25 years of theory, case histories, and empirical research implicate perfectionism as a contributing factor in suicide (Baumeister, 1990; Blatt, 1995; Flett et al., 2014; Hassan, Flett, Ganguli, & Hewitt, 2014; Kiamanesh, Dyregrov, Haavind, & Dieserud, 2014; O'Connor, 2007). But, why do perfectionists think more about ending their lives than non-perfectionists? One possibility is hopelessness. Hopelessness—negative expectations concerning the self and the future

(Beck, Weissman, Lester, & Trexler, 1974)—shows consistent links with perfectionism (Flett et al., 2014). And in extreme forms, perfectionism fosters hopelessness due to a sense that perfect performance will only lead others to expect more (Hewitt & Flett, 1991; Flett et al., 2014).

Hopelessness also predicts suicide ideation across clinical (Beck, Steer, Kovacs, & Garrison, 1985; Young et al., 1996) and non-clinical populations (Young et al., 1996). Moreover, hopelessness is a stronger predictor of suicide relative to other established predictors such as depression (Salter & Platt, 1990). For instance, Beck et al. (1985) intensively studied a group of patients hospitalized for suicide ideation, but not for attempts, at the time of admission. During the preceding 10 years, Beck et al. (1985) found that 14 patients from their original sample completed suicide. And hopelessness, but not depression, predicted the eventual suicides.

Hopelessness also pervades Hemingway's work. Part of what makes Hemingway's suicide so troubling is that he lived out the hopeless decline he had foreseen since his early youth. In a semi-autobiographical short story written 25 years prior to his death—*The Snows of Kilimanjaro* (Hemingway, 1961)—Hemingway portrayed himself as the dying hero, Harry, whose success and wealth do little to console him as he is devoured by hyenas. Indeed, Harry bemoans that "He had destroyed his talent himself…. He had destroyed his talent by not using it…by drinking so much that he blunted the edge of his perceptions, by laziness, by sloth, and by snobbery, by pride and by prejudice, by hook and by crook" (Hemingway, 1961). Nevertheless, Hemingway's profound sense of hopelessness paints an incomplete picture of why perfectionists contemplate and sometimes act on suicide.

Perfectionism contains elements that bestow risk for suicide ideation that are neither redundant with, nor fully captured by, hopelessness. Specifically, perfectionists are their own worst critics. And perfectionists like Hemingway are often locked in an endless loop of self-defeating over-striving, in which each new task is yet another opportunity for disappointment. Perfectionists also engage in all-or-none thinking (DiBartolo, Frost, Chang, LaSota, & Grills, 2004; Dunkley & Grilo, 2007; Struman, Flett, Hewitt, & Rudolph, 2009). Things are perfect or imperfect, with no in-between. Consequently, perfectionists typically view setbacks, such as an inability to write, as major catastrophes, which in extreme circumstances are seen as warranting death (Blatt, 1995; Flett et al., 2014; Hewitt, Flett, Sherry, & Caelian, 2006; O'Connor, 2007).

In addition, the stress-diathesis model posits perfectionists are at risk for suicide due to their tendency to experience stressors as more ego-involving and distressing (Hewitt & Flett, 1993, 2002). Hemingway's increasing struggles to write—and to demonstrate his excellence—represented a major achievement stressor for him (Yalom, 1971). Finally, perfectionists like Hemingway struggle to partake in and benefit from stable interpersonal relationships. Indeed, Hemingway famously stated that "the only thing that can spoil a day is people, and if you can keep from making engagements, every day has no limits" (Hemingway & Bruccoli, 1986). And this profound sense of social disconnection often leaves perfectionists feeling isolated, alienated, alone, and suicidal (Flett et al., 2014; Hewitt et al., 2006; Sherry, Mackinnon, & Gautreau, 2015).

Advancing Research on the Incremental Validity of Perfectionism Beyond Hopelessness in the Prediction of Suicide Ideation

Given that hopelessness overlaps with both perfectionism (see Flett et al., 2014) and suicide ideation (Beck, Kovacs, & Weissman, 1979a, b), it is crucial that investigators test which, if any, forms of perfectionism (self-oriented, other-oriented, and socially prescribed perfectionism) explain unique variance in suicide ideation beyond hopelessness. The apparent relationship between perfectionism and suicide ideation may otherwise be merely a statistical artefact stemming from shared variance with the "third variable" of hopelessness.

We now have ample evidence that socially prescribed perfectionism adds incrementally to the prediction of suicide ideation beyond hopelessness (Dean & Range, 1996; Hewitt, Flett, & Weber, 1994; Hewitt et al., 2006). But, due to notable between study inconsistencies and underpowered studies, the explanatory power of other-oriented perfectionism and socially prescribed perfectionism beyond hopelessness remains unclear.

Some research reports other-oriented perfectionism is unrelated to suicide ideation (Hewitt et al., 2014); other research reports other-oriented perfectionism is negatively related to suicide ideation (Blankstein, Lumley, & Crawford, 2007; Hunter & O'Connor, 2003). Similarly, some research reports self-oriented perfectionism is unrelated to suicide ideation (Hewitt, Caelian, Chen, & Flett, 2014), some research suggests self-oriented perfectionism has a positive association with suicide ideation (Flamenbaum & Holden, 2007), and other research contends self-oriented perfectionism serves as a buffer against suicide ideation (Stoeber & Otto, 2006). Moreover, although certain research suggests self-oriented perfectionism predicts suicide ideation beyond hopelessness (Hewitt et al., 1994), this finding does not consistently replicate (e.g. Flamenbaum & Holden, 2007; Hewitt et al., 2014).

In addition, despite evidence correlations do not stabilize until $N \geq 250$ (Schönbrodt & Perugini, 2013), most studies on the incremental validity of self-oriented, other-oriented, and socially prescribed perfectionism, beyond hopelessness, in the prediction of suicide ideation are underpowered (see Table 19.1). Nevertheless, a meta-analytic synthesis of the extant research on perfectionism, hopelessness, and suicide ideation could overcome limitations of small sample sizes and allow an overall conclusion to be reached regarding self-oriented perfectionism's and other-oriented perfectionism's relationships with suicide ideation, after controlling for hopelessness (Borenstein, Hedges, Higgins, & Rothstein, 2009).

Table 19.1 Characteristics of studies included in the meta-analysis

	Sample					Measures		
	N	Sample type	Mean age	Status	Design	Perfectionism	Hopelessness	Suicide ideation
Caelian (2005)	55	Psychiatric[a]	15.5	Dissertation	Cross-sectional	CAPS-SOP CAPS-SPP	HSC	SIQ
Chen (2012) women time 1	279	Community[b]	58.6	Dissertation	Longitudinal	MPS-SOP MPS-OOP MPS-SPP	HS	SSI
Chen (2012) men time 1	157	Community[b]	58.6	Dissertation	Longitudinal	MPS-SOP MPS-OOP MPS-SPP	HS	SSI
Chen (2012) women time 2	279	Community[b]	58.6	Dissertation	Longitudinal	MPS-SOP MPS-OOP MPS-SPP	–	SSI
Chen (2012) men time 2	157	Community[b]	58.6	Dissertation	Longitudinal	MPS-SOP MPS-OOP MPS-SPS	–	SSI
Dean and Range (1996)	168	University[c]	21.9	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	HS	SBQ
Dean and Range (1999)	132	Psychiatric[a]	35.5	Article	Cross-sectional	MPS-SOP MPS-SPP	HS	SSI
Dean and Range (1996)	114	University[a]	24.4	Article	Cross-sectional	MPS-SPP	HS	SSI
Enns, Cox, Sareen and Freeman (2001) time 1	96	Medical[d]	25.1	Article	Longitudinal	MPS-SOP MPS-OOP MPS-SPP	HS	SIQ
Enns et al. (2001) time 2	58	Medical[d]	25.1	Article	Longitudinal	MPS-SOP MPS-OOP MPS-SPP	HS	SIQ

(continued)

Table 19.1 (continued)

	Sample					Measures		
	N	Sample type	Mean age	Status	Design	Perfectionism	Hopelessness	Suicide ideation
Hewitt et al. (1992)	87	Psychiatric[a]	35.7	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	BDI-H	BDI-SI
Hewitt et al. (1994) study 1	91	Psychiatric[a]	35.5	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	HS	SSI
Hewitt et al. (1994) study 2	160	University[c]	21.7	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	HS	SSI
Hewitt et al. (1997) women	33	Psychiatric[a]	15.4	Article	Cross-sectional	CAPS-SOP CAPS-SPP	HSC	SIQ
Hewitt et al. (1997) men	33	Psychiatric[a]	15.4	Article	Cross-sectional	CAPS-SOP CAPS-SPP	HSC	SIQ
Hewitt et al. (2014)	55	Psychiatric[a]	15.5	Article	Cross-sectional	CAPS-SOP CAPS-SPP	HSC	SIQ
O'Connor et al. (2007a) sample 1	65	Psychiatric[a]	24.1	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	HS	SPS-SI
O'Connor et al. (2007a) sample 2	61	Psychiatric[a]	24.1	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	HS	SPS-SI
O'Connor et al. (2007b) study 2	151	University[c]	24.0	Article	Longitudinal	MPS-SOP MPS-OOP MPS-SPP	SPS-H	SPS-SI
Rasmussen et al. (2008) sample 1	17	Psychiatric[a]	38.0	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	HS	SPS-SI

(continued)

Table 19.1 (continued)

	Sample					Measures		
	N	Sample type	Mean age	Status	Design	Perfectionism	Hopelessness	Suicide ideation
Rasmussen et al. (2008) sample 2	23	Psychiatric[a]	38.0	Article	Cross-sectional	MPS-SOP MPS-OOP MPS-SPP	HS	SPS-SI
Rasmussen et al. (2012)	161	Psychiatric[a]	33.7	Article	Cross-sectional	MPS-SPP	BHS	SPS-SI
Roxorough et al. (2012)	152	Psychiatric[a]	12.9	Article	Cross-sectional	CAPS-SOP CAPS-SPP	RSD-SH	intent[e]

N total number of participants, *status* publication status of the study, *CAPS* Flett et al. (2016a) child-adolescent perfectionism scale, *MPS* Hewitt and Flett's (1991) multidimensional perfectionism scale, *SOP* self-oriented perfectionism, *OOP* other-oriented perfectionism, *SPP* socially prescribed perfectionism, *HSC* Kazdin et al. (1986) hopelessness scale for children, *SIQ* Reynolds' (1987) suicidal ideation questionnaire, *HS* Beck et al. (1974) hopelessness scale, *SSI* Beck et al.'s (1988) scale for suicidal ideation, *SBQ* Linehan's (1981) suicidal behavior questionnaire, *BDI-H* Beck's (1967) depression inventory item-2 (hopelessness), *BDI-SI* Beck's (1967) depression inventory item-9 (suicidal intent), *SPS-SI* Cull and Gill's (1982) suicide probability scale suicide ideation subscale, *SPS-H* Cull and Gill's (1982) suicide probability scale hopelessness subscale, *BHS* Beck and Steer's (1988) Beck hopelessness scale, *RSD-SH* ratings of social disconnection:social hopelessnesssubscale (see Roxborough et al. 2012)

[a]Psychiatric patients

[b]Community adults

[c]University undergraduates

[d]Medical students

[e]Participants asked "How likely is it that you will attempt suicide someday?"

Source Authors

The Present Study

Are self-oriented, other-oriented, and socially prescribed perfectionism associated with suicide ideation beyond hopelessness? Do only certain perfectionism dimensions predict suicide ideation? We aimed to answer these contentiously debated questions by meta-analysing extant research on perfectionism, hopelessness, and suicide ideation.

Extensive research indicates perceived external pressures to be perfect confer risk for suicide ideation (e.g. Baumeister et al., 1990; Blatt, 1995; Flett et al., 2014; Hewitt et al., 2014; O'Connor, 2007). And evidence indicates socially prescribed perfectionism adds incrementally to the prediction of suicide ideation beyond hopelessness (Dean & Range, 1996; Hewitt et al., 1994; Hewitt et al., 2006). Building on prior research, we hypothesized that, after controlling for hopelessness, socially prescribed perfectionism's relationships with suicide ideation would remain significant. However, we considered our investigation into other-oriented perfectionism's and self-oriented perfectionism's relationships with suicide ideation, after controlling for hopelessness, to be exploratory, as this topic is largely unstudied.

Method

Selection of Studies

We conducted a rigorous literature search using PsycINFO, Medline, Web of Science, and Proquest Disertations and Theses using the Boolen search terms "perfect*" and "suicide*". This search yielded 100 studies from PsycINFO, 122 studies from Medline, 226 studies from Web of Science, and 38 studies from ProQuest. Both the first and the second authors reviewed abstracts of all studies from this search, selecting studies meeting inclusion criteria. Studies were included that (a) contained data on trait perfectionism (Hewitt & Flett, 1991), hopelessness, and suicidal ideation. Included articles were also (b) in English and (c) reported an effect size, enough information for computing an effect size, or this information was obtained from a study author. Finally, included studies (d) were published journal articles or dissertations. This literature search resulted in 15 studies for inclusion. On 7 August 2016, we terminated search strategies and started data reduction and analysis.

Coding of Studies

The first and the second authors coded each study based on eight characteristics: sample size, sample type, design, year of publication, publication status, measure

used to assess perfectionism, measure used to assess hopelessness, and measure used to assess suicidal ideation.

Meta-Analytic Procedures

Meta-analysis, using random effects models, was conducted using comprehensive meta-analysis software (Borenstein, Hedges, Higgins, & Rothstein, 2005). We used random effect models, over fixed effect models, as the 15 included studies varied widely in design. We weighted mean effects by sample size following Hunter and Schmidt's (1990) recommendations. Furthermore, to test whether perfectionism is associated with suicide ideation, after controlling for hopelessness, we computed semi-partial correlations by imputing bivariate correlation matrices into Mplus (Muthén & Muthén, 2009).

Description of Studies

Our search yielded 15 studies and 20 samples containing relevant effect size data (see Table 19.1). The total number of participants pooled across samples was 2089. Included studies were made available between 1992 and 2014, with a median year of 2006. Relevant data was obtained from 13 journal articles and two dissertations. There were four university samples, 13 psychiatric samples, one sample of medical students, and two samples of community adults. Sample size varied between 17 and 229, with an average of 104.5 (SD = 65.7). The mean age of participants was 28.7 (SD = 13.1).

Measures

Perfectionism. Perfectionism was assessed using two measures: Hewitt and Flett's (1991) multidimensional perfectionism scale (MPS) and Flett et al.'s (2016a, b) child-adolescent perfectionism scale (CAPS).

Hopelessness. Hopelessness was assessed using six measures: Cull and Gill's (1982) suicide probability scale hopelessness subscale (SPS-H); Beck and Steer's (1988) Beck hopelessness scale (BHS); Beck et al. (1979a, b) Beck depression inventory hopelessness item (BDI-HS); Beck et al. (1974) hopelessness scale (HS);

Kazdin et al. (1986) hopelessness scale for children (HSC); and Roxborough et al. (2012) ratings of social disconnection social hopelessness scale (RDS-SH).

Suicide Ideation. Suicide ideation was assessed using five measures: Beck's (1967) depression inventory item-9 (suicidal intent; BDI-SI); Beck, Steer, and Rainieri's (1988) scale for suicidal ideation (SSI); Cull and Gill's (1982) suicide probability scale suicidal ideation subscale (SPS-SI); Linehan's (1981) suicidal behaviour questionnaire (SBQ); and Reynolds' (1987) suicidal ideation questionnaire (SIQ) (Table 19.2).

Table 19.2 Relationships between perfectionism dimensions, hopelessness, and suicidality

	Covariate	Outcome	Self-oriented perfectionism		
			SOP, HOPE	HOPE, S	SOP, S
Caelian (2005)	HSC	SIQ	−.14	.70	.15
Chen (2012) men time 1	HS	SSI	.03	.36	.09
Chen (2012) women time 1	HS	SSI	.25	.57	.05
Dean and Range (1996)	HS	SBQ	.03	.31	.07
Dean and Range (1999)	HS	SSI	.10	.59	−.01
Enns et al. (2001) T1	HS	SIQ-time 1	.20	.09	.13
Enns et al. (2001) T2	HS	SIQ-time 2	.20	.13	.10
Hewitt et al. (1992)	BDI-H	BDI-SI	−.14	.46	.10
Hewitt et al. (1994) study 1	HS	SSI	.16	.64	.17
Hewitt et al. (1994) study 2	HS	SSI	−.05	.49	.22
Hewitt et al. (1997) men	HSC	SIQ	−.20	.53	−.03
Hewitt et al. (1997) women	HSC	SIQ	.37	.74	−.05
Hewitt et al. (2014)	HSC	SIQ	−.14	.70	.15
O'Connor et al. (2007a) sample 1	BHS	SPS-SI	.03	.50	.07
O'Connor et al. (2007a) sample 2	BHS	SPS-SI	−.24	.48	.05
O'Connor et al. (2007b) study 2	SPS-H	SPS-SI	.25	.67	.11
Rasmussen et al. (2008) sample 1	BHS	SPS-SI	.03	.08	.38
Rasmussen et al. (2008) sample 2	BHS	SPS-SI	−.03	.75	.12
Roxborough et al. (2012)	RSD-SH	SPS-SI	.08	.34	.10
	Covariate	Outcome	Other-oriented perfectionism		
			OOP, HOPE	HOPE, S	OOP, S
Chen (2012) men time 1	BHS	SSI	.04	.36	.10
Chen (2012) women time 1	BHS	SSI	.08	.59	−.09
Dean and Range (1996)	HS	SBQ	.03	.31	−.03
Enns et al. (2001) T1	HS	SIQ-time 1	−.07	.13	.10
Enns et al. (2001) T2	HS	SIQ-time 2	−.07	.15	.03
Hewitt et al. (1992)	BDI-H	BDI-SI	−.13	.43	−.14
Hewitt et al. (1994) study 1	HS	SSI	−.08	.68	.15

(continued)

Table 19.2 (continued)

	Covariate	Outcome	Other-oriented perfectionism		
			OOP, HOPE	HOPE, S	OOP, S
Hewitt et al. (1994) study 2	HS	SSI	.02	.48	.22
O'Connor et al. (2007a) sample 1	BHS	SPS-SI	−.01	.50	.04
O'Connor et al. (2007a) sample 2	BHS	SPS-SI	−.03	.47	−.12
O'Connor et al. (2007b) study 2	SPS-H	SPS-SI	.16	.69	.07
Rasmussen et al. (2008) sample 1	BHS	SPS-SI	.28	.06	.09
Rasmussen et al. (2008) sample 2	BHS	SPS-SI	−.07	.74	−.13
	Covariate	Outcome	Socially prescribed perfectionism		
			SPP, HOPE	HOPE, S	SPP, S
Caelian (2005)	HSC	SIQ	.11	.67	.12
Chen (2012) men	BHS	SSI	.29	.33	.10
Chen (2012) women	BHS	SSI	.41	.54	.09
Dean and Range (1996)	HS	SBQ	.32	.27	.14
Dean and Range (1999)	HS	SSI	.48	.63	−.08
Dean and Range (1996)	HS	SSI	.45	.73	.21
Enns et al. (2001) T1	HS	SIQ-time 1	.21	.06	.30
Enns et al. (2001) T2	HS	SIQ-time 2	.21	.08	.35
Hewitt et al. (1992)	BDI-H	BDI-SI	.17	.40	.31
Hewitt et al. (1994) study 1	HS	SSI	.35	.65	.05
Hewitt et al. (1994) study 2	HS	SSI	.28	.42	.23
Hewitt et al. (1997) men	HSC	SIQ	.27	.42	.40
Hewitt et al. (1997) women	HSC	SIQ	.56	.74	−.03
Hewitt et al. (2014)	HSC	SIQ	.11	.67	.11
O'Connor et al. (2007a) sample 1	BHS	SPS-SI	.43	.51	−.01
O'Connor et al. (2007a) sample 2	BHS	SPS-SI	.32	.43	.12
O'Connor et al. (2007b) study 2	SPS-H	SPS-SI	.36	.64	.16
Rasmussen et al. (2008) sample 1	BHS	SPS-SI	.02	.09	.08
Rasmussen et al. (2008) sample 2	BHS	SPS-SI	.10	.73	.17
Rasmussen et al. (2012)	BHS	Intent[a]	.16	.61	.21
Roxborough et al. (2012)	RSD-SH	SPS-SI	.27	.33	.09

SOP self-oriented perfectionism, *OOP* other-oriented perfectionism, *SPP* socially prescribed perfectionism, *HOPE* hopelessness, *S* suicide ideation, *HSC* Kazdin et al.'s (1986) hopelessness scale for children, *SIQ* Reynolds' (1987) suicidal ideation questionnaire, *HS* Beck et al.'s (1974) hopelessness scale, *SSI* Beck et al.'s (1988) scale for suicidal ideation, *SBQ* Linehan's (1981) suicidal behavior questionnaire, *BDI-H* Beck's (1967) depression inventory item-2 (hopelessness), *BDI-SI* Beck's (1967) depression inventory item-9 (suicidal intent), *SPS-H* Cull and Gill's (1982) suicide probability scale hopelessness subscale, *SPS-SI* Cull and Gill's (1982) suicide probability scale suicide ideation subscale, *BHS* Beck and Steer's (1988) Beck hopelessness scale, *RSD-SH* ratings of social disconnection social hopelessness (see Roxborough et al. 2012)

[a]Participants asked "How likely is it that you will attempt suicide someday?"

Source Authors

Results

Overall Effect Sizes

Weighted mean effect sizes between perfectionism dimensions and suicidal ideation, after controlling for hopelessness, are in Table 19.3. Following Cohen's (1992) guidelines for small, medium, and large effects (r = 0.10, 0.30, 0.50, respectively), self-oriented and socially prescribed perfectionism had small positive relationships with suicide ideation, after controlling for hopelessness. Other-oriented perfectionism's relationship with suicide ideation, after controlling for hopelessness, was non-significant. Results suggest self-oriented and socially prescribed perfectionism are neither redundant with, nor fully captured by, hopelessness.

Discussion

Although the incremental validity of socially prescribed perfectionism beyond hopelessness in the prediction of suicide ideation is clear (Dean & Range, 1996; Hewitt et al., 1994, 2006), the explanatory power of self-oriented and other-oriented perfectionism in the prediction of suicide ideation beyond hopelessness is unclear. Our chapter addressed these important gaps in knowledge by meta-analysing self-oriented perfectionism's, other-oriented perfectionism's, and socially prescribed

Table 19.3 Summary of effect sizes for the relationship between perfectionism dimensions, hopelessness, and suicidal ideation

Variable	k	N	r^+	95% CI	Q_T	I^2 (%)
Self-oriented perfectionism						
^{r}SOP, HOPE	19	1873	0.08*	[0.01, 0.14]	36.24***	50.32
^{r}HOPE, SI	19	1873	0.50***	[0.42, 0.58]	89.05	79.79
^{r}SOP, SI	19	1873	0.10***	[0.05, 0.14]	8.26	0.00
Other-oriented perfectionism						
^{r}OOP, HOPE	13	1413	0.04	[−0.01, 0.09]	8.00	0.00
^{r}HOPE, SI	13	1413	0.46***	[0.35, 0.56]	66.16	81.85
^{r}OOP, SI	13	1413	0.05	[−0.01, 0.11]	15.85	24.30
Socially prescribed perfectionism						
^{r}SPP, HOPE	21	2148	0.31***	[0.25, 0.36]	31.68*	36.87
^{r}HOPE, SI	21	2148	0.50***	[0.42, 0.59]	118.04	83.06
^{r}SPP, SI	21	2148	0.15***	[0.10, 0.19]	24.17	17.26

k number of studies, N total number of participants in the k samples, r^+ weighted mean r, *CI* confidence interval, Q_T measure of heterogeneity of effect sizes, I^2 percentage of heterogeneity, *HOPE* hopelessness, *SI* suicide ideation, *SOP* self-oriented perfectionism, *OOP* other-oriented perfectionism, *SPP* socially prescribed perfectionism

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source Authors

perfectionism's relationships with suicide ideation, after controlling for hopelessness. Findings derived from 15 studies with 20 samples involving 2089 participants revealed that, after controlling for hopelessness, both self-oriented and socially prescribed perfectionism displayed small, positive relationships with suicide ideation. In contrast, other-oriented perfectionism's relationship with suicide ideation, after controlling for hopelessness, was non-significant.

Self-Oriented Perfectionism

Does rigidly and harshly demanding perfection of the self protect against suicide ideation, as some authors suggest (Stoeber & Otto, 2006)? We clearly answer "no" to this question. Our findings are incongruent with conceptualizations of self-oriented perfectionism as a "resiliency" factor that buffers against suicide ideation. On the contrary, our findings corroborate research suggesting there is little about self-oriented perfectionism that is healthy, adaptive, positive, or advisable (Blasberg, Hewitt, Flett, Sherry, & Chen, 2016; Greenspon, 2000; Sherry, Hewitt, Sherry, Flett, & Graham, 2010; Smith et al., 2016b). Infact, we now have a large body of evidence suggesting people high on self-oriented perfectionism think more about suicide and are at risk for depressive symptoms (Smith et al., 2016b), eating disorders (Castro-Fornieles et al., 2007), poor health (Molnar, Flett, Sadava, & Colautti, 2012), and early mortality (Fry & Debats, 2009).

What is it about self-oriented perfectionism that makes people want to die? Striving for perfection is a means without an end (Greenspon, 2000). Self-oriented perfectionists invest so heavily in being perfect that they lose sight of why they were striving to be perfect in the first place (e.g. to garner the love, approval, and admiration of others). Self-oriented perfectionist's self-worth is also shaky (DiBartolo et al., 2004; Dunkley & Grilo, 2007; Sturman et al., 2009)—self-oriented perfectionists are only satisfied when everything in their lives suggests they are perfect; when life events inevitably suggest they are not perfect, suicide ideation follows.

Perfection is also elusive. And self-oriented perfectionists perceive a high frequency of failures and a low frequency of successes (Flett et al., 2014). Moreover, as Yalom (1971) sagely noted, "when the idealized image is severe and unattainable…tragic consequences follow: the individual cannot in real life approximate the superhuman scope of the idealized image, reality eventually intrudes, and he realizes a discrepancy between what he wants to be and what he is". And perceiving a discrepancy between the actual self and the ideal self is unpleasant and can lead to consideration of suicide as a means of escaping aversive self-awareness (Baumeister, 1990). Additionally, perfection is in the eye of the beholder. What one person considers perfect, another considers riddled with flaws. As such, striving for perfection sets people up for failure as it is rarely clear whether one's performance is perfect or imperfect.

Striving for perfection also puts self-oriented perfectionists in no-win situations. Specifically, self-oriented perfectionists believe they are either acceptable or worthless. Thus, if such people fall short of their own lofty goals, then they have failed; but if they manage to meet their goals, they experience no satisfaction as they have merely done what they expected (Burns, 1980). Moreover, as per the stress-diathesis model (Hewitt & Flett, 1993), self-oriented perfectionists are at an increased risk for suicide ideation due to a tendency to experience achievement-related stressors (e.g. an inability to write) as more ego-involving and distressing (Békés et al., 2015; Hewitt & Flett, 2002).

Given our findings that self-oriented perfectionism predicts suicide ideation beyond hopelessness, and given evidence that suicide ideation predicts suicide completion (Brown et al., 2000, 2005), we strongly encourage researchers and clinicians to cease the improper, and possibly lethal, mislabelling of self-oriented perfectionism as "adaptive" (e.g. Slaney, Rice, Mobley, Trippi, & Ashby, 2001; Stoeber & Otto, 2006). Failure to heed this recommendation could lead seriously distressed self-oriented perfectionists to slip through the cracks (see Flett & Hewitt, 2013). Self-oriented perfectionists are fixated on maintaining an image of invulnerability (Hewitt et al., 2003) and often hide their distress from others, as disclosing it would be an open admission of failure (Flett & Hewitt, 2013). Hence, self-oriented perfectionists sometimes conceal suicide ideations from others and kill themselves seemingly without warning (Flett et al., 2014).

Other-Oriented Perfectionism

As in prior studies (e.g. Hewitt et al., 2014), other-oriented perfectionism's relation with suicide ideation was non-significant. Thus, although other-oriented perfectionists elicit distress in other people (Nealis, Sherry, Sherry, Stewart, & Macneil, 2015), other-oriented perfectionists themselves do not appear to suffer greater suicide ideation. One possible explanation for this finding is that other-oriented perfectionist's tendency to externalize blame and distress may act as a buffer against suicide ideation (Blankstein et al., 2007; Hunter & O'Connor, 2003). Alternatively, building on research supporting a link between other-oriented perfectionism and narcissism (Smith et al., 2016b), rather than elevated suicide ideation, other-oriented perfectionists may have elevated homicidal ideation (Flett et al., 2016).

Socially Prescribed Perfectionism

As hypothesized, and in line with prior research (Dean & Range, 1996, 1994; Hewitt et al., 2006), findings revealed socially prescribed perfectionism added incrementally to understanding suicide ideation beyond hopelessness. As earlier research

suggests, people with high socially prescribed perfectionism think, feel, relate, and behave in ways that engender suicide ideation. Specifically, black-and-white thinking causes socially prescribed perfectionists to interpret failures as monumental catastrophes that, in extreme circumstances, are seen as warranting death (Blatt, 1995; Flett et al., 2014; Hewitt et al., 2006). As well, socially prescribed perfectionists agonize over perceived failures, as they view their social world as pressure-filled, judgemental, and unyielding (Smith et al., 2016b).

Socially prescribed perfectionism also leads to suicide ideation by predisposing a subjective sense of disappointing others. And, in accordance with the stress-diathesis model (Hewitt & Flett 1993, 2002), socially prescribed perfectionists are prone to suicide ideation due to a tendency to perceive interpersonal stressors (e.g. romantic break-ups) as more ego-involving and distressing (Hewitt & Flett, 2002). Similarly, according to the social disconnection model of suicide, socially prescribed perfectionists struggle to benefit from and partake in stable, harmonious, and meaningful interpersonal relationships (Hewitt et al., 2006; Sherry et al., 2015). And this profound sense of social disconnection leaves many socially prescribed perfectionists feeling isolated, alienated, and suicidal.

Limitations of the Overall Literature

Summarizing limitations within the existing literature points towards areas requiring explication, thereby providing direction to advance the field of study. We found most research on perfectionism, hopelessness, and suicide ideation is cross-sectional. This is problematic, as cross-sectional designs are unable to address directionality. Consequently, although results indicate self-oriented and socially prescribed perfectionism are associated with suicide ideation beyond hopelessness, there remains much to be learned. For instance, are self-oriented and socially prescribed perfectionism an antecedent of suicide ideation, a consequence of suicide ideation, or both? Additionally, all included studies used mono-source designs. Mono-source designs are problematic when studying personality traits such as perfectionism that can involve self-presentational biases (Sherry, Nealis, Macneil, Stewart, Sherry, & Smith, 2013). Thus, future research could advance this literature by moving beyond reliance on cross-sectional designs and augmenting self-reports with informant reports.

Limitations of the Present Study

Limitations in the existing literature on perfectionism, hopelessness, and suicide ideation translate into limitations in the present study. Included studies were composed primarily of Caucasian samples from Canada, the USA, and the UK. Accordingly, our results may have limited generalizability to more ethnically

diverse samples. In addition, future research should investigate the incremental validity of perfectionism beyond hopelessness and other established predictors of suicide ideation, such as depression. As well, although there was sufficient research to investigate the extent to which perfectionism dimensions predict suicide ideation beyond hopelessness, there was insufficient research to evaluate the extent to which perfectionism dimensions predict suicide attempts beyond hopelessness. Furthermore, we studied perfectionism as conceptualized by Hewitt and Flett (1991). Future research might consider investigating the extent to which our findings replicate using alternative measures of perfectionism, such as Smith, Saklofske, Stoeber, and Sherry's (2016) Big Three Perfectionism Scale. Finally, future research should incorporate the present findings into an integrative model that explains how and why perfectionism combines with other constructs (e.g. hopelessness) to predict suicide ideation.

Concluding Remarks

Our meta-analysis of 15 studies (involving 20 samples and 2089 participants) represents the most stringent test of the perfectionism–suicide ideation link to date. Findings add substantially to the perfectionism literature by demonstrating that self-oriented perfectionism's and socially prescribed perfectionism's relationships with suicide ideation are not merely due to overlap with hopelessness. Consequently, our results build upon, extend, and lend credence to case histories and theoretical accounts suggesting perceived internal and external pressures to be perfect make people want to die.

References

Note: Studies marked with an asterisk were included in the present meta-analysis

Baumeister, R. F. (1990). Suicide as escape from self. *Psychological Review, 97*(1), 90–113.

Beck, A. T. (1967). *Depression: Clinical, experimental, and theoretical aspects.* University of Pennsylvania Press.

Beck, A. T., Kovacs, M., & Weissman, A. (1979a). Assessment of suicidal intention: The scale for suicide ideation. *Journal of Consulting and Clinical Psychology, 47*(2), 343–352.

Beck, A. T., Rush, A. J., Shaw, B. F., & Emery, G. (1979b). *Cognitive therapy for depression: A treatment manual*. New York: Guilford Press.

Beck, A. T., & Steer, R. A. (1988). *Manual for the Beck hopelessness scale*. San Antonio: Psychological Corp.

Beck, A. T., Steer, R. A., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: A 10-year prospective study of patients hospitalized with suicidal ideation. *American Journal of Psychiatry, 142*(5), 559–563.

Beck, A. T., Steer, R. A., & Ranieri, W. F. (1988). Scale for suicide ideation: Psychometric properties of a self-report version. *Journal of Clinical Psychology, 44*(4), 499–505.

Beck, A. T., Weissman, A., Lester, D., & Trexler, L. (1974). The measurement of pessimism: Hopelessness scale. *Journal of Consulting and Clinical Psychology, 42*(6), 861–865.

Békés, V., Dunkley, D. M., Taylor, G., Zuroff, D. C., Lewkowski, M., Foley, J. E., ... Westreich, R. (2015). Chronic stress and attenuated improvement in depression over 1 year: The moderating role of perfectionism. *Behaviour Therapy, 46*(4), 478–492.

*Blankstein, K.R., Lumley, C.H., & Crawford, A. (2007). Perfectionism, hopelessness, and suicide ideation: Revisions to the diasthesis-stress and stress-vulnerability models. *Journal of Rational Emotive and Cognitive Behaviour Therapy, 25*(4), 279–319.

*Blasberg, J., Hewitt, P., Flett, G., Sherry, S., & Chen, C. (2016). The importance of item wording: The distinction between measuring high standards versus measuring perfectionism and why it matters. *Journal of Psychoeducational Assessment, 34*(7), 702–717.

Blatt, S. J. (1995). The destructiveness of perfectionism. *American Psychologist, 50,* 1003–1020.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2005). *Comprehensive meta-analysis (version 2) [computer software]*. Englewood: Biostat.

Borenstein, M., Hedges, L. V., Higgins, J. P. T., & Rothstein, H. R. (2009). *Introduction to meta-analysis*. England: Wiley.

Burns, D. D. (1980). The perfectionist's script for self-defeat. *Psychology Today, 14*(6), 34–52.

Brown, G. K., Beck, A. T., Steer, R. A., & Grisham, J. R. (2000). Risk factors for suicide in psychiatric outpatients: A 20-year prospective study. *Journal of Consulting and Clinical Psychology, 68*(3), 371–377.

Brown, G. K., Steer, R. A., Henriques, G. R., & Beck, A. T. (2005). The internal strugglebetween the wish to die and the wish to live: A risk factor for suicide. *American Journal of Psychiatry, 162*(10), 1977–1979.

*Caelian, C.F. (2005). *The role of perfectionism and stress in the suicidal behaviour of depressed adolescents*. (Doctoral dissertation). Available from ProQuest Dissertations and Theses database (UMI No: NR10383).

Castro-Fornieles, J., Gual, P., Lahortiga, F., Gila, A., Casulà, V., Fuhrmann, C., ... Toro, J. (2007). Self-oriented perfectionism in eating disorders. *International Journal of Eating Disorders, 40* (6), 562–568.

*Chen, C. (2012). *Perfectionism and suicide ideation*. (Master's thesis). Available from ProQuest Dissertations and Theses database.

Cohen, J. (1992). A power primer. *Psychological Bulletin, 112*(1), 155–159.

Crosby, A., Gfroerer, J., Han, B., Ortega, L., & Parks, S.E. (2011). Suicidal thoughts and behaviours among adults aged >18 years—United States, 2008–2009. US Department of Health and Human Services, Centers for Disease Control and Prevention.

Cull, J. G., & Gill, W. S. (1982). *Suicide probability scale*. Los Angeles: Western Psychological Services.

*Dean, P., & Range, L. (1996). The escape theory of suicide and perfectionism in college students. *Death Studies, 20*(4), 415–424.

*Dean, P., & Range, L. (1999). Testing the escape theory of suicide in an outpatient clinical population. *Cognitive Therapy and Research, 23*(6), 561–572.

*Dean, P., Range, L., & Goggin, W. (1996). The escape theory of suicide in college students: Testing a model that includes perfectionism. *Suicide and Life-Threatening Behaviour, 26*(2), 181–186.

DiBartolo, P. M., Frost, R. O., Chang, P., LaSota, M., & Grills, A. E. (2004). Shedding light on the relationship between personal standards and psychopathology: The case for contingent self-worth. *Journal of Rational-Emotive and Cognitive-Behaviour Therapy, 22*(4), 237–250.

Dunkley, D. M., & Grilo, C. (2007). Self-critical perfectionism, coping, hassles, and current distress: A structural equation modeling approach. *Cognitive Therapy and Research, 24*(6), 713–730.

*Enns, M.W., Cox, B.J., Sareen, J., & Freeman, P. (2001). Adaptive and maladaptive perfectionism in medical students: A longitudinal investigation. *Medical Education, 35*(11), 1034–1042.

*Flamenbaum, R., & Holden, R.R. (2007). Psychache as a mediator in the relationship between perfectionism and suicidality. *Journal of Counseling Psychology, 54*(1), 51–61.

Flett, G. L., & Hewitt, P. L. (2013). Disguised distress in children and adolescents "flying under the radar": Why psychological problems are underestimated and how schools must respond. *Canadian Journal of School Psychology, 28*(1), 12–27.

Flett, G. L., & Hewitt, P. L. (2015). Measures of perfectionism. In G. J. Boyle, D. H. Saklofske, & G. Matthews (Eds.), *Measures of personality and social psychological constructs* (pp. 595–618). San Diego: Elsevier.

Flett, G. L., Hewitt, P. L., Besser, A., Su, C., Vaillancourt, T., Boucher, D., … Gale, O. (2016a). The child-adolescent perfectionism scale. *Journal of Psychoeducational Assessment, 34*(7), 634–652.

Flett, G. L., Hewitt, P. L., & Sherry, S. B. (2016b). Deep, dark, and dysfunctional: The destructiveness of interpersonal perfectionism. In V. Ziegler-Hill & D. K. Marcus (Eds.), *The dark side of personality* (pp. 211–229). Washington, DC: American Psychological Association.

Flett, G. L., Hewitt, P. L., & Heisel, M. J. (2014). The destructiveness of perfectionism revisited: Implications for the assessment of suicide risk and prevention of suicide. *Review of General Psychology, 18*(3), 156–172.

Fry, P. S., & Debats, D. L. (2009). Perfectionism and the five-factor personality traits as predictors of mortality in older adults. *Journal of Health Psychology, 14*(4), 513–524.

Greenspon, T. S. (2000). "Healthy perfectionism" is an oxymoron! Reflections on the psychology of perfectionism and the sociology of science. *Journal of Secondary Gifted Education, 11*(4), 197–209.

Hassan, S., Flett, G. L., Ganguli, R., & Hewitt, P. L. (2014). Perfectionistic self-presentation and suicide in a young woman with major depression and psychotic features. *Case Reports in Psychiatry, 77*(1), 1–6.

Hemingway, E. (1961). *The snows of Kilimanjaro and other stories*. New York: Charles Scribner's Sons.

Hemingway, E., & Bruccoli, M. J. (1986). *Conversations with Ernest Hemingway*. University Press of Mississippi.

*Hewitt, P.L., Caelian, C.F., Chen, C., & Flett, G.L. (2014). Perfectionism, stress, daily hassles, hopelessness, and suicide potential in depressed psychiatric adolescents. *Journal of Psychopathology and Behavioural Assessment, 36*(4), 663–674.

Hewitt, P. L., & Flett, G. L. (1991). Perfectionism in the self and social contexts. *Journal of Personality and Social Psychology, 60*(3), 456–470.

Hewitt, P. L., & Flett, G. L. (1993). Dimensions of perfectionism, daily stress, and depression: A test of the specific vulnerability hypothesis. *Journal of Abnormal Psychology, 102*(1), 58–65.

Hewitt, P. L., & Flett, G. L. (2002). Perfectionism and stress processes in psychopathology. In G. L. Flett & P. L. Hewitt (Eds.), *Perfectionism: Theory, research, and treatment* (pp. 255–284). Washington, D.C.: American Psychological Association.

Hewitt, P. L., Flett, G. L., Sherry, S. B., & Caelian, C. F. (2006). Trait perfectionism dimensions and suicide behaviour. In T. E. Ellis (Ed.), *Cognition and suicide: Theory, research, and practice* (pp. 215–235). Washington, D.C.: American Psychological Association.

Hewitt, P. L., Flett, G. L., Sherry, S. B., Habke, M., Parkin, M., Lam, R. W., Stein, … M. B. (2003). The interpersonal expression of perfection: Perfectionistic self-presentation and psychological distress. *Journal of Personality and Social Psychology, 84*(6), 1303–1325.

*Hewitt, P., Flett, G., & Turnbull-Donovan, W. (1992). Perfectionism and suicide potential. *British Journal of Clinical Psychology, 31*(2), 181–190.

*Hewitt, P., Flett, G., & Weber, C. (1994). Dimensions of perfectionism and suicide ideation. *Cognitive Therapy and Research, 18*(5), 439–460.

*Hewitt, P., Newton, J., Flett, G., & Callander, L. (1997). Perfectionism and suicide ideation in a adolescent psychiatric patients. *Journal of Abnormal Child Psychology, 25*(2), 95–101.

Hunter, E. C., & O'Connor, R. C. (2003). Hopelessness and future thinking in parasuicide: The role of perfectionism. *British Journal of Clinical Psychology, 42*(4), 355–365.

Hunter, J. E., & Schmidt, F. L. (1990). Dichotomization of continuous variables: Implications for meta-analysis. *Journal of Applied Psychology, 75*(3), 334–349.

Hotchner, A. E. (2004). *Papa Hemingway: A personal memoir.* Da Capo Press.

Kazdin, A. E., Rodgers, A., & Colbus, D. (1986). The Hopelessness Scale for Children: Psychometric characteristics and concurrent validity. *Journal of Consulting and Clinical Psychology, 54*(2), 241–245.

Kessler, R. C., Berglund, P., Borges, G., Nock, M., & Wang, P. S. (2005). Trends in suicide ideation, plans, gestures, and attempts in the United States, 1990–1992 to 2001–2003. *The Journal of the American Medical Association, 293*(20), 2487–2495.

Kiamanesh, P., Dyregrov, K., Haavind, H., & Dieserud, G. (2014). Suicide and perfectionism: A psychological autopsy study of non-clinical suicides. *OMEGA Journal of Death and Dying, 69* (4), 381–399.

Linehan, M.M. (1981). *Suicidal behaviour questionnaire.* Unpublished manuscript.

Minkoff, K., Bergman, E., Beck, A. T., & Beck, R. (1973). Hopelessness, depression, and attempted suicide. *American Journal of Psychiatry, 130*(4), 455–459.

Molnar, D. S., Flett, G. L., Sadava, S. W., & Colautti, J. (2012). Perfectionism and health functioning in women with fibromyalgia. *Journal of Psychosomatic Research, 73*(4), 295–300.

Muthén, B., & Muthén, B. O. (2009). *Statistical analysis with latent variables*. Hoboken: Wiley.

Nealis, L. J., Sherry, S. B., Sherry, D. L., Stewart, S. H., & Macneil, M. A. (2015). Toward a better understanding of narcissistic perfectionism: Evidence of factorial validity, incremental validity, and mediating mechanisms. *Journal of Research in Personality, 57,* 11–25.

O'Connor, R. C. (2007). The relations between perfectionism and suicidality: A systematic review. *Suicide and Life-Threatening Behaviour, 37*(6), 689–714.

*O'Connor, R.C, Whyte, M., Fraser, L., Masterton, G., Miles, J., & MacHale, S. (2007a). Predicting short-term outcome in well-being following suicidal behaviour: The conjoint effects of social perfectionism and positive future thinking. *Behavioural Research and Therapy, 45*(7), 1543–1555.

*O'Connor, D.B., O'Connor, R.C., & Marshall, R. (2007b). Perfectionism and psychological distress: Evidence of the mediating effects of rumination. *European Journal of Personality, 21* (4), 429–452.

*Rasmussen, S.A., Elliot, M.A., & O'Connor, R.C. (2012). Psychological distress and perfectionism in recent suicide attempters: The role of behavioural inhibition and activation. *Personality and Individual Differences, 52*(6), 680–685.

*Rasmussen, S.A., O'Connor, R.C., & Brodie, D. (2008). The role of perfectionism and autobiographical memory in a sample of parasuicide patients. *Crisis, 29*(2), 64–72.

Reynolds, W. M. (1987). *Suicidal ideation questionnaire, professional manual*. Odessa: Psychological Assessment Resources.

*Roxborough, H.M., Hewitt, P.L., Kaldas, J., Flett, G.L., Caelian, C.M., Sherry, S., & Sherry, D. L. (2012). Perfectionistic self-presentation, socially prescribed perfectionism, and suicide in youth. *Suicide and Life-Threatening Behaviour, 42*(2), 217–233.

Rubinstein, A. T. (1988). *American literate root and flower*. New York: Monthly Review Press.

Rudd, M. (1989). The prevalence of suicidal ideation among college students. *Suicide and Life-Threatening Behaviour, 19*(2), 173–183.

Salter, D., & Platt, S. (1990). Suicide intent, hopelessness, and depression in a parasuicide population: The influence of social desirability and elapsed time. *British Journal of Psychiatry, 29*(4), 361–371.

Schönbrodt, F. D., & Perugini, M. (2013). At what sample size do correlations stabilize? *Journal of Research in Personality, 47*(5), 609–612.

Sherry, S. B., Hewitt, P. L., Sherry, D. L., Flett, G. L., & Graham, A. R. (2010). Perfectionism dimensions and research productivity in psychology professors: Implications for understanding the (mal) adaptiveness of perfectionism. *Canadian Journal of Behavioural Science, 42*(4), 273–283.

Sherry, S. B., Mackinnon, S. P., & Gautreau, C. G. (2015). Perfectionists don't play nicely with others: Expanding the social disconnection model. In F. M. Sirois & D. S. Molnar (Eds.), *Perfectionism, health, and well-being*. New York: Springer.

Sherry, S. B., Nealis, L. J., Macneil, M. A., Stewart, S. H., Sherry, D. L., & Smith, M. M. (2013). Informant reports add incrementally to the understanding of the perfectionism–depression connection: Evidence from a prospective longitudinal study. *Personality and Individual Differences, 54*(8), 957–960.

Slaney, R. B., Rice, K., Mobley, M., Trippi, J., & Ashby, J. (2001). The revised almost perfect scale. *Measurement and Evaluation in Counseling and Development, 34*(1), 130–145.

Smith, M. M., Saklofske, D. H., Stoeber, J., & Sherry, S. B. (2016). The big three perfectionism scale: A new measure of perfectionism. *Journal of Psychoeducational Assessment, 34*(7), 670–687.

Smith, M. M., Saklofske, D. H., & Yan, G. (2015a). Perfectionism, trait emotional intelligence, and psychological outcomes. *Personality and Individual Differences, 85*(1), 155–158.

Smith, M. M., Saklofske, D. H., Yan, G., & Sherry, S. B. (2015b). Perfectionistic strivings and perfectionistic concerns interact to predict negative emotionality: Support for the tripartite model of perfectionism in Canadian and Chinese university students. *Personality and Individual Differences, 81,* 141–147.

Smith, M.M., Saklofske, D.H., Yan, G., & Sherry, S. B. (in press). Does perfectionism predict depression, anxiety, stress, and life satisfaction after controlling for neuroticism? A study of Canadian and Chinese undergraduates. *Journal of Individual Differences.*

Smith, M. M., Sherry, S. B., Chen, S., Flett, G. L., & Hewitt, P. L. (2016a). Perfectionism and narcissism: A meta-analytic review. *Journal of Personality Research, 64,* 90–101.

Smith, M. M., Sherry, S. B., Rnic, K., Saklofske, D. H., Enns, M., & Gralnick, T. (2016b). Are perfectionism dimensions vulnerability factors for depressive symptoms after controlling for neuroticism? A meta-analysis of 10 longitudinal studies. *European Journal of Personality, 30* (2), 201–212.

Stoeber, J., Corr, P.J., Smith, M.M., & Saklofske, D. H. (in press). Perfectionism and personality. In J. Stoeber (Ed.), *The psychology of perfectionism: Theory, research, applications*. London: Routledge.

Stoeber, J., & Otto, K. (2006). Positive conceptions of perfectionism: Approaches, evidence, challenges. *Personality and Social Psychology Review, 10*(4), 295–319.

Sturman, E. D., Flett, G. L., Hewitt, P. L., & Rudolph, S. G. (2009). Dimensions of perfectionism and self-worth contingencies in depression. *Journal of Rational-Emotive & Cognitive-Behaviour Therapy, 27*(4), 213–231.

Trogdon, R. (2006). Dear Papa, Dear Hotch: The correspondence of Ernest Hemingway and AE Hotchner. *The Hemingway Review, 25,* 140–143.

Yalom, I. (1971). Ernest Hemingway—A psychiatric view. *Archives of General Psychiatry, 24*(6), 485–494.

Young, M. A., Fogg, L. F., Schettner, W., Fawcett, J., Akiskal, H., & Maser, J. (1996). Stable trait components of hopelessness and sensitivity to depression. *Journal of Abnormal Psychology, 105*(2), 155–165.

Chapter 20
Personality Profiles of Suicide Ideators, Attempters, Completers and Suicide Note Writers Versus Non-writers

Nishi Misra and Apoorva Ghanekar

Suicide is a major public health issue that gravely affects families, societies and even entire countries. It is one of the leading causes of death all over the world and affects millions of people every year. Every year a huge number of people attempt suicide and over 800,000 people die because of it. According to the WHO data, suicide was the 15th leading cause of death in 2012, accounting for 1.4% of all deaths across the world. The data available also highlights that the young people are at a major risk; suicide being the second leading cause of death among 15 to 29 year olds globally (WHO, 2014).

A much larger number of people make suicide attempts, with some researchers estimating that approximately 25 attempts occur for every suicide death (Goldsmith, Pellmar, Kleinman, & Bunney, 2002). Investigators of an epidemiological study of suicidal behaviour in 17 countries documented the lifetime prevalence of suicide ideation (9.2%), plans (3.1%) and non-lethal attempts (2.7%) (Nock et al., 2008). The onset of suicide ideation increases strikingly during adolescence in every country studied. Additionally, cross-nationally, about a third of people who think about suicide will go on to make a suicide attempt, and more than 60% of these transitions occur during the first year after initial onset of suicide ideation. Of those who commit suicide, only 15–40% leave suicide note. Suicide note is a message left by those who decide to bring an end to their life. It has been found that only 10% of suicide attempters do write a note (Gadit, 2007).

According to the WHO statistics, Guyana is the most suicide prone—country in the world with 44.2 per 100,000 who commit suicide. Some other countries that rank high in the suicide rates per 100,000 populations include North Korea (38.5), South Korea (28.9), Sri Lanka (28.8), Lithuania (28.2), Suriname (27.8),

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Mozambique (27.4), Nepal and Tanzania (24.9 each), Burundi (23.1), India (21.1) and South Sudan (19.8).

Suicide is a global phenomenon that is free from any socioeconomic or demographic bounds. A look at the Indian scenario reveals that the situation is no different over here as well. A WHO report in 2014 stated that India reported to have the highest number of estimated suicides in the world in 2012. According to the report, 258,075 people committed suicide in India in 2012, of which 99,977 were women and 158,098 were men who took their own lives. The report also highlighted that the rate of suicide in India was 21.1 per 100,000 people. Over the last two decades, the suicide rates in the country have increased from 7.9 to 10.3 per 100,000 (Vijaykumar, 2007).

According to the National Crime Records Bureau (NCRB), state of Tamil Nadu, West Bengal, Andhra Pradesh, Maharashtra and Karnataka have registered a consistently higher number of suicidal deaths during the past few years and have together accounted for 56.2% of the total suicides reported in the country. The most populous state of Uttar Pradesh has reported a comparatively lower percentage of suicidal deaths, accounting for only 3.6% of the total suicides reported in the country (Kumar, Verma, Bhattacharya, & Rathore, 2013).

Furthermore, data from the National Crime Records Bureau (NCRB, 2005, 2011) also said that as many as 69.7% of those who committed suicide had an annual income of less than Rs 1 lakh while one out of every six persons who took the extreme step last year was a housewife. According to PTI, Maharashtra saw 16,307 suicide cases in 2014 followed by Tamil Nadu (16,122) and West Bengal (14,310), the data said. The percentage break-up of the three states' share in the total suicide rate makeup stood at 12.4, 12.2 and 10.9, respectively. Also, among the mega cities, which have a population of over 10 lakh, Chennai reported the highest number of suicides with 2214 deaths, followed by Bengaluru (1906), Delhi (1847), Mumbai (1196) and Bhopal (1064). The rate of suicide in cities was marginally higher at 12.8% as compared to the all-India suicide rate of 10.6%. According to the NCRB report, 37.8% of suicides in India are by those below the age of 30 years. The close equivalent suicide rates of young men and women with the consistently narrow male:female ratio of 1.4:1 denotes that more Indian women succumb to suicide than their Western counterparts (Mayer & Ziaian, 2002). The available data suggests that the magnitude of suicide as a serious problem is on the rise in India as well as the world. Nevertheless, the early identification of risk factors and their subsequent management can reduce the occurrences and aid in an efficient suicide prevention.

The Suicide Continuum

The phenomenon of suicide develops along a continuum. It progresses from suicidal ideations or death wishes, to suicide attempts, to successful completion of a suicide. Suicidal attempts and instances of suicidal thoughts are equally serious

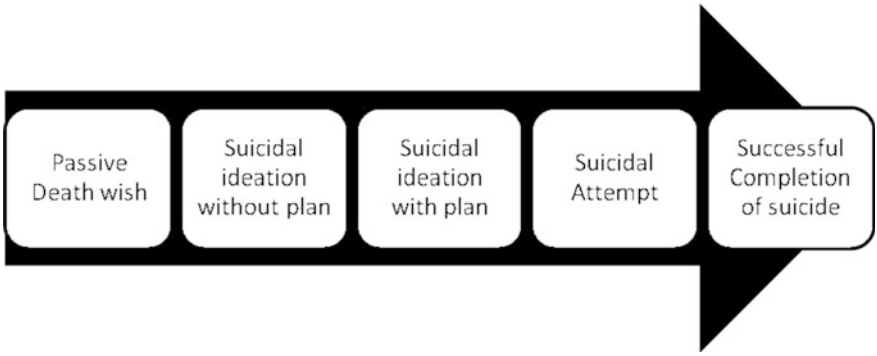

Fig. 20.1 The suicide continuum. *Source* Proposed by authors

issues as completed suicides, and often go unreported. A person engaging in suicidal thoughts may not necessarily attempt suicide, but suicidal ideations do increase the risk of suicide attempts, and even successful completions, to a great extent (Fig. 20.1).

The existing literature provides ample support to the claim that suicidality develops along a continuum, however, the progressions from one stage to another are unclear. The continuum may progress from milder forms such as thoughts of suicide and suicidal ideation, to more severe and serious expressions of the intent to die. The progression of an individual from one stage to the next is dependent on a number of factors; not everyone who thinks about suicide necessarily commits one. A study by Kessler, Borges, and Walters (1999) studied the development of suicidality over time and has reported that 34% of the suicide ideators move on to the stage of making a suicide plan, around 72% transit from having a suicide plan to an attempt, and around 26% progress from ideation to an unplanned attempt. A number of studies have stated the ratio of suicidal ideation to suicidal attempt to vary between 4:1 and 13:1 (McAuliffe, 2002). Suicidal ideations thus, seem to be considerably greater in terms of prevalence and incidents, than suicidal attempts.

Suicidal ideation involves thinking about, considering or planning suicide; while a suicide attempt is a non-fatal, self-directed, potentially injurious behaviour with intent to die as a result of the behaviour (CDC, 2011). Suicidal ideation or suicidal thoughts are a lot more common than most people let on. Most of the people must have thought about suicide at one point or another and such thoughts are quite disturbing for the person. Suicidal ideation is broken down into two forms: active and passive. Active suicidal ideation involves an existing wish to die accompanied by a plan for how to carry out the death. On the other hand, passive suicidal ideation involves a desire to die, but without a specific plan for carrying out the death. Ideations about suicide may thus, be persistent wishes about one's own death; and it may then lead to a successful or unsuccessful suicide attempt.

According to the WHO, the number of attempted suicides may be estimated to amount up to 20 times more than successful completions every year, but often go unreported. It has been observed that one- third of the people who engage in suicidal

behaviours that turn out to be non-fatal, are more likely to repeat that behaviour within a year and eventually 10% of them commit suicide (Pirkis, Beautrais, & Durkee, 2009; Silverman, 2009). Suicide attempts are a grave issue and may be attributed to a number of factors including, biological, environmental and psycho-social.

Klonsky and May (2015) propounded the "ideation-to-action" theory in their support for suicide continuum. According to this theory, the development of suicidal ideation and the progression from ideation to action are two distinct processes. The first step towards ideation begins with pain which can be emotional, physical and other types that lead to a decreased desire to live. This in combination with a feeling of hopelessness leads to the development of suicidal ideation. The second step involves absence of connectedness. It is similar to low belongingness or burdensomeness. The third factor is dispositional or acquired variables. Disposition is driven largely by genetics, such as pain sensitivity (Young, Lariviere, & Belfer, 2012).

Suicide and its related components have been strongly linked to risk factors such as mental disorders particularly affective, anxiety/panic and personality disorders, alcohol and drug abuse, inadequate social support, impulsivity and cognitive rigidity, and work-related problems (Sveticic & De Leo, 2012). However, studies have shown that the repertoire of risk factors of suicide and suicide related behaviours in developed countries is markedly different from those in the developing countries. In countries such as India, the factors of gender and the presence of a mental illness play lesser role in the occurrence of suicidal behaviours (Vijaykumar, 2004). A cross-country study in 2008 has shown that the transition from the ideation stage to the first suicide attempt happens with the first year of ideation onset 60% of the time across all the countries. The study has also highlighted certain risk—factors for suicidal behaviour that were consistent across all countries. These factors included female sex, younger age, fewer years of education, unmarried status, and the presence of a mental disorder (Nock et al., 2008).

Another study done in the Indian state of Odisha has attempted to study the risk factors associated with suicide attempts. The results have revealed that repeaters and the first time attempters differ on the basis of the factors like middle age, family history of psychiatric disorders, past psychiatric history, current psychiatric illness, communication of suicidal ideas, the use of physical methods and high potential attempts. The frequent life events that were prominent among the suicide attempters included major physical illness, family and marital conflicts, financial problems and failure in examinations (Kar, 2010).

Personality Profile of Suicide Ideators, Attempters and Completers

Are persons who attempt suicide different from those who succeed? Research has shown that personality traits and suicidal tendency have a strong relationship, and that the traits may either prevent the risk or trigger the tendency. Most of the demographic variables (e.g. race, ethnicity, academic achievement, socio-economic status) do not

distinguish attempters from ideators. Among adults, lower rates of suicide attempts have been reported among African Americans and Hispanics compared to Caucasians, while among youth these findings are reversed (Crosby & Molock, 2006).

The trait most strongly associated with suicidal ideation and attempt is Neuroticism. Neuroticism is the main personality factor associated with the development of suicidal ideation while extraversion is the personality factor associated with the mitigation of hopelessness. Life satisfaction and perception of social support are associated with the development of suicide risk, independent of the severity of depressive symptoms. Duberstein, Conwell, and Caine (1994) found that completers were higher on neuroticism and lower on extraversion than age-matched controls. Depressivity and self-consciousness are also higher among those who die by suicide (Brezo, Paris, & Turecki, 2006). This association stands in many studies irrespective of a diagnosis of depression and across age groups (Brezo et al., 2006). Low levels of extraversion have also been correlated with suicidal thoughts and behaviours in clinical and non-clinical samples across age groups (reviewed in Brezo et al., 2006). Psychoticism has also been associated with suicide ideation and attempts in a number of populations including women, substance abusers, and college students (Lester, 1987; Lolas, Gomez, & Suarez, 1991; Roy, 2003).

People with a higher agreeableness level have closer and more supportive relationships with others and individuals who possess both conscientiousness and agreeableness traits develop a plan for future and motivate themselves in accordance with their aims more easily (Soto & John, 2014). Agreeableness trait acts as a protective factor by preventing a person from engaging in suicidal tendency, whereas neuroticism and introversion are predisposing risk factors in suicidality (Fergusson, Woodward, & Horwood, 2000). High levels of agreeableness and low levels of openness are related with the absence of suicidal behaviour (Duberstein et al., 2000). Velting (1999) stated that conscientiousness is a strong predictor of suicide ideation especially among young males. Neuroticism is not only a strong predictor of suicide ideation (Farmer et al., 2001) but also has a dominant influence on suicide attempt and completion (Van Heeringen, 2001). Neuroticism, introversion and perfectionism are the shared features of suicide attempters (Brezo et al., 2006). In the same way, negative valence trait, may have an effect on suicidal behaviour.

Conrad et al. (2009) found both suicide ideators and attempters show high scores on emotional distress and depression but the attempters score higher on the temperament dimension of harm avoidance on the temperament and character inventory (TCI), compared with non-attempters. Suicide ideators are different from non-ideators on character dimension in terms of lower self-directedness and higher self-transcendence. The findings reveal that high harm avoidance is a personality trait associated with suicide attempt in major depression, whereas low self-directedness and high self-transcendence are related to suicidal ideation.

Less research exists on the relationship between impulsivity and ideation, though the evidence available suggests a weak relationship (Dougherty, Mathias, Marsh, Moeller, & Swann, 2004). Higher impulsivity has been reported to be associated with completed suicide (Brezo et al., 2006; Dumais et al., 2005; Ernst et al., 2004; Maser et al., 2002). The inconclusive relationship between suicidal ideations and

impulsivity is due to the instruments used to assess impulsivity. An interaction between impulsivity and age has been reported such that younger suicide completers are more likely to exhibit impulsivity than older suicide completers (McGirr, Renaud, Seguin, Lesage, & Turecki, 2008). Among individuals with psychotic disorders impulsivity does not appear to be related to suicide death (McGirr et al., 2006). Among a sample of young men, the higher the level of suicide ideation, higher the level of impulsivity (Conner, Meldrum, Wieczorek, Duberstein, & Welte, 2004). Mann, Waternaux, Haas, and Malone (1999) found that impulsivity was significantly higher among those with a history of attempt than those without it. One research group found that impulsive responses increased as a factor of the number of past suicide attempts (Dougherty, Mathias, Marsh, Papageorgiou, Swann, & Moeller, 2004b) while another research group (Keilp et al., 2006) found that impulsivity was not related to suicide attempts if aggression and hostility are controlled. Impulsive-aggression has more consistently been found to be related to suicide attempts. Indirect, verbal, general, and lifetime aggression were all found to be higher in diverse samples of attempters than in non-attempters (as reviewed in Brezo et al., 2006). When other variables were controlled for, aggression emerged as a significant predictor of suicide attempts in a clinical sample (Keilp et al., 2006).

Perfectionism, has been demonstrated to be related to suicide ideation and attempt in both clinical and community samples and above and beyond the contributions of depression and hopelessness (O'Connor, 2007). Perfectionism is a multidimensional construct. It may be self-oriented or socially prescribed. Self-oriented perfectionism refers to the need for one's own perfection whereas socially prescribed perfectionism is a belief that others impose perfectionistic standards and expectations on the self ("The people around me expect me to succeed at everything I do"). Hewitt, Flett, and Weber (1994) found higher levels of socially prescribed and self-oriented perfectionism in ideators as opposed to those without ideation. Socially prescribed perfectionism is relevant in suicide ideation and attempt among psychiatric adolescents as well as clinical and nonclinical adults (Enns, Cox, Sareen, & Freeman, 2001). Both self-oriented perfectionism and socially prescribed perfectionism are relevant in predicting suicide ideation; however, socially prescribed perfectionism is a stronger predictor of suicide ideation in adults than self-oriented perfectionism, especially for women (Chen, 2010).

Hopelessness may function only as a proximal risk factor in differentiating attempters from those who will go on to complete suicide. It has been identified as a risk factor for ideation, predictive of future ideation, and a mediator of ideation (reviewed in Brezo et al., 2006). Hopelessness has been found as one of the most widely found correlates of suicidal ideation. In a large 20-year prospective study of psychiatric outpatients, Brown, Beck, Steer, and Grisham (2000) found that high levels of hopelessness increased the risk of death due to suicides five-fold. A 12-year longitudinal study of predictors of suicide death among patients referred for a suicide attempt did not find a correlation between initial hopelessness and eventual suicide death (Suominen, Isometsa, Ostamo, & Lonnqvist, 2004). A separate study by Maser et al. (2002) that followed outpatients with affective disorders for 14 years found that initial hopelessness differentiated those who

completed suicide from the attempters in the first year but did not predict suicide over the rest of the follow-up period. It may function differently for different age groups. In a large community study, Cox, Enns, and Clara (2004) found that the odds ratios for hopelessness ranged from 1.6 to 4.6 for current, past, and lifetime ideation and attempts even when controlling for demographic and diagnostic factors. This shows that although hopelessness may be a good predictor of suicidality, it may not be able to differentiate ideators from attempters.

Rudd, Joiner, and Rajab (1996) found that personality disorder is associated with multiple suicide attempts rather than with a single attempt. Borderline personality disorder has been found to be associated with suicidality but is unable to distinguish between those who are ideators and attempters. Lack of premeditation, which is a sub factor of impulsivity, which means difficulty in thinking through the consequences of actions, characterized attempters. This means that attempters do not fully think about the consequences of their attempts and act on the spur of the moment. Ideators, on the other hand, think through their actions. Witte et al. (2008) found that it is not the attempt that is impulsive but the lifestyle that leads to it such as engaging in impaired driving, unsafe sex practices and the like.

Another personality trait, manipulativeness has been found to be associated with female ideators as compared to attempters, especially prison inmates. These inmates are thought to use their suicidal behaviours to gain some control over the environment, such as being transferred to a hospital or moved to a less restrictive setting (Fulwiler, Forbes, Santagelo, & Folstein, 1997). It is difficult to ascertain differences between ideators and attempters as the differences are very subtle to be tapped by an omnibus test of personality. Ideators portray on these tests as distancing from other people by manipulating, lying or disobeying. They show disregard for others and for society.

Researchers have proven that suicidal individuals are more likely than non-suicidal individuals to experience cognitive distortions. As compared to psychiatric control participants, recent attempters endorsed significantly more dysfunctional attitudes (Ellis & Ratliff, 1986). Individuals who recently attempted suicide are more likely than psychiatric controls to experience cognitive distortions, even when controlling for depression and hopelessness (Hyman et al., 2014). Chioqueta and Stiles (2005) reported negative automatic thoughts to be associated with increased risk for suicidal ideation. Active engagement in sports is associated with a reduced risk of suicidal ideation. An Indian study which compared these two groups concluded that attempters with high intent and completers were overlapping populations (Suresh Kumar, 2004). Sarkar, Sattar, Gode, and Basannar (2006) found that in those who had intended to die but accidentally survived (failed suicide group) the attempts were planned, intentionality and lethality were high, and most attempted to conceal the act. Executive functioning has also been found to be impaired in cases of suicide risk. Suicide Attempters have been found to exhibit poorer inhibition but better problem-solving ability as compared to Suicide Ideators. This shows that suicide attempt risk may be associated with better problem-solving skills, but worse inhibitory control (Burton, LeaVella, Weller, & Twamley, 2011).

Indian studies on suicide ideators and attempters have mainly focused on the socio-demographic profile or co-morbid psychiatric disorders. Shoib, Dar, Bashir, Qayoom, and Arib (2012) studied the socio-demographic and clinical profiles of suicide attempters in Kashmir valley. Females (54.17%) outnumbered males (45.27%). Majority of the patients were married and housewives from rural and low socio-economic backgrounds. They had no family history of self-harm. 21.90% were suffering from depression. Conflicts (31.8%), failure in exams (10.44%) were found as the most common precipitating factor. Upadhyaya, Gupta, Sharma, and Joshi (2012) in a study of 50 suicide attempters of Uttarakhand found housewives and unemployed men more prone to suicides with females from joint families attempting significantly more than from nuclear families. History of depression in females and history of substance abuse in family members were important predictors for suicidal attempts. Patients from urban backgrounds as outnumber the rural population in attempting suicides (Singh, Jindwani, & Sahu, 2012).

In a study of personality disorder among first attempters, the most common diagnoses were anankastic and histrionic personality disorder (Chandrasekaran, Gnanaseelan, Sahai, Swaminathan, & Perme, 2003). In a 16-PF study of personality, self-immolators were found to lack ego strength, lack frustration tolerance, be emotionally less stable and be impulsive (Kannapiran, Haroon, Vivekanandan, & Arunagiri, 1997). The association of impulsivity and marital discord among self-immolators has been frequently reported in Indian (Venkoba Rao et al., 1989) and other Asian studies (Suk, Han, & Yeon, 1991). Yen and Siegler (2003) examined the use of seven Minnesota Multiphasic Personality Inventory subscales in their ability to differentiate between male suicide completers and (1) clinically depressed men, and (2) a deceased control group consisting of men who have died of medical causes. The suicide completers had significantly higher scores on blaming self and Social Introversion when compared with controls. The results of this study suggest that those who eventually commit suicide have a tendency towards self-blame and social introversion during early adulthood.

Researchers have tried to differentiate suicide attempters and ideators who are suffering from schizophrenia. Schizophrenic patients are high on self-transcendence and low in self-directedness (Smith, Matthew, Cloninger, Harms, & Csernansky, 2008). High self-transcendence is associated with proneness to suicidal attempt (Zikic, Ciric, & Mitkovic, 2009). Self-directedness, which refers to such personality features as responsibility, purposefulness, resourcefulness and self-acceptance, is low in patients with depression and schizophrenia (Abrams et al., 2004; Smith et al., 2008). The dimension of self-directedness differentiated suicidal ideators from non-ideators, and also predicted the presence of current suicidal ideation.

Suicide Note Writers Versus Non-writers

Of those who commit suicide, only 15–40% leave suicide note. Suicide note is a message left by those who decide to bring an end to their life. It has been found that only 10% of suicide attempters do write a note (Gadit, 2007). They are a window to the manner in which suicides construct themselves, others and their surrounding reality and consequently to the reasons of death. Suicide notes are aimed at an audience and hence create a social act. They transport meanings and construct the reality about suicide. They enable the deceased to exert some influence even after death. They are a source of connection between the writers and their close ones. It is therefore important to study the content of suicide notes in order to understand the suicidal individual.

Suicide notes are markers of the severity of the attempt and provide good insight into the psychodynamics and frame of mind of the individual. Such notes are a great source of information and help in assessing the gravity of the problem. They indicate a problem that was intense enough to lead to the act. They can act as rich source of information about mental health morbidity, social stressors, forensic issues and the etiological factors leading to suicide. An in depth study of such suicide notes will help in understanding the dynamics of the problem, its early detection, prompt treatment and in case of mental illness, rehabilitation. There are a significant low percentage of people who leave the note; bottlenecks in legal system, retrieval of such notes from relatives of the deceased etc may be the possible reasons.

The incidence of suicide notes is on the rise during the last decade on the internet and through social media (Luxton, June, & Fairall, 2012). This is a new form of communication that is instantaneous and anonymous. Users can share and view the information instantaneously such as comments, images, videos etc and via facebook, instagram and twitter. This has unfortunately resulted in an increase in pro-suicidal behaviour. Completers are motivated by anger and revenge and are less likely to have escape as a motive. They tend to show self- blame and self-punishment as well as a common theme of hopelessness throughout the note (Leenaars, Lester, & Heim, 1996).

Those who complete suicide and whose method required little to no preparation leave significantly fewer notes. Elderly females left far fewer suicide notes than elderly males, and the letters were shorter (Cheung, Merry, & Sundram, 2015; Cerel, Moore, Brown, van de Venne, & Brown, 2015). Subjects whose jobs were household duties left fewer notes. Elderly subjects, as a group, left fewer notes which were typically shorter and contained specific instructions (Ho, Yip, Chiu, & Halliday, 1998).

Factors Differentiating Suicide Note Writers from Non-writers

Main reasons for writing a note include confession about a deed that resulted in guilt feelings, giving a reason for the act, instructing survivors about the disposal of property or apologizing. Those who do not do so are either illiterate, feel uncomfortable doing so, are impulsive, or have difficulty in expressing. The contents of such notes are seeking an apology for the act, inability to express their feelings while being alive, disappointment with people whom they cared a lot, not wanting to be a burden any more, failure to succeed or achieve a goal (Gadit, 2007). Heim and Lester (1990) found women to outnumber men in writing suicide notes while Girdhar, Leenaars, Dogra, Leenaars, and Kumar (2004) and O'Çonnor, Sheehy, and O'Connor (1999) found more number of men to write suicide notes as compared to women.

According to a Mexican study (Chavez-Hernandez, Paramo, Leenaars, & Leenaars 2006), level of education was regarded as a differentiating factor between suicide note writers and non-writers. Indian studies, however reveal that males wrote more suicide notes as compared to females. Some authors report no differences between the two groups in terms of sex, age, family status, psychiatric care, motive or method (Eisenwort et al., 2006). Elderly people are more likely to leave suicide notes as compared to youngsters (Heim & Lester, 1990) whereas Ho et al. (1998) found the opposite results. Elderly people use less violent method of suicide and those who used violent means were less likely to leave a suicide note (Salib, Cawley, & Healy, 2002). Non leavers of suicide notes committed suicides due to physical illness, psychiatric disorders or a previous history of mental illness (Kuwabara et al., 2006).

A study in Ireland (Foster, 2003) tried to determine the themes of suicide notes, major ones being apology/shame (74%), love for those left behind (60%), life too much to bear (48%), hopelessness (40%), burden to others (40%). On analysis of contents of suicide notes of adolescents, researchers in a Montreal study (Posener, La Haye, & Cheifetz, 1989) reveal that older adolescents were concrete, left specific instructions, did not address the note, did not give reason for the act and tended to choose intoxication as a method. Cultural factors also come into play as the rural women are subjected to forced marriages, bonded labour and educational deprivation (Gadit, 2007).

An Australian study (Carpenter, Bond, Tait, Wilson, & White, 2016) reveals no difference between the two groups. Differences were found in four areas: females are less likely to leave a suicide note, Aboriginal Australians are less likely to leave suicide notes, those who use gas as a method of suicide are more likely to leave notes while those who use a vehicle or train are less likely to leave notes. Those who suffer from mental illness are also less likely to leave suicide notes. Callanan and Davis (2009) found that those who lived alone and had made prior suicide left notes before committing suicide.

Differences in content of genuine and simulated suicide notes have also been studied by researchers. The genuine note writers accept and incorporate the idea that within a short while they will not be alive. They, unlike the simulated note-writer, take the additional step of converting their fantasy into reality of "imminent absence" (Shneidman & Farberow, 1957). Real suicide notes reflect an external locus of control, have no specific explanations, and have a positive emotional content and instructions that are left for those who remain behind (Gregory, 1999).

Fictitious writers tend to blame others. Real note writers express needs that demand reactions from others, describe specific motives, positive emotional states and ambivalent feelings towards the loved ones. They use more active verbs (e.g. do, get, give, take, and see). Six forms of genuine suicide notes have been categorized by Jacobs (1971). They are: first form notes (characterized by asking for forgiveness or indulgence), sorry illness notes (great suffering; apologies given), not sorry illness notes (great suffering; no apologies given), direct accusation notes (a person responsible for the suicide's death identified), will and testament notes (how the author's property should be apportioned) and notes of instruction (often brief and containing elements of will and testament notes). A fictitious note writer, in order to gain an insight into the suicidal individual's cognition, would need to assume an insider's perspective (Smith & Osborn, 2004). The lack of clear findings between suicide note writers and non-writers is due to differences in sample studied and analyses adopted. Suicide note writing has an important social dimension.

Conclusion

In future, studies need to concentrate on methods and lethality of suicide attempts since they may be associated with impulsivity (Giegling et al., 2009; Zouk et al., 2006) and accordingly could be associated with personality dimensions. It is important to examine the relationship between suicidal behaviour and specific risk factors more proximal to a suicide attempt. Most of the studies are retrospective in nature and thus, reporting on suicide attempts may be influenced by recall ability of the individual or willingness to disclose such information. Moreover, the use of questionnaires that have multiple items for assessing suicidal ideation may increase the reliability of this variable being assessed. As opposed to most of the studies that have used mentally ill sample as controls, inclusion of healthy comparison group may give us more insight into the possible differences between attempters, non-attempters and controls as well as ideators, non-ideators and controls on the various personality dimensions. To prevent suicidal behaviour, it is important to better understand which personality traits are associated with suicidal ideation and suicide attempts.

References

Abrams, K. Y., Yune, S. K., Kim, S. J., Jeon, H. J., Han, S. J, Hwang, J., … Lyoo, I. K. (2004). Trait and state aspects of harm avoidance and its implications for treatment in major depressive disorder, dysthymic disorder, and depressive personality disorder. *Psychiatry & Clinical Neuroscience 58*(3), 240–248.

Brezo, J., Paris, J., & Turecki, G. (2006). Personality traits as correlates of suicidal ideation, suicide attempts and suicide completions: A systematic review. *Acta Psychiatrica Scandinavia, 113*(3), 180–206.

Brown, G. K., Beck, A. T., Steer, R. A., & Grisham, J. R. (2000). Risk factors for suicide in psychiatric outpatients: A 20-year prospective study. *Journal of Consulting and Clinical Psychology, 68*(3), 371–377.

Burton, C. Z., Lea Vella, B. A., Weller, J. A., & Twamley, E. W. (2011). Differential effects of executive functioning on suicide attempts. *Clinical Neuroscience, 23*(2), 173–179.

Callanan, V. J., & Davis, M. S. (2009). A comparison of suicide note writers with suicides who did not leave notes. *Suicide and Life-Threatening Behaviour, 39*(5), 558–568.

Carpenter, B., Bond, C., Tait, G., Wilson, M., & White, K. (2016). Who leaves suicide notes? An exploration of victim characteristics and suicide method of completed suicides in Queensland. *Archives of Suicide Research, 20*(2), 176–190.

Centers for Disease Control and Prevention (CDC). Web-based Injury Statistics Query and Reporting System (WISQARS). (2013, 2011) National Center for Injury Prevention and Control, CDC (producer). Retrieved from http://www.cdc.gov/injury/wisqars/index.html

Cerel, J., Moore, M., Brown, M. M., van de Venne, J., & Brown, S. L. (2015). Who leaves suicide notes? A six-year population-based study. *Suicide and Life Threatening Behaviour, 45*(3), 326–334.

Chen, C. (2010). *Perfectionism and suicide ideation: An assessment of the specific vulnerability hypothesis and stress generation model.* A thesis submitted in partial fulfilment of the requirements for the degree of Master of Arts University of Toronto.

Cheung, G., Merry, S., & Sundram, F. (2015). Late-life suicide: Insight on motives and contributors derived from suicide notes. *Journal of Affective Disorders, 185,* 17–23.

Chandrasekaran, R., Gnanaseelan, J., Sahai, A., Swaminathan, R. P., & Perme, B. (2003). Psychiatric and personality disorders in survivors following their first suicide attempt. *Indian Journal of Psychiatry, 45*(2), 45–48.

Chavez-Hernandez, A. M., Paramo, D., Leenaars, A. A., & Leenaars, L. (2006). Suicide notes in Mexico: What do they tell us? *Suicide and Life Threatening Behaviour, 36*(6), 709–715.

Chioqueta, A. P., & Stiles, T. C. (2005). Personality traits and the development of depression, hopelessness, and suicide ideation. *Personality and Individual Differences, 38*(6), 1283–1291.

Conner, K. R., Meldrum, S., Wieczorek, W. F., Duberstein, P. R., & Welte, J. W. (2004). The association of irritability and impulsivity with suicidal ideation among 15- to 20-year-old males. *Suicide and Life-Threatening Behaviour, 34*(4), 363–373.

Conrad, R., Walz, F., Geiser, F., Imbierowicz, K., Liedtke, R., & Wegener, I. (2009). Temperament and character personality profile in relation to suicidal ideation and suicide attempts in major depressed patients. *Psychiatry Research, 170*(2–3), 212–217.

Cox, B. J., Enns, M. W., & Clara, I. P. (2004). Psychological dimensions associated with suicidal ideation and attempts in the National Comorbidity Survey. *Suicide and Life-Threatening Behaviour, 34*(3), 209–219.

Crosby, A. E., & Molock, S. D. (2006). Suicidal behaviours in the African American Community. *Journal of Black Psychology, 32*(3), 1–9.

Dougherty, D. M., Mathias, C. W., Marsh, D. M., Moeller, F. G., & Swann, A. C. (2004a). Suicidal behaviours and drug abuse: Impulsivity and its assessment. *Drug and Alcohol Dependence, 76S,* 93–105.

Dougherty, D. M., Mathias, C. W., Marsh, D. M., Papageorgiou, T. D., Swann, A. C., & Moeller, F. G. (2004b). Laboratory measured behavioural impulsivity relates to suicide attempt history. *Suicide and Life-Threatening Behaviour, 34*(4), 374–385.

Duberstein, P. R., Conwell, Y., & Caine, E. D. (1994). Age differences in the personality characteristics of suicide completers: Preliminary findings from a psychological autopsy study. *Psychiatry, 57*(3), 213–224.

Duberstein, P. R., Conwell, Y., Seidlitz, L., Denning, D. G., Cox, C., & Caine, E. D. (2000). Personality traits and suicidal behaviour and ideation in depressed inpatients 50 years of age and older. *The Journals of Gerontology, Series B: Psychological Sciences and Social Sciences, 55,* 18–26.

Dumais, A., Lesage, A. D., Alda, M., Rouleau, G., Dumont, M., Chawky, N., … Turecki, G. (2005). Risk factors for suicide completion in major depression: A case-control study of impulsive and aggressive behaviours in men. *American Journal of Psychiatry, 162*(11), 2116–2124.

Eisenwort, B., Berzlanovich, A., Willinger, U., Eisenwort, G., Lindorfer, S., & Sonneck, G. (2006). Suicide notes and their importance to suicide research: The representativeness of suicide note writers. *Nervenarzt, 77*(11), 1355–1362.

Ellis, T. E., & Ratliff, K. G. (1986). Cognitive characteristics of suicidal and non-suicidal psychiatric inpatients. *Cognitive Therapy and Research, 10*(6), 625–634.

Enns, M. W., Cox, B. J., Sareen, J., & Freeman, P. (2001). Adaptive and maladaptive perfectionism in medical students: A longitudinal investigation. *Medical Education, 35*(11), 1034–1042.

Ernst, C., Lalovic, A., Lesage, A., Seguin, M., Tousignant, M., & Turecki, G. (2004). Suicide and no axis I psychopathology. *BMC Psychiatry, 4,* 7–11.

Farmer, A., Redman, K., Harris, T., Mahmood, A., Sadler, S., & Mc Guffin, P. (2001). The Cardiff sib-pair study: Suicidal ideation in depressed and healthy subjects and their siblings. *Crisis, 22* (2), 71–73.

Fergusson, D. M., Woodward, L. J., & Horwood, L. J. (2000). Risk factors and life processes associated with the onset of suicidal behaviour during adolescence and early adulthood. *Psychological Medicine, 30*(1), 23–39.

Foster, T. (2003). Suicide note themes and suicide prevention. *International Journal of Psychiatric Medicine, 33*(4), 323–331.

Fulwiler, C., Forbes, C., Santagelo, S. L., & Folstein, M. (1997). Self-mutilation and suicide attempt: Distinguishing features in prisoners. *Journal of the American Academy of Psychiatry and the Law, 25*(1), 69–77.

Gadit, A. A. M. (2007). The suicide note: What can be done in the light of its implications? *Journal of Pakistan Medical Association, 57*(6), 327–328.

Giegling, I., Olgiati, P., Hartmann, A. M., Calati, R., Moller, H. J., Rujescu, D., & Serretti, A., (2009). Personality and attempted suicide. Analysis of anger, aggression and impulsivity. *Journal of Psychiatric Research, 43*(16), 1262–1271.

Goldsmith, S. K., Pellmar, T. C., Kleinman, A. M., & Bunney, W. E. (2002). *Reducing suicide: A national imperative*. Washington, DC: National Academy Press.

Girdhar, S., Leenaars, A. A., Dogra, T. D., Leenaars, L., & Kumar, G. (2004). Suicide notes in India: What do they tell us? *Archives of Suicide Research, 8*(2), 179–185.

Gregory, A. The decision to die (1999). The psychology of the suicide note. In Canter D & Alison L. (Eds.), *Offender Profiling Series (vol.1): Interviewing and deception, Aldershot* (pp. 127–156). UK: Ashgate Dartmouth.

Heim, N., & Lester, D. (1990). Do suicides who write notes differ from those who do not? A study of suicides in West Berlin. *Acta Psychiatrica Scandinavia, 82*(5), 372–373.

Hewitt, P. L., Flett, G. L., & Weber, C. (1994). Dimensions of perfectionism and suicide ideation. *Cognitive Therapy and Research, 18*(5), 439–460.

Ho, T. P., Yip, P. S. F., Chiu, C. W. F., & Halliday, P. (1998). Suicide notes: What do they tell us? *Acta Psychiatrica Scandinavia, 98*(6), 467–473.

Hyman, S. J., Cunningham, A., Wenzel, A., Mattei, S., Brown, G. K., & Beck, A. T. (2014). Cognitive distortions and suicide attempts. *Cognitive Therapy Research, 38*(4), 369–374.

Jacobs, J. (1971). A phenomenological study of suicide notes. In A. Giddens (Ed.), *The sociology of suicide: A selection of readings* (pp. 332–348). London: Frank Cass and Company Limited.

Kannapiran, T., Haroon, A. E., Vivekanandan, S., & Arunagiri, S. (1997). Personality profiles of self-immolators. *Indian Journal of Psychiatry, 39*(1), 37–40.

Kar, N. (2010). Profile of risk factors associated with suicide attempts: A study from Orissa, India. *Indian Journal of Psychiatry, 52*(1), 48–56.

Keilp, J. G., Gorlyn, M., Oquendo, M. A., Brodsky, B., Ellis, S. P., Stanley, B., & Mann, J. J. (2006). Aggressiveness, not impulsiveness or hostility, distinguishes suicide attempters with major depression. *Psychological Medicine, 36*(12), 1779–1788.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National comorbidity survey. *Archives of General Psychiatry, 56*(7), 617–626.

Klonsky, E. D., & May, A. M. (2015). The Three-Step Theory (3ST): A new theory of suicide rooted in the "Ideation-to-Action" Framework. *International Journal of Cognitive Therapy, 8* (2), 114–129.

Kumar, S., Verma, A. K., Bhattacharya, S., & Rathore, S. (2013). Trends in rates and methods of suicide in India. *Egyptian Journal of Forensic Sciences, 3*(3), 75–80.

Kuwabara, H., Shioiri, T., Nishimura, A., Abe, R., Nushida, H., Ueno, Y., ... Someya, T. (2006). Differences in characteristics between suicide victims who left notes or not. *Journal of Affective Disorders, 94*(1–3), 145–149.

Leenaars, A. A., Lester, D., & Heim, N. (1996). Menninger's motives for suicide in suicide notes from Germany and the USA. *Crisis, 17,* 87–109.

Lester, D. (1987). Suicidal preoccupation and dysthymia in college students. *Psychological Reports, 61*(3), 762.

Lolas, F., Gomez, A., & Suarez, L. (1991). EPQ-R and suicide attempt: The relevance of psychoticism. *Personality and Individual Differences, 12*(9), 899–902.

Luxton, D. D., June, J. D., & Fairall, J. M. (2012). Social media and suicide: A public health perspective. *American Journal of Public Health, 102*(2), 5195–5200.

Mann, J. J., Waternaux, C., Haas, G. L., & Malone, K. M. (1999). Toward a clinical model of suicidal behaviour in psychiatric patients. *American Journal of Psychiatry, 156*(2), 181–189.

Maser, J. D., Akiskal, H. S., Schettler, P., Scheftner, W., Mueller, T., Endicott, J., … Clayton, P. (2002). Can temperament identify affectively ill patients who engage in lethal or near lethal suicidal behaviour? A 14-year prospective study. *Suicide and Life-Threatening Behaviour, 32* (1), 10–32.

Mayer, P., & Ziaian, T. (2002). Suicide, gender, and age variations in India: Are women in Indian society protected from suicide? *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 23*(3), 98–103.

McAuliffe, C. M. (2002). Suicidal ideation as an articulation of intent: A focus for suicide prevention? *Achieves of Suicide Research., 6,* 323–338.

McGirr, A., Tousignant, M., Routhier, D., Pouliot, L., Chawky, N., Margolese, H. C., & Turecki, G. (2006). Risk factors for completed suicide in schizophrenia and other chronic psychotic disorders: A case-control study. *Schizophrenia Research, 84*(1), 132–143.

McGirr, A., Renaud, J., Seguin, M., Lesage, A., & Turecki, G. (2008). Impulsive-aggressive behaviours and completed suicide across the life cycle: A predisposition for younger age of suicide. *Psychological Medicine, 38*(3), 407–417.

National Crime Records Bureau. (2005). *Suicides in India*. National Crime Records Bureau Ministry of Affairs, New Delhi.

National Crime Records Bureau. (2011). *Suicides in India*. National Crime Records Bureau, Ministry of Home Affairs, New Delhi.

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., & De Graaf, R. (2008). Cross-national prevalence and risk factors for suicidal ideation, plans and attempts. *The British Journal of Psychiatry, 192*(2), 98–105.

O'Connor, R. C. (2007). The relations between perfectionism and suicidality: A systematic review. *Suicide and Life-Threatening Behaviour, 37*(6), 698–714.

O'Çonnor, R. C., Sheehy, N. P., & O'Connor, D. B. (1999). A thematic analysis of suicide notes. *Crisis, 20*(3), 106–114.

Pirkis, J., Beautrais, A., & Durkee, T. (2009). Suicide attempts in New Zealand and Australia. In D. Wasserman & C. Wasserman (Eds.), *Oxford textbook of suicidology and suicide prevention: A global perspective* (pp. 127–131). Oxford, UK: Oxford University Press.

Posener, J. A., LaHaye, A., & Cheifetz, P. N. (1989). Suicide notes in adolescence. *Canadian Journal of Psychiatry, 34*(3), 171–176.

Roy, A. (2003). Characteristics of drug addicts who attempt suicide. *Psychiatry Research, 121*(1), 99–103.

Rudd, M. D., Joiner, T., & Rajab, M. H. (1996). Relationships among suicide ideators, attempters, and multiple attempters in a young-adult sample. *Journal of Abnormal Psychology, 105*(4), 541–550.

Salib, E., Cawley, S., & Healy, R. (2002). The significance of suicide notes in the elderly. *Aging Mental Health, 6*(2), 186–190.

Sarkar, P., Sattar, F. A., Gode, N., & Basannar, D. R. (2006). Failed suicide and deliberate self-harm: A need for specific nomenclature. *Indian Journal of Psychiatry, 48*(2), 78–83.

Shneidman, E. S., & Farberow, N. L. (1957). *Clues to suicide*. New York: McGraw-Hill Book Company Inc.

Shoib, S., Dar, M. M., Bashir, H., Qayoom, G., & Arif, T. (2012). Psychiatric morbidity and the socio-demographic determinants of patients attempting suicide in Kashmir Valley: A cross-sectional study. *International Journal of Health Sciences and Research, 2*(7), 45–53.

Silverman, M. (2009). Suicide attempts in North America. In D. Wasserman & C. Wasserman (Eds.), *Oxford textbook of suicidology and suicide prevention: A global perspective* (pp. 117–121). Oxford, UK: Oxford University Press.

Singh, K., Jindwani, K., & Sahu, R. N. (2012). Demographic profile of patients with attempted suicide. *Biomedical Research, 23*(2), 234–236.

Smith, M. J., Cloninger, C. R., Harms, M. P., & Csernansky, J. G. (2008). Temperament and character as schizophrenia related endophenotypes in non-psychotic siblings. *Schizophrenia Research, 104*(1–3), 198–205.

Smith, J. A., & Osborn, M. (2004). Interpretative phenomenological analysis. In G. M. Breakwell (Ed.), *Doing social psychological research* (pp. 229–255). Oxford: BPS Blackwell.

Soto, C. J., & John, O. P. (2014). Traits in transition: The structure of parent-reported personality traits from early childhood to early adulthood. *Journal of Personality, 82*(3), 182–199.

Suk, J. H., Han, C. H., & Yeon, B. K. (1991). Suicide by burning in Korea. *International Journal Social Psychiatry, 37*(2), 141–145.

Suominen, K., Isometsa, E., Ostamo, A., & Lonnqvist, J. (2004). Level of suicidal intent predicts overall mortality and suicide after attempted suicide: A 12-year follow-up study. *BMC Psychiatry, 4,* 11.

Suresh Kumar, P. N. (2004). An analysis of suicide attempters versus completers in Kerala. *Indian Journal of Psychiatry, 46*(2), 144–149.

Sveticic, J., & De Leo, D. (2012). The hypothesis of a continuum in suicidality: A discussion on its validity and practical implications. *Mental Illness, 4*(2), e15.

Upadhyaya, S. K., Gupta, S., Sharma, A., & Joshi, A. (2012). A study of psychosocio-demographic variables of suicide attempters in hilly areas of Uttarakhand. *Indian Journal of Community Health, 24*(3), 222–226.

Van Heeringen, C. (2001). *Understanding suicidal behaviour: The suicidal process approach to research, treatment and prevention*. West Sussex; England: Wiley.

Venkoba Rao, A., Mahendran, N., Gopalakrishnan, C., Reddy, T. K., Prabhakar, E. R., Swaminathnan, R., … Catherine, I.(1989). One hundred female burns cases: A study in suicidology. *Indian Journal of Psychiatry, 31*(1), 43–50.

Velting, D. M. (1999). Suicidal ideation and the five-factor model of personality. *Personality and Individual Differences, 27*(5), 943–952.

Vijayakumar, L. (2004). Suicide prevention: The urgent need in developing countries. *World Psychiatry, 3*(3), 158–159.

Vijaykumar, L. (2007). Suicide and its prevention: The urgent need in India. *Indian Journal of Psychiatry, 49*(2), 81–84.

Witte, T. K., Merrill, K. A., Stellrecht, N. E., Bernert, R. A., Hollar, D. L., Schatschneider, C., & Joiner, T. E. (2008). "Impulsive" youth suicide attempters are not necessarily all that impulsive. *Journal of Affective Disorders, 107*(1–3), 107–116.

World Health Organization. (2014). *Preventing suicide: A global imperative*. World Health Organization.

Yen, S., & Siegler, I. C. (2003). Self-blame, social introversion and male suicides: Prospective data from a longitudinal study. *Archives of Suicide Research, 7*(1), 17–27.

Young, E. E., Lariviere, W. R., & Belfer, I. (2012). Genetic basis of pain variability: Recent advances. *Journal of Medical Genetics, 49*(1), 1–9.

Zikic, O., Ciric, S., & Mitkovic, M. (2009). Depressive phenomenology in regard to depersonalization level. *Psychiatria Danubina, 21*(3), 320–326.

Zouk, H., Tousignant, M., Seguin, M., Lesage, A., & Turecki, G. (2006). Characterization of impulsivity in suicide completers: Clinical, behavioural and psychosocial dimensions. *Journal of Affective Disorders, 92*(2–3), 195–204.

Chapter 21
Chronic Suicidality and Personality Disorders

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The word suicide was first devised by Sir Thomas Brown in 1963 and used in his book Religio Medici (Barraclough & Shepherd, 1994). Self-injurious behaviours would serve to include both suicidal and non-suicidal self-harm. Stengel identified differences between people who completed suicide and those who attempted suicide but survived (Stengel, 1964). He suggested that a degree of suicidal intent was present in both. Suicidal behaviour is usually defined as a self-destructive behaviour with the intent to die (Gerson & Stanley, 2002). Aborted suicidal attempt was defined as an event in which an individual comes close to attempting suicide but does not complete the act and thus sustains no injury (Barber, Marzuk, Leon, & Portera, 1998). The range of suicidal behaviours like suicidal ideation, gestures, attempts and completed suicide are considered to be on a continuum having a common biological etiology. However, there are many nonfatal suicidal acts that are not related to actual suicide and whose dynamics and biology are different (Arie, Haruvi-Catalan, & Apter, 2005). Kreitman introduced the term 'parasuicide' to refer to a nonfatal act of deliberate self-injury (Kreitman, Philip, Greer, & Bagley, 1969). The differentiating feature of parasuicide from suicide is that the former is

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not fatal. Intent is difficult to evaluate and has therefore been left out of major research on parasuicide (Arie et al., 2005). Therefore both suicidal attempts and deliberate self-harm would both be subsumed under the rubric of parasuicide (Gerson & Stanley, 2002). Thus medication overdose, self-cutting, burning, attempting to hang will be subsumed under parasuicide. However, since parasuicide clubs together all forms of self-injury, this can lead to a misunderstanding of the differences in the function, dangerousness and treatment of self-injurious behaviours. Deliberate self harm similar to parasuicide includes all types of self-injurious behaviour, including suicide attempts and non-suicidal self-injury (Turecki & Brent, 2015). Distinct from the group of suicidal behaviours, self-mutilation comes under the category of non-suicidal self-injury. Feldman further defined self-mutilation as intentionally damaging a part of the body without a conscious attempt to die (Feldman, 1988). Non-suicidal self-injury implies to self-destructive behaviours with no intent to die. These are often triggered by distress and tend to serve an internal purpose to the person. However, there continues to be lack of consistency amongst the various definition and terminologies describing suicidal behaviours and non-suicidal self-injury.

Epidemiology

Chronic suicidal ideation can be best understood within the construct of personality. Personality refers to all of the characteristics that distinguish a constantly developing, self organizing human being from predictable machine-like objects. Personality disorders are characterized by enduring, pervasive and maladaptive patterns of behaviour, cognitions and inner experiences that are exhibited across different contexts and deviate significantly from those accepted by the individual's culture. The most prevalent personality disorder found in the community was Obsessive-Compulsive personality disorder (7.88%), followed by Paranoid personality disorder (4.41%), Antisocial personality disorder (3.63%), Schizoid personality disorder (3.13%), Avoidant personality disorder (2.36%), Histrionic personality disorder (1.84%) and Dependent personality disorder (0.49%) (Grant et al., 2004). In a British study, the weighted prevalence of personality disorder was found to be 4.4% (Coid, Yang, Tyrer, Roberts, & Ullrich, 2006) while the prevalence in psychiatric outpatient settings range from 12.9 to 59% (Bodlund, Grann, Ottosson, & Svanborg, 1998; Casey & Tyrer, 1990; Fabrega, Ulrich, Pilkonis, & Mezzich, 1993).

Suicidal ideation both acute and chronic is perhaps the most troubling symptom complex with affective, cognitive and behavioural manifestations for those ailing from it. Personality disorders have been linked to a lifetime of increased risk of suicide. The American Psychiatric Association estimates lifetime rates of suicide ranging from 3 to 9% (American Psychiatric Association, 2003). In one of the researches, the estimated risk for suicide was about seven times greater in persons with personality disorder when compared with the general population, (Harris &

Barraclough, 1997) and about 13-fold for formerly hospitalized patients with personality disorders (Black & Winokur, 1986; Zilber et al., 1989).

Conversely, in a study done in Asian population, a high proportion of persons who completed suicide suffered from ICD-10 personality disorder (46.7–76.7%), and the most prevalent category was Emotionally Unstable personality disorder (26.7–56.7%). The risk for suicide was significantly associated with Emotionally Unstable personality disorder. Comorbidity amongst personality disorders along with comorbidity of personality disorder with other psychiatric disorders, particularly severe depression was also significantly associated with suicide risk (Cheng, Mann, & Chan, 1997).

Functions of Self-injury

A review of literature shows that seven functions of self-injury have been consistently identified. These include affect-regulation, anti-dissociation, anti-suicide, interpersonal boundaries, interpersonal-influence, self-punishment and sensation-seeking (Klonsky, 2007). It is imperative to note that these functions are not mutually exclusive and there might be considerable overlap between these functions with each act of self-harm. The affect-regulation model of self-injury suggests that self-injury is a strategy to alleviate acute negative affect or affective arousal (Gratz, 2003). Linehan had theorized that early invalidation environments lead to poor coping skills and such individuals with biological dispositions for emotional instability were less effective in managing their emotions and are therefore prone to use self-injury as a maladaptive strategy for affect-regulation (Linehan, 1993). The anti-dissociation model posits self-injury as a response to episodes of dissociation or depersonalization that individuals might feel at the peak of their emotional state. The self injurious act might be used to terminate the periods of dissociation or depersonalization and feel real again (Klonsky, 2007). The anti-suicide model views self-injury as a mechanism to resist suicidal urges. It may be used to express suicidal desires without actually attempting a fatal act. The interpersonal-influence model stipulates that self-injury is used to influence the self-injurer's environment (Klonsky, 2007). The acts may be a cry for help or to avoid abandonment. Alternatively, the self-injurer may not have any desire to manipulate the environment, but the environment may be affected and reactive to the behaviour (Gerson & Stanley, 2002). The interpersonal boundaries model is based on the object relation's theory. Gunderson viewed self-harm as an attempt to re-establish contact with a lost object and to create an illusion of control over new objects (Gunderson, 2009). The self-punishment model suggests that self-injury is an expression of anger towards oneself. Linehan (1993) hypothesizes that self-injurers have learned from their environments to punish or invalidate themselves. Self-injury therefore would be ego-syntonic and soothing in the face of emotional distress. The sensation-seeking model considers self-injury as a mean of providing excitement. This model caries the least evidence compared to others (Laye-Gindhu & Schonert-Reichl, 2005).

Acute Versus Chronic Suicidality

Though it would be somewhat clinically artificial to dichotomize suicidal ideation into acute and chronic states; however, it has pragmatic values in terms of assessment and management. Acute suicidal ideation is characteristically an exceptional event in the life of an individual—typically abrupt or very recent in onset (Sansone, 2004). It usually manifests after an overwhelming stressor and can cause distress to manifest an axis I disorders like depression. It is usually assumed to be a response to a profound sense of despair and desire for death, which, if unsuccessful, usually results in a persistence of the depressed mood state. While acute suicidal ideation usually occurs in the face of stressors or axis I disorder like depression and psychosis, chronic suicidal ideation is an ongoing, protracted process usually associated with axis II disorders especially borderline personality disorder. Chronic suicidal ideation seems to be more episodic, transient and a regulator of the emotional state. Persons with borderline personality disorder often report that there is a gradual build-up of suicidal ideation, which, when acted on, result in improvement in the affective state and a release of pent-up emotions. Suicidal ideation in borderline personality disorder varies in intensity over time. Findings from the Collaborative Longitudinal Study of Personality Disorders showed that borderline personality symptoms tend to wax and wane, depending on life events (Grilo, McGlashan, & Skodol, 2000). Therefore a person with borderline personality disorders during a good phase may not elicit any suicidal ideation, while during a crisis phase may have exacerbation of borderline pathology and heightened suicidal ideation. While comorbidity of major depressive episode and borderline personality disorder is common (Yen et al., 2003), it does not account for chronic suicidality. Long-term affective instability with a high level of sensitivity to the environment is a key feature of borderline personality disorder, which is posited to be a key element in maintaining the chronic suicidality in such patients. It can be hypothesized that chronic suicidality has three functions. The first involves dealing with painful affects (Linehan, 1993). A second function of chronic suicidality in borderline personality disorder can be to communicate distress (Paris, 2002). The third function of chronic suicidality could be to gain a sense of control. Borderline patients characteristically complain a sense of emptiness along with a fear of abandonment. This internal state may result in suicidal behaviours in an attempt to gain control over one's own life. Thus while chronic suicidal ideation might be a hallmark of borderline personality disorder and other severe personality disorders, it becomes imperative to continue assessing for acute risk of suicide in these patients. There is no clear cut distinction between the two and this clinical judgment depends as much on the therapist's anxiety as on objective risk (Paris, 2002).

Personality Dimensions and Suicidality

Although a direct causal relation between personality traits and/or disorder with suicidal behaviour is complex; however, research since 1990s has suggested that certain personality features and/or disorders are related to suicidal behaviour and are independent of other known risk factors (Oldham, Skodol, & Bender, 2007). Research has shown that patients at risk of suicide have specific temperaments as well as personality and defense mechanism profiles (Pompili et al., 2008). Three sets of personality constellations have been consistently found in studies that are related with increased suicidality. Impulsive aggressiveness has been shown to have a strong association to a history of suicidal behaviour (Arie et al., 2005; Oldham et al., 2007; Pompili et al., 2008; Zouk, Tousignant, Seguin, Lesage, & Turecki, 2006). Biological studies have also supported the association between impulsivity and suicidality. Oquendo and Mann (2000) conducted a comprehensive review of animal and human studies evaluating the biology of impulsivity and suicidality. They noted that impulsive aggression was associated with lower serotonin levels. Gerson and Stanley (2002) summarized that self-injurious behaviour involved lower serotonin and abnormal dopamine levels while suicidal behaviours involve lower serotonin and enhanced dopamine and norepinephrine levels. On the other hand, individual who are perfectionists and vulnerable to narcissistic injury might also be at increased risk of suicide. Suicide attempts in narcissistic patients can arise because of their very fragile self-esteem and in response to perceived narcissistic injury (Oldham et al., 2007). The theoretical and empirical literature on adolescent suicide also point towards an association between depression, perfectionism, narcissism and suicidal behaviour (Arie et al., 2005). A third category of individual with consistently elevated risk of suicidal behaviours is those with emotional dysregulation. Linehan (1993), hypothesized that emotional dysregulation in conjunction with an invalidating environment explained the suicidal behaviour characteristic of individuals with borderline personality disorder. Emotional or affective dysregulation and impulsive aggression are considered as the two most relevant factors for suicidal or self-injurious behaviour in patients with borderline personality disorder (Oldham, 2006). Other traits that have been useful in predicting history of suicidal attempts are aggression, anxiety, neuroticism, extroversion, impulsivity, hostility and psychoticism (Brezo, Paris, & Turecki, 2006). Temperament has also been studied in the context of suicidality. In one study, irritable temperament and social introversion were the strongest predictors of suicide risk while hyperthymic temperament was found to be a protective factor both for hopelessness and suicide risk (Pompili et al., 2008). Specific affective temperament types (depressive, cyclothymic, hyperthymic, irritable and anxious) have also been found to have a strong relationship with suicidal behaviour (Kochman et al., 2005).

Assessment for Suicide Risk

The assessment and management of suicidality in patients with borderline personality disorder can be challenging and frustrating for even the most experienced clinicians, yet it is possible to identify acutely increased risk and use interventions to establish a therapeutic alliance and de-escalate the crisis situation. A detailed psychiatric evaluation is the first and foremost step in assessment of risk of suicide. The purpose of this evaluation is to obtain information regarding patient's psychiatric and other medical history and current mental state about suicidal thinking and behaviour as well as through collateral source of information. This information enables the psychiatrist to identify specific factors influencing the risk for suicide or other suicidal behaviours and potential targets for interventions and in determining the setting for treatment of the patient. The use of suicide risk assessment scales can be used to assist the assessment but should not be used as a replacement to a thorough clinical assessment.

Many studies have identified risk factors at the population level, which are associated with an increased risk of suicidal behaviours. So extrapolation of these factors to an individual will allow categorization of the risk, but will be of less use in predicting suicide. The goal of a suicide assessment is therefore not to predict suicide, but rather to place a person along a putative risk continuum, to appreciate the basis of suicidality, and to allow for a more informed intervention (Jacobs, Brewer, & Klein-Benheim, 1999). Personality disorder may be a determinant of suicidal behaviour in many ways; by predisposing to major psychiatric disorders such as depression or alcoholism, by leading to difficulties in relationship and social adjustment, by precipitating undesirable life events, by impairing the ability to cope with a psychiatric or physical disorder and also by drawing a person into conflicts with family members and others (Kulkarni, Rao, & Begum, 2013). Persons with personality disorders have been associated with a subset of specific risk factors associated with increased suicidal behaviour. Some of these may be modifiable and therefore amenable to interventions. These are as follows:

Comorbid disorders. Empirical evidence shows that comorbid psychiatric and personality disorders in suicide attempters pose greater estimated risk of suicide than psychiatric disorders alone (Kulkarni et al., 2013). The estimated risk of suicide can be six times greater in persons with comorbid psychiatric and personality disorders than in person with psychiatric disorders alone (Foster, Gillespie, & McClelland, 1997). Most of the research in the field of comorbidity in personality disorders and suicidality has been done in the field on borderline personality disorder. Soloff, Fabio, Kelly, Malone and Mann (2005), found a higher level of lethality of suicide attempts in patients with comorbidity, compared to patients with borderline personality disorder alone. In another study on inpatients with borderline personality disorder, Soloff and colleagues (2000) reported that the comorbidity of borderline personality disorder and major depressive episode increased the number and seriousness of suicide attempts (Soloff, Lynch, Kelly, Malone, & Mann, 2000). They identified impulsivity and hopelessness as independent risk factors for

suicidal behaviours. Substance use has also been associated to be comorbid with personality disorders especially borderline personality disorder. This well-documented comorbidity of substance abuse with borderline personality disorder (Oldham, 2006; Oldham et al., 2007; Torgersen, Kringlen, & Cramer, 2001) increases patients' risk for impulsive suicidal behaviour and for impaired judgment. The impairment of judgment with substance use can lead to a low intent but high lethality suicidal attempt.

Recent life events. Adverse life events can be a tumultuous phase in any person's lifetime and these may push a vulnerable person towards suicide. In the stress diathesis model, suicidal behaviours occur when an individual with the diathesis is exposed to stress, which determines the behaviour's timing (Oquendo et al., 2004). In a study of persons with personality disorders attempting suicide, it was found that negative life events, particularly those pertaining to love, marriage or crime–legal matters, were significant predictors of suicide attempts, even after controlling for baseline diagnoses of borderline personality disorder, major depressive disorders, substance use disorders and a history of childhood sexual abuse (Yen et al., 2005). However, there has been contradictory evidence wherein life events after adjusting for borderline personality disorders and major depressive episode have not been predictive of suicidal attempt (Kelly, Soloff, Lynch, Haas, & Mann, 2000).

History of childhood abuse. A childhood history of sexual or physical abuse is common in borderline personality disorder and is linked with self-injurious behaviour in both clinical and nonclinical data. The history and severity of childhood sexual abuse but not physical abuse is also posited to predict adult suicidal behaviour independent of other known risk factors (Soloff, Lynch, & Kelly, 2002). These findings were further replicated recently wherein high levels of hostility and childhood history of sexual abuse led to an increased risk for suicidal behaviour in patients with borderline personality disorder (Ferraz et al. 2013).

In summary, patients with personality disorders especially borderline and anti-social personality disorders in the presence of the above mentioned risk factor show increased suicidal behaviours. The presence of comorbidity especially when acutely evident, may catapult these patients into acute suicidality.

When assessing suicidal behaviour in the emergency department in a patient with chronic suicidality, it is useful to consider a model that describes "acute-on-chronic" risk (Oldham, 2006). This model suggests that acute stressors can increase a person with personality disorders' suicidal risk. Comorbidities such as a past or current major depressive episode, substance use disorders and history of sexual abuse can provide important information about a patient's chronic level of risk, whereas a current major depressive episode or increasing substance use can indicate acute-on-chronic risk (Zaheer, Links, & Liu, 2008). A detailed history of previous suicidal attempts including the mode, lethality, circumstances of attempt and access to means should be necessarily done. This helps in assessing the clinical risk of suicidal behaviour. Additional risk for suicide should be considered in patients with Cluster B personality disorder, schizotypal features, lifetime post-traumatic stress disorder and cognitive-perceptual symptoms which may further heighten the suicide risk (McGirr, Paris, Lesage, Renaud, & Turecki, 2007). This rigorous approach to

assessment should also ensure that the known risk factors for suicide like other axis I diagnosis, age, social support be also assessed in persons with personality disorders. In patients who present with the 'acute-on-chronic' suicide risk, it is important to evaluate for the factors that are specific for the prevailing emotional state as they may suggest a proximal risk factor for suicidality. Rudd et al. (2006), gave the concept of suicide warning signs which they described as the earliest detectable sign that indicates heightened risk for suicide in the near-term. Similarly Hendin and his colleagues (2001) described three signs that immediately precede the suicide of a patient: a precipitating event, intense affective state other than depression like severe anxiety or extreme agitation, and recognizable changes in behaviour patterns including speech or actions that suggest suicide along with deterioration in occupational or social functioning, and increased substance abuse (Hendin, Maltsberger, Lipschitz, Haas, & Kyle, 2001). It is equally important to enquire into other personality profiles associated with increased suicidal risk like affective instability, impulsivity and aggression particularly in borderline patients. One should keep in mind that although patients with borderline personality disorder are usually chronically suicidal, it is good practice to always assess for acute risk of suicide and manage it accordingly. Once a detailed evaluation of the suicide risk is made, clinicians should progress onto de-escalate the patient, establish a plan of safety, prepare a management plan and hospitalize the patient if necessary.

Setting

Treatment settings and conditions include a continuum of possible levels of care, from an inpatient setting to partial hospitalization and intensive outpatient programmes to occasional ambulatory visits. The choice of specific treatment setting depends not only on the psychiatrist's estimate of the patient's current suicide risk and potential for dangerousness to others, but also on other aspects of the patient's current status. In addition, the benefits of intensive interventions such as hospitalization must be weighed against their possible negative effects (e.g. disruption of employment, financial and other psychosocial stress, social stigma, etc.).

A history of past suicide attempts is one of the most significant risk factors for suicide, even in patients of personality disorders and this risk may be increased by more serious, more frequent or more recent attempts. Thus, it is very important to ask about past suicide attempts and self-destructive behaviours, including specific questioning about aborted suicide attempts.

A review of past history of treatment including the pharmacological and psychological treatments is also important and should include information on comorbid diagnoses, prior hospitalizations, suicidal ideation or previous suicide attempts.

A family history of suicide, mental illness and dysfunction should be obtained as well which must include suicide and suicide attempts as well as a family history of any psychiatric hospitalizations or mental illness, including substance use disorders. Also one should enquire about family organization and structure. The probing

should include a history of family conflict or separation, parental legal trouble, family substance use, domestic violence, and physical and/or sexual abuse.

The current psychosocial adversities or crisis faced by patient can also increase the risk of suicide viz financial or legal stressors, interpersonal conflicts or losses; homelessness; loss of job; failure in exams.

In persons with personality disorders significant contribution is made by hopelessness, aggression and impulsivity, all or none thinking, perfectionism with very high expectations from oneself. It is also helpful to determine the patient's tendency to engage in risk-taking behaviours as well as the patient's past responses to stress, including the capacity for reality testing and the ability to tolerate rejection, subjective loneliness, or psychological pain when his or her unique psychological needs are not met. As part of the suicide assessment it is essential to inquire specifically about the patient's grading of suicidal thoughts, plans, behaviours and intent. Another important part of assessment is the direct enquiry regarding suicidal ideation. Also the assessor should probe about the presence of suicide plan and any steps that have been taken towards enacting those plans. The persons with personality disorder always do not engage in only deliberate self harm but some of the attempts are actually steps taken to end life. A clinician should take into account of this fact and a high degree of sensitivity should be exercised.

The Relevance of Scales in Risk Assessment

A number of suicide assessment scales have been developed by researchers for use in suicidal patients. Self-report rating scales may sometimes assist in opening communication with the patient about particular feelings or experiences. In addition, the content of suicide rating scales, such as the Scale for Suicide Ideation (Beck, Kovacs, & Weissman, 1979) and the Suicide Intent Scale (Beck, Schuyler, & Herman, 1974), may be helpful to psychiatrists in developing a thorough line of questioning about suicide and suicidal behaviours. However, existing suicide assessment scales suffer from high false positive and false negative rates and have very low positive predictive values (Brown, 2002). As a result, such rating scales should not be used as substitutes for a detailed clinical evaluation for clinical estimations of suicide risk.

Management

The management of suicidal behaviour in personality disorders includes pharmacotherapy and psychological treatment in isolation or in combination.

Pharmacotherapy. The initial trials with first-generation antipsychotics were found to be effective in reduction of anger leading to the self injurious behaviours in person with borderline personality disorder. The comparisons of first-generation

antipsychotics (FGAs) with placebo yielded significant effects for haloperidol in the reduction of anger in two randomized controlled trials (Soloff et al., 1989, 1993) and flupentixol decanoate was found to be effective in the reduction of suicidal behaviour (Montgomery et al., 1979). Whereas initial studies favoured first-generation antipsychotics recent authors have focused more on atypical antipsychotics. Olanzapine was found to be significantly superior to placebo on the Clinical Global Impression scale for Borderline personality disorder (Bogenschutz & Nurnberg, 2004). Olanzapine emerged as a safe and effective agent in the treatment of women with borderline personality disorder, significantly affecting all four core areas of borderline psychopathology namely affect, cognition, impulsivity and interpersonal relationships (Zanarini & Frankenburg, 2001). Aripiprazole was found to have both significant effects in the reduction of the core pathological symptoms of borderline personality disorder and anger, psychotic symptoms, impulsivity, interpersonal problems, associated pathology (depression) anxiety and general severity of psychiatric pathology (Nickel et al., 2006). However, the results for suicidal ideation were inconsistent: two study estimates revealed a significantly lower decrease of suicidal ideation with olanzapine compared with placebo (Bogenschutz & Nurnberg, 2004; Lilly, 2007).

Mood stabilizers are also being evaluated for management of overall symptom complex of borderline personality disorder. Supporting evidence has been found with divalproex sodium, lamotrigine and topiramate, but not for carbamazepine (Fuente, 1994). Divalproex sodium has shown significant effects on reduction of interpersonal problems and depressive symptoms (Frankenburg & Zanarini, 2002; Hollander et al., 2001). Lamotrigine has been tested to reduce impulsivity and was found significantly superior to placebo for the reduction of impulsivity and anger (Tritt et al. 2005). Topiramate has been tried and has been found to have significant effects on interpersonal problems, decrease in anger symptoms especially in the female population (Loew et al., 2006; Nickel et al., 2004, 2005). Associated psychopathology was also found to be significantly affected by topiramate (Loew et al., 2006). Antidepressants have long been proposed for use in persons with borderline personality disorder for varying core symptoms. However, a recent meta-analysis suggested selective serotonin reuptake inhibitors (SSRI) should only be used in persons with comorbid depression or other axis one disorder with indication for SSRI use. It also went on to recommend that antidepressants can no longer be considered as first line agents for affective dysregualtion and impulsive aggression in borderline personality disorder (Lieb, Völlm, Rücker, Timmer, & Stoffers, 2010).

Psychotherapy. The main goal for persons dealing with suicidal individuals is to decrease suicidal behaviour by easing the psychalgia and reducing the psychiatric symptoms. The diagnosis of personality disorder has always been associated with psychotherapy as psychotherapy has been the pillar of treatment for personality disorders. Individual psychotherapy has been a mainstay of treatment and these can be long-term and short-term psychotherapy. Regardless of the type of therapy, overall successful treatment has been shown to decrease suicidality in patients with personality disorder especially with Borderline personality (Linehan, 1993; Bateman & Fonagy, 1999). The current evidence-based approaches for treating

suicidal patients include the following four psychosocial interventions: intensive follow-up treatment, cognitive behaviour therapy, interpersonal psychotherapy and dialectic behaviour therapy (Cukrowicz, Smith, & Schlegel, 2010). Intensive follow-up treatment consists of services provided to a patient following emergency room or inpatient psychiatric services for a suicide attempt. Motto and Bostrom (Motto & Bostrom, 2001) hypothesized that professionals' maintenance of long-term contact with persons who are at risk of suicide can exert a suicide-prevention influence. Their systematic programme of contact with persons who were at risk of suicide and who refused to remain in the health care system appeared to have a significant preventive influence on the risk of suicide for at least a period of 2 years.

The principles of cognitive and behavioural therapy have been used to devise various psychological treatment approaches to deal with suicidality. The cognitive behavioural problem-solving interventions identify problems, generate solutions, obtain goal outcomes and allow greater cognitive flexibility. Brown and colleagues (Brown et al., 2005) studies the effectiveness of a ten-session cognitive therapy intervention designed to prevent repeated suicide attempts in adults who have recently attempted suicide. Their randomized controlled trial showed that cognitive therapy resulted in greater reductions in depressive symptoms at 6, 12, 18 months, and hopelessness at 6 months. Guthrie et al. (2001), studied the effects of a brief psychological intervention (brief psychodynamic interpersonal therapy) in 113 patients after deliberate self-poisoning compared with treatment as usual. The study showed that there was a significant reduction in the group receiving psychotherapy at 6 month follow up.

Linehan's (1993) dialectical behavioural therapy offers an interesting model: she recommends a form of behavioural analysis, in which the therapist listens to the emotional content of suicidality, validates dysphoric feelings that tempt the patient to act impulsively, identifies the circumstances leading the patient to experience dysphoria and develops alternative solutions to life problems. This mode of therapy was specially developed for borderline personality disorder and includes both individual therapy in addition to group skill training. A variety of strategies are used during these therapy sessions including validation, balancing acceptance and change, behavioural chain analysis, contingency management, examining cognitions and behavioural exposure (Cukrowicz et al., 2010). Across multiple randomized controlled trials, DBT has been found to significantly reduce self- harm, suicide attempts, and suicide ideation (Linehan et al., 2006, 1999; Verheul et al., 2003). Another type of therapy which has been found useful is Mentalization-based therapy (MBT). MBT (Bateman & Fonagy, 2004, 2006) is a psychodynamic treatment rooted in attachment and cognitive theory. It requires limited training with moderate levels of supervision for implementation by generic mental health professionals. It aims to strengthen patients' capacity to understand their own and others' mental states in attachment contexts in order to address their difficulties with affect, impulse regulation and interpersonal functioning, which act as triggers for

acts of suicide and self-harm (Linehan, 1993). MBT delivered by generic mental health professionals in the context of a partial hospital programme has been found to be cost-effective and superior to treatment as usual over a period of 36 months (Bateman & Fonagy, 2001, 2003, 2008).

Psychotherapy

Conclusions

In summary, this chapter aims to acquaint the reader with the concept of chronic suicidality in the context of various psychiatric disorders especially borderline personality disorder. It then proceeds to differentiate between acute and chronic suicidality and the subsequent assessment and management of such patients. Patients with chronic suicidal behaviour though may appear to be a sub-group of patients appearing to have a sense of therapeutic nihilism; however, all efforts should be made by the health professional to provide them the best of evidence-based practice.

References

American Psychiatric Association. (2003). Practice guideline for the assessment and treatment of patients with suicidal behaviours. *American Journal of Psychiatry, 160*(11 Suppl), 1–60.

Arie, M., Haruvi-Catalan, L., & Apter, A. (2005). Personality and suicidal behaviour in adolescence. *Clinical Neuropsychiatry, 2*(1), 37–47.

Barber, M. E., Marzuk, P. M., Leon, A. C., & Portera, L. (1998). Aborted suicide attempts: A new classification of suicidal behaviour. *The American Journal of Psychiatry, 155*(3), 385–389.

Barraclough, B., & Shepherd, D. (1994). A necessary neologism: The origin and uses of suicide. *Suicide and Life-Threatening Behaviour, 24*(2), 113–126.

Bateman, A., & Fonagy, P. (1999). Effectiveness of partial hospitalization in the treatment of borderline personality disorder: A randomized controlled trial. *American Journal of Psychiatry, 156*(10), 1563–1569.

Bateman, A., & Fonagy, P. (2001). Treatment of borderline personality disorder with psychoanalytically oriented partial hospitalization: An 18-month follow-up. *American Journal of Psychiatry, 158*(1), 36–42.

Bateman, A., & Fonagy, P. (2003). Health service utilization costs for borderline personality disorder patients treated with psychoanalytically oriented partial hospitalization versus general psychiatric care. *American Journal of Psychiatry, 160*(1), 169–171.

Bateman, A., & Fonagy, P. (2004). *Psychotherapy for borderline personality disorder: Mentalisation based treatment*. Oxford: Oxford University Press.

Bateman, A., & Fonagy, P. (2006). *Mentalization based treatment: A practical guide*. Oxford: Oxford University Press.

Bateman, A., & Fonagy, P. (2008). 8-year follow-up of patients treated for borderline personality disorder: Mentalization-based treatment versus treatment as usual. *American Journal of Psychiatry, 165*(5), 631–638.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: The scale for suicide ideation. *Journal of Consulting and Clinical Psychology, 47*(2), 343–352.

Beck, A. T., Schuyler, D., & Herman, I. (1974). Development of suicidal intent scales. In A. T. Beck, H. L. P. Resnik, & D. J. Lettieri (Eds.), *The prediction of suicide* (pp. 45–56). Bowie: Charles Press Publishers, MD.

Black, D. W., & Winokur, G. (1986). Prospective studies of suicide and mortality in psychiatric patients. *Annals of the New York Academy of Sciences, 487*(1), 106–113.

Bodlund, O., Grann, M., Ottosson, H., & Svanborg, C. (1998). Validation of the self-report questionnaire DIP-Q in diagnosing DSM-IV personality disorders: A comparison of three psychiatric samples. *Acta Psychiatrica Scandinavica, 97*(6), 433–439.

Bogenschutz, M. P., & Nurnberg, H. G. (2004). Olanzapine versus placebo in the treatmentof borderline personality disorder. *Journal of Clinical Psychiatry, 65*(1), 104–109.

Brezo, J., Paris, J., & Turecki, G. (2006). Personality traits as correlates of suicidal ideation, suicide attempts, and suicide completions: A systematic review. *Acta Psychiatrica Scandinavica, 113*(3), 180–206.

Brown, G. K. (2002). *A review of suicide assessment measures for intervention research with adults and older adults*. National Institute of Mental Health: Rockville, MD.

Brown, G. K., Have, T. Ten, Henriques, G. R., Xie, S. X., Hollander, J. E., & Beck, A. T. (2005). Cognitive therapy for the prevention of suicide attempts: A randomized controlled trial. *JAMA, 294*(5), 563–570.

Casey, P. R., & Tyrer, P. (1990). Personality disorder and psychiatric illness in general practice. *The British Journal of Psychiatry, 156*(2), 261–265.

Cheng, A. T., Mann, A. H., & Chan, K. A. (1997). Personality disorder and suicide. A case-control study. *The British Journal of Psychiatry, 170*(5), 441–446.

Coid, J., Yang, M., Tyrer, P., Roberts, A., & Ullrich, S. (2006). Prevalence and correlates of personality disorder in Great Britain. *The British Journal of Psychiatry, 188*(5), 423–431.

Cukrowicz, K. C., Smith, P. N., & Schlegel, E. F. (2010). *Managing suicidality. Handbook of clinical psychology competencies*. New York: Springer.

De la Fuente, J., & Lotstra, F. (1994). A trial of carbamazepine in borderline personality disorder. *European Neuropsychopharmacology, 4*(4), 479–486.

Fabrega, H., Jr., Ulrich, R., Pilkonis, P., & Mezzich, J. (1993). Personality disorders diagnosed at intake at a public psychiatric facility. *Psychiatric Services, 44*(2), 159–162.

Feldman, M. D. (1988). The challenge of self-mutilation: A review. *Comprehensive Psychiatry, 29*(3), 252–269.

Ferraz, L., Portella, M. J., Vállez, M., Gutiérrez, F., Martín-Blanco, A., Martín-Santos, R., Subirà, S. (2013). Hostility and childhood sexual abuse as predictors of suicidal behaviour in Borderline Personality Disorder. *Psychiatry Research, 210*(3), 980–985.

Foster, T., Gillespie, K., & McClelland, R. (1997). Mental disorders and suicide in Northern Ireland. *The British Journal of Psychiatry, 170*(5), 447–452.

Frankenburg, F. R., & Zanarini, M. C. (2002). Divalproex sodium treatment of women with borderline personality disorder and bipolar II disorder: A double-blind placebo-controlled pilot study. *The Journal of clinical psychiatry, 63*(5), 442–446.

Gerson, J., & Stanley, B. (2002). Suicidal and self-injurious behaviour in personality disorder: Controversies and treatment directions. *Current Psychiatry Reports, 4*(1), 30–38.

Grant, B. F., Hasin, D. S., Stinson, F. S., Dawson, D. A., Chou, S. P., Ruan, W. J., Pickering, R. P. (2004). Prevalence, correlates, and disability of personality disorders in the United States: Results from the National Epidemiologic Survey on Alcohol and Related Conditions. *The Journal of clinical psychiatry, 65*(7), 948–958.

Gratz, K. L. (2003). Risk factors for and functions of deliberate self-harm: An empirical and conceptual review. *Clinical Psychology: Science and Practice, 10*(2), 192–205.

Grilo, C. M., McGlashan, T. H., & Skodol, A. E. (2000). Stability and course of personality disorders: The need to consider co-morbidities and continuities between axis I psychiatric disorders and axis II personality disorders. *The Psychiatric Quarterly, 71*(4), 291–307.

Gunderson, J. G. (2009). *Borderline personality disorder: A clinical guide*. Washington, DC: American Psychiatric Publishing.

Guthrie, E., Patton, G. C., Kapur, N., Mackway-Jones, K., Chew-Graham, C., Moorey, J., Tomenson, B. (2001). Randomised controlled trial of brief psychological intervention after deliberate self poisoning commentary: Another kind of talk that works? *British Medical Journal, 323*(7305), 135–137.

Harris, E. C., & Barraclough, B. (1997). Suicide as an outcome for mental disorders. A meta-analysis. *The British Journal of Psychiatry, 170*(3), 205–228.

Hendin, H., Maltsberger, J. T., Lipschitz, A., Haas, A. P., & Kyle, J. (2001). Recognizing and responding to a suicide crisis. *Suicide and Life-Threatening Behaviour, 31*(2), 115–128.

Hollander, E., Allen, A., Lopez, R. P., Bienstock, C. A., Grossman, R., Siever, L. J., Stein, D. J. (2001). A preliminary double-blind, placebo-controlled trial of divalproex sodium in borderline personality disorder. *The Journal of clinical psychiatry, 62*(3), 199–203.

Jacobs, D. G., Brewer, M., & Klein-Benheim, M. (1999). Suicide assessment: An overview and recommended protocol. In *The Harvard Medical School guide to suicide assessment and intervention* (pp. 3–39). San Francisco, CA: Jossey-Bass.

Kelly, T. M., Soloff, P. H., Lynch, K. G., Haas, G. L., & Mann, J. J. (2000). Recent life events, social adjustment, and suicide attempts in patients with major depression and borderline personality disorder. *Journal of Personality Disorders, 14*(4), 316–326.

Klonsky, E. D. (2007). The functions of deliberate self-injury: A review of the evidence. *Clinical Psychology Review, 27*(2), 226–239.

Kochman, F. J., Hantouche, E. G., Ferrari, P., Lancrenon, S., Bayart, D., & Akiskal, H. S. (2005). Cyclothymic temperament as a prospective predictor of bipolarity and suicidality in children and adolescents with major depressive disorder. *Journal of Affective Disorders, 85*(1), 181–189.

Kreitman, N., Philip, A. E., Greer, S., & Bagley, C. R. (1969). Parasuicide. *The British Journal of Psychiatry, 115*(523), 746–747.

Kulkarni, R. R., Rao, K. N., & Begum, S. (2013). Comorbidity of psychiatric and personality disorders in first suicide attempters: A case-control study. *Asian Journal of Psychiatry, 6*(5), 410–416.

Laye-Gindhu, A., & Schonert-Reichl, K. A. (2005). Nonsuicidal self-harm among community adolescents: Understanding the "whats" and "whys" of self-harm. *Journal of Youth and Adolescence, 34*(5), 447–457.

Lieb, K., Völlm, B., Rücker, G., Timmer, A., & Stoffers, J. M. (2010). Pharmacotherapy for borderline personality disorder: Cochrane systematic review of randomised trials. *The British Journal of Psychiatry, 196*(1), 4–12.

Lilly, E. (2007). Efficacy and safety of olanzapine in patients with borderline personality disorder: A randomized, flexible-dose, double-blind comparison with placebo (Summary ID 6257. clinical study summary: study F1D-MC-HGKL). *Eli Lilly*, *200*.

Linehan, M. M. (1993). *Cognitive behavioural therapy of borderline personality disorder*. New York, DC: Guilford.

Linehan, M. M., Comtois, K. A., Murray, A. M., Brown, M. Z., Gallop, R. J., Heard, H. L., Lindenboim, N. (2006). Two-year randomized controlled trial and follow-up of dialectical behaviour therapy vs therapy by experts for suicidal behaviours and borderline personality disorder. *Archives of general psychiatry, 63*(7), 757–766.

Linehan, M. M., Schmidt, H., Dimeff, L. A., Craft, J. C., Kanter, J., & Comtois, K. A. (1999). Dialectical behaviour therapy for patients with borderline personality disorder and drug-dependence. *The American journal on addictions, 8*(4), 279–292.

Loew, T. H., Nickel, M. K., Muehlbacher, M., Kaplan, P., Nickel, C., Kettler, C., Bachler, E. (2006). Topiramate treatment for women with borderline personality disorder: A double-blind, placebo-controlled study. *Journal of Clinical Psychopharmacology, 26*(1), 61–66.

McGirr, A., Paris, J., Lesage, A., Renaud, J., & Turecki, G. (2007). Risk factors for suicide completion in borderline personality disorder: A case-control study of cluster B comorbidity and impulsive aggression. *The Journal of Clinical Psychiatry, 68*(5), 721–729.

Montgomery, S. A., Montgomery, D. B., Janyanthi, R. S., Roy, P. H., Shaw, P. J., McAuley, R. (1979). Maintenance therapy in repeat suicidal behaviour: A placebo controlled trial. In *Proceedings of the 10th International Congress of Suicide Prevention and Crisis Intervention* (pp. 227–229). Ottawa, ON: International Association for Suicide Prevention

Motto, J. A., & Bostrom, A. G. (2001). A randomized controlled trial of postcrisis suicide prevention. *Psychiatric services, 52*(6), 828–833.

Nickel, M. K., Muehlbacher, M., Nickel, C., Kettler, C., Francisco Pedrosa Gil, M. D., Bachler, E., Anvar, J. (2006). Aripiprazole in the treatment of patients with borderline personality disorder: A double-blind, placebo-controlled study. *American Journal of Psychiatry, 163*(5), 833–838.

Nickel, M. K., Nickel, C., Kaplan, P., Lahmann, C., Mühlbacher, M., Tritt, K., … Loew, T. H. (2005). Treatment of aggression with topiramate in male borderline patients: A double-blind, placebo-controlled study. *Biological psychiatry, 57*(5), 495–499.

Nickel, M. K., Nickel, C., Mitterlehner, F. O., Tritt, K., Lahmann, C., Leiberich, P. K., … Loew, T. H. (2004). Topiramate treatment of aggression in female borderline personality disorder patients: A double-blind, placebo-controlled study. *Journal of Clinical Psychiatry, 65*(11), 1515–1519.

Oldham, J. M. (2006). Borderline personality disorder and suicidality. *The American Journal of Psychiatry, 163*(1), 20–26.

Oldham, J. M., Skodol, A. E., & Bender, D. S. (2007). *The american psychiatric publishing textbook of personality disorders*. Washington, DC: American Psychiatric Publishing.

Oquendo, M. A., Galfalvy, H., Russo, S., Ellis, S. P., Grunebaum, M. F., Burke, A., Mann, J. J. (2004). Prospective study of clinical predictors of suicidal acts after a major depressive episode in patients with major depressive disorder or bipolar disorder. *The American Journal of Psychiatry, 161*(8), 1433–1441.

Oquendo, M. A., & Mann, J. J. (2000). The biology of impulsivity and suicidality. *The Psychiatric Clinics of North America, 23*(1), 11–25.

Paris, J. (2002). Chronic suicidality among patients with borderline personality disorder. *Psychiatric Services, 53*(6), 738–742.

Pompili, M., Rihmer, Z., Akiskal, H. S., Innamorati, M., Iliceto, P., Akiskal, K. K., Girardi, P. (2008). Temperament and personality dimensions in suicidal and nonsuicidal psychiatric inpatients. *Psychopathology, 41*(5), 313–321.

Rudd, M. D., Berman, A. L., Joiner, T. E., Nock, M. K., Silverman, M. M., Mandrusiak, M., Witte, T. (2006). Warning signs for suicide: Theory, research, and clinical applications. *Suicide and Life-Threatening Behaviour, 36*(3), 255–262.

Sansone, R. A. (2004). Chronic suicidality and borderline personality. *Journal of Personality Disorders, 18*(3), 215–225.

Soloff, P. H., Cornelius, J., George, A., Nathan, S., Perel, J. M., & Ulrich, R. F. (1993). Efficacy of phenelzine and haloperidol in borderline personality disorder. *Archives of General Psychiatry, 50*(5), 377–385.

Soloff, P. H., Fabio, A., Kelly, T. M., Malone, K. M., & Mann, J. J. (2005). High-lethality status in patients with borderline personality disorder. *Journal of Personality Disorders, 19*(4), 386–399.

Soloff, P. H., George, A., Nathan, R. S., Schulz, P. M., Cornelius, J. R., Herring, J., Perel, J. M. (1989). Amitriptyline versus haloperidol in borderlines: Final outcomes and predictors of response. *Journal of Clinical Psychopharmacology, 9*(4), 238–246.

Soloff, P. H., Lynch, K. G., & Kelly, T. M. (2002). Childhood abuse as a risk factor for suicidal behaviour in borderline personality disorder. *Journal of Personality Disorders, 16*(3), 201–214.

Soloff, P. H., Lynch, K. G., Kelly, T. M., Malone, K. M., & Mann, J. J. (2000). Characteristics of suicide attempts of patients with major depressive episode and borderline personality disorder: A comparative study. *The American Journal of Psychiatry, 157*(4), 601–608.

Stengel, E. (1964). *Suicide and attempted suicide*. Oxford, England: Penguin Books.
Torgersen, S., Kringlen, E., & Cramer, V. (2001). The prevalence of personality disorders in a community sample. *Archives of General Psychiatry, 58*(6), 590–596.
Tritt, K., Nickel, C., Lahmann, C., Leiberich, P. K., Rother, W. K., Loew, T. H., Nickel, M. K. (2005). Lamotrigine treatment of aggression in female borderline-patients: A randomized, double-blind, placebo-controlled study. *Journal of Psychopharmacology, 19*(3), 287–291.
Turecki, G., & Brent, D. A. (2015). Suicide and suicidal behaviour. *The Lancet, 387*(10024), 1227–1239.
Verheul, R., van den Bosch, L. M., Koeter, M. W., De Ridder, M. A., Stijnen, T., & Van Den Brink, W. (2003). Dialectical behaviour therapy for women with borderline personality disorder. *The British Journal of Psychiatry, 182*(2), 135–140.
Yen, S., Pagano, M. E., Shea, M. T., Grilo, C. M., Gunderson, J. G., Skodol, A. E., Zanarini, M. C. (2005). Recent life events preceding suicide attempts in a personality disorder sample: Findings from the collaborative longitudinal personality disorders study. *Journal of consulting and clinical psychology, 73*(1), 99–105.
Yen, S., Shea, T., Pagano, M., Sanislow, C. A., Grilo, C. M., McGlashan, T. H., Morey, L. C. (2003). Axis I and axis II disorders as predictors of prospective suicide attempts: Findings from the collaborative longitudinal personality disorders study. *Journal of Abnormal Psychology, 112*(3), 375–381.
Zaheer, J., Links, P. S., & Liu, E. (2008). Assessment and emergency management of suicidality in personality disorders. *The Psychiatric Clinics of North America, 31*(3), 527–543.
Zanarini, M. C., & Frankenburg, F. R. (2001). Olanzapine treatment of female borderline personality disorder patients: A double-blind, placebo-controlled pilot study. *The Journal of clinical psychiatry, 62*(11), 849–854.
Zilber, N., Schufman, N., & Lerner, Y. (1989). Mortality among psychiatric patients-the groups at risk. *Acta Psychiatrica Scandinavica, 79*(3), 248–256.
Zouk, H., Tousignant, M., Seguin, M., Lesage, A., & Turecki, G. (2006). Characterization of impulsivity in suicide completers: Clinical, behavioural and psychosocial dimensions. *Journal of Affective Disorders, 92*(2), 195–204.

Chapter 22
Those Left Behind…: The Process of Bereavement for Suicide Survivors and Postvention

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Introduction

> The person, who completes suicide, dies once… Those left behind, die a thousand deaths, trying to relive those terrible moments and understand… Why..?
>
> (Clark, 2001)

Families are bonds that are built by the virtue of being born into one. Every member is different from the other in several ways, although bound by the blood that runs though their veins. The bond that builds between every member of the family causes interdependence on each other, so there is a careful balance that needs to be maintained to move together. If a single member experiences a downfall, it disrupts the functioning of the entire family. Similar to how when a member of the family completes suicide, the impact of the same reverberates to each and every individual within the family. Since each member shares a different relationship with the person lost, the process of bereavement and the impact of suicide for that individual differs.

'The ones left behind…' have been termed as "survivors" by Shneidman (1971). American in origin, *survivors* refers to family members, relatives, friends and

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significant others who endured the loss of their loved one (Vessier-Batchen & Douglas, 2006). The terminology may be confusing because it may be misunderstood as 'survivors of suicide attempts' as opposed to those who witnessed death by suicide of a significant member. Individuals bereaved by suicide are often neglected because the attention is centered more towards the deceased. Rather, more than the deceased, the interest is drawn towards the reasons and the circumstances that may have led the individual to take such a drastic step. But the emotional turmoil of being the pallbearer to the departed soul is equivalent to an unending agony that never receives closure. Thus, the impact of suicide within the family causes a "ripple effect", the effects of which leave the lives of the ones left behind forever altered.

The Ocean of Emotions

Oftentimes, the feelings associated with losing someone close to you are, sadness, over losing that person and anger, that the person is no longer a part of your life (Baume, 1992). However, losing someone through the act of suicide gives rise to feelings that may seem abnormal at first, but are considered as normal reactions to grief. The existing literature on suicide and emotional reactions has been addressed; however, the impact of suicide on dynamics involved within a family system needs to be readdressed, with emphasis upon the factors that mediate the crises experienced during the process of bereavement (Calhoun, Selby, & Selby, 1982; Hajal, 1977; Raphael, 1983; Richman, 1986). With inconclusive results, the aftermath of suicide bereavement for survivors has not been understood in its entirety, and requires greater analysis through qualitative data.

However, of what is available in the existing literature, studies have indicated that the consequences of death by suicide involve emotions that are unique to this kind of loss (Calhoun et al., 1982). The trauma of losing a loved one affects everybody within the family, surfacing a variety of emotions that many would not like to accept or even feel. The emotional pain and distress of living with profound feelings of guilt, shame, anger, stigmatization, rejection, helplessness, betrayal or insecurities (Calhoun et al., 1982) can be more than just overwhelming. Also, knowing that these are not the only feelings that one may experience may add to the burden of living, leading to self-destructive behaviour. Particularly, the feeling of angst may be difficult to overcome. Suicide survivors are vulnerable to experience "disenfranchised grief" that has been defined as 'grief experienced as a result of a loss that cannot be socially sanctioned and acknowledged or publicly mourned' (Doka, 2002a).

According to Hoff (1989), suicide survivors predominantly experience heightened guilt and anxiety resulting mostly from (a) a sense of responsibility that in some way or the other, the suicide should have been prevented, especially in the case of someone very close to the survivor; (b) a sense of relief that some survivors experience post-loss, especially in circumstances when the relationships were

strained or when the individual made several attempts to complete suicide with no option of seeking help from anyone.

Suicide survivors are inundated by thoughts revolving around making sense of the death, and the decision of the deceased to take such a drastic step towards life. According to Baume (1992), it is common for survivors to "blame or scapegoat" someone for the suicide; emerging from the feelings of hopelessness and guilt about not being able to prevent the 'leap from the edge of the ledge'. Acceptance of the act of suicide then becomes difficult, also because of the values and beliefs that one associates with suicide. Denial of reality functions as a defence mechanism for coping during such a situation.

In 1990, Barrett and Scott proposed four types of reactions of suicide survivors experience, that include: (a) normal grief reactions that result from losing a loved one, including somatic symptoms, hopelessness, anger, guilt, loss of social support and self-destructive Behaviour; (b) additionally, reactions like stigmatization, shame, abandonment, perception of death as being preventable resulting from the experience of a death other than by natural causes, with the potential of being avoidable; (c) grief reactions resulting from shock and emotional turmoil of a sudden loss, regardless of its cause, plagued by the search for an acceptable justification for the decision of ending life in that way; (d) reaction as a result of additional trauma of dealing with the nature of the cause of death-suicide, including feelings of rejection and abandonment by the deceased, embarrassment over the means of death, thoughts pertaining to why the spouse lost hope, anger towards the deceased for leaving them behind, and shame experienced as a result of the mode of death, thereby concealing it by saying something other than what it was.

Guilt, Responsibility and Self-blame. The exacerbated feeling of guilt can be paralyzing for the entire family. As Jordon (2008, p. 681) mentions, the loss of a loved one through the act of suicide 'unleashes a tsunami of guilt and self-reproach' that may make the process of bereavement all the more difficult to bear. The feelings that follow after a suicide, especially in cases of close bonds and ties with the deceased, can leave the survivor feeling devastated, trapped in thoughts of "Why?" and ruminating over how things could have been different, "If only…". Preoccupied in understanding the reasons for engaging in such an act leads them to question their values, their beliefs and the fundamental meanings they attach to their own existence (Jordon, 2008). Studies elucidate that, very often, the survivors tend to overvalue their own roles and responsibilities towards the decision of their loved one to end their life, which aggravates the feeling of guilt for not being able to prevent the act of suicide (Jordon, 2008; Young et al., 2012). Oblivious to the factors that influence the decision of their loved one to commit suicide, they try to recall in retrospect and ruminate upon the last moments, the events that could have been different in some way, and warnings that could have facilitated in preventing the act. These feelings are heightened for parents who lose their child to the act of suicide (Young et al., 2012). Drowned in such feelings, survivors are unable to perceive beyond the factors that could have actually led to the suicide, that is, an underlying, undiagnosed psychiatric condition, as Jordon (2008) mentions is the

situation in 90% of the people who die by the act of suicide. The intensity of these feelings is such that the survivor starts conducting a "personal psychological autopsy" that Jordon (2008) refers to as a hallmark of the process of bereavement after suicide. However, this "psychological autopsy" is said to facilitate the course of making sense of the death of their loved one, and unfurl the understanding of their role in the suicide the impact of which may diverge either directions.

Stigma, Shame and Social Isolation. The very nature of death by suicide draws negative attention of people, thereby making the act a taboo. Post-loss, the lives of suicide survivors are confined because of the stigma associated with suicide. The journey of suicide survivors through the process of bereavement is a lonely one. Studies have reported that suicide survivors experience difficulty in opening up to others about their experience of losing someone close to them, especially because the mode of death was suicide (Young et al., 2012). This discomfort is often complicated by the perceived need to conceal the reason for death, thereby resulting in distancing oneself from social networks. Thus, mourning after loss within the family through suicide can have a deleterious impact upon the lives of the survivors and alter their relationships with their family and friends forever. Likewise, Cerel, Jordan, and Duberstein (2008) proposed types of distortion in communication styles that may occur in families and social networks post-loss. Primarily, the tendency to assume blame for the suicide, the apparent need to hide the reasons for the event of suicide, and the social-ostracism and isolation experienced by survivors are what cause the communicational distortion. The "blame game" may be an overt expression or one that gets communicated through nonverbal cues like socially withdrawing oneself, thereby causing strained relationships and reduced cohesiveness within the family and the social circle (Barlow & Coleman, 2003). Such an impact makes the process of bereavement all the more difficult because of the lack of social support, causing significant distress amongst the members of the family. More so, the development of secrecy around the cause of death among certain family members such as children may emerge as a major source of dysfunction within family systems impacting the psychological development and growth of all members within the family, especially the children (Jordan, Kraus, & Ware, 1993; Walsh & McGoldrick, 1991). Social stigma is another issue with considerable evidence supporting the negative impact it has on suicide survivors. Studies have suggested that the feeling of "shame" can be a difficult experience for the family due to the social and religious norms ascribed to the notion of suicide (Range, 1998; Wagner & Calhoun, 1992). Although, this outright condemnation is a result of the social ambiguity caused by the process of bereavement, this leads to presumptions of being judged or avoided by others, creating awkwardness, social withdrawal among survivors, a process referred to as self-stigmatization (Dunn & Morrish-Vidners, 1987). Collectively, these issues burden and exacerbate the process of mourning, delaying the adaptation to this change.

Anger, Rejection and Perceived Abandonment. The very nature of this mode of death, that is, suicide leaves many questions unanswered, thereby leaving survivors with feelings of rejection, abandonment and anger towards the deceased. The anger stems from the idea that the deceased left them behind to face the world,

especially in the case of spouses where the degree of perceived abandonment and rejection are far greater (Young et al., 2012). Also, it leads to an assumption that it was an easier step to give up than face the cause that drove towards such a drastic measure. As Jordon (2008) mentions that the complexity of suicide lies in its multi-determined causal factors that are challenging to ascertain. This ambiguity towards unravelling the basis for this act, results in a dilemma over whether suicide was a decision, an outcome of life circumstances or was the deceased driven towards it as a result of an underlying mental illness. Rationalization of these ideas led to the emergence of intense feelings of anger towards the deceased, a sense of unworthiness, wilful rejection and abandonment by the deceased, more so when the act of suicide was a voluntary decision (Jordon, 2008). The experience of all these emotions does not appear in linear progression, and are rather difficult to compartmentalize. Midst of intense feelings of anger, the survivor may feel self-blame for not being able to maintain a relationship that could have prevented this act. Also, anger may just not be directed towards the deceased but may be expressed towards self, other family members and significant others (Young et al., 2012). Thus, survivors do not just experience the death of their loved one once, but at the experience of every emotion that they may feel as a result of their loss, forcing them to relive those painful moments over and again.

Is the Phenomenon of Bereavement Different for Suicide Survivors?

The aftermath of a suicide within the family is not bereft the influence that every member has on the others within the family and the way it affects the family as a whole. As would be the case in other types of losses, what sets this type of bereavement from others is the impact it has upon the family. On the grounds of empirical literature based on clinical observation, theoretical speculations and inferring, a comparison between the bereavement processes of suicide survivors with other types of bereavement was drawn (Cain, 1972; Demi, 1984; Flesch, 1977; Saunders, 1981; Sheskin & Wallace, 1967). What emerges as primarily the reason for poor outcomes of mental health for the survivors is social stigma.

The course of bereavement for suicide survivors is rather complex, entailed by an emotional journey. The social stigma ascribed to it, along with the experience of intense emotions like guilt, shame that is more often than not accompanied by other forms of death. As a result of this, the survivor may perceive themselves in a negative light, as by others leading towards social withdrawal and isolation in a circumstance requiring maximum social support. This also increases the vulnerability of other psychological and physical ailments. The loss of a loved one by suicide is a difficult journey that a survivor is forced to embark upon, additionally bearing the burden of emotions like rejection, anger, perceived responsibilities may be overwhelming for them; enough for some to assume suicide being the only resort

to overcome such feelings. Moreover, the survivor is never able to gain closure over the act of suicide, mostly because there is nothing in particular that the survivor can ascribe blame to, or direct their anger towards as would have been in the case of a murder or death due to a medical condition. This leads to an unfinished business that would interfere in the process of bereavement and impede healing. Studies have suggested that suicide bereavement may have a usual form of mourning process, intense enough to elevate the survivor's own risk of suicidal behaviour and completion (Blumenthal, 1990; Cleiren, 1993; Fekete & Schmidtke, 1996; Lester, 1994; Moscicki, 1995; Ness & Pfeffer, 1990; Roy, 1992). Moreover, for some mourners, suicide may be a step towards being close to their loved one (Young et al., 2012). These findings support that certain characteristics of suicide bereavement are qualitatively different from others form of bereavement, thereby may delay the process of healing for the survivors (Jordon, 2001).

Contrary to this, Barrett and Scott (1990) highlight, that the course and quality of recovery from grief of losing a loved one may not be different from the experiences of other types of death. The argument they set forth is that grief may not solely be attributed to either the type of death experienced or the concomitant grief reactions occasioned by the death. The interplay of other factors may significantly influence the process of bereavement and the progress of recovery and healing.

Factors that Influence the Process of Bereavement

Age. The age of the suicide survivor largely determines how they would react to the situation at hand, as well as how they would cope with the situation. However, the likelihood of an overlap between the age and kinship as a factor is high. The two factors may not be perceived as being mutually exclusive; however, the difference between the two emerges when the age at which the loved one completed suicide is brought into consideration as well. For instance, if the person who completed suicide died at a very young age (a teenager's decision to complete suicide) leaving a major emotional impact upon the survivors (parents) also resulting in higher levels of social stigmatization as opposed to an older adult completing the act. However, the impact of suicide within the family is a subjective experience that cannot be generalized across the different age groups. As mentioned earlier, the factors cannot be perceived independently of each other. From the lens of a suicide survivor, especially for a child, the question always remains whether or not the child should be immediately informed about the loss or not. Moreover, this question is also dependent upon the kind of relationship the child shared with the loved one who was lost to suicide. According to Cerel, Fristad, Weller, and Weller (1999) the emotions experienced as a result of the death when compared with children bereaved from other causes of death revealed that children as suicide survivors are vulnerable to higher levels of anxiety, anger and shame; however, no differences with regard to sadness and guilt emerged. For the child to accept the situation and then make sense of it then becomes complex and difficult. More often than not,

the tendency of a child is to internalize these feelings than express them overtly. However, in case of older adults as survivors, the major source of distress is primarily social ostracism. Suicide survivors have reported greater levels of stigmatization, shame, rejection (by the deceased) and other reactions (for instance, feeling as if the deceased is trying to get even with them, hiding the mode of death from others) that delay the process of coping effectively with the situation (Barrett & Scott, 1989). On comparison between children as suicide survivors and older adults, the authors found sense of rejection and the reactions as the only distinguishing elements. No matter what the age may be, the journey of suicide bereavement may definitely not be easy to pave.

Gender. Research suggests that the process of bereavement is may result in higher risk of suicide completion in male suicide survivors (Crosby & Sacks, 2002). It may be speculated, that the reason for the same could be that males have the tendency to act upon their thoughts more often than females and may not be clouded by their emotional baggage. Similarly, it has also been found that the rates of completed suicide are higher among men than women among the middle aged population, and the rates of nonfatal suicidal behaviour are higher among females (Young et al., 2012). However, contrary to these findings, a study by Qin et al. (2000) revealed that completed suicide increases the vulnerability to 2.1 fold for completion of suicide by a survivor with the risk being up to 1.9 fold increase for men and 2.95 for females. With inconclusive findings, it is difficult to come to a consensus about whether male or female suicide survivors are at a greater risk; however, it may be understood with regard to the relationship they shared with their loved one, lost in the act of suicide.

Kinship/Quality of Relationship with Deceased. Akin to the factors mentioned earlier, it would be incorrect to view them bereft family kinship ties that emerges as a major influencing factor. The closeness of every bond that builds between the members of the family differs and disruption in these ties affects the functioning of the entire family. Since each member shares a different relationship, with varied degrees of closeness the way the individual expresses and experiences grief varies. The struggle of family members afflicted with the loss of a loved one through suicide is complicated by the relationship they shared with the one they lost. Every member within the family shares a different tie, a unique bond with another member. From this perspective, the experience of mourning for every family member is then different. However, what remains common across the experience of suicide survivors is the void in the family structure post-loss. For parents who have lost their child to suicide report intense feelings of guilt because they could not take effective measures to prevent the act (Nelson & Frantz, 1996) or fulfil their roles as parents fruitfully (Lam, 2014). The death of a child by suicide may also reflect a 'protest against the family' and questions the nurturance and the support extended by the parents (Ratnarajah & Shofield, 2007). Moreover, the reaction towards the death is intensified because of the disruption in the natural order of death, in which the death of the parents should have preceded the death of their child (Schneider, Grebner, Schnabel, & Georgi, 2011). Thus, the grief experienced by parents is exacerbated by the virtue of their "kinship" and escalated by feelings of

hopelessness and their perceived incapacitation at fulfilling their role as parents. Moreover, these feelings of guilt and anguish are later manifested as being protective towards their surviving child that also facilitates the progress towards recovery (Jaques, 2000).

From the perspective of a child survivor, the loss of a family member could be a difficult phase in their life especially, if the child has to face the loss of a parent at a young age. This also leads to a change within the structure of the family, and may result in the child assuming developmentally inappropriate roles and responsibilities (Jaques, 2000). The interpretation that children draw from the loss of their parent to suicide is that the person, on whom they could always count upon, has abandoned them (Hung & Rabin, 2009; Kuramoto, Brent, & Wilcox, 2009). If the child is able to resolve these feelings, the course of healthy development continues. However, in case of parents with alcohol-use disorder, who complete suicide, the feelings of guilt and abandonment are less likely (Tall, Kolves, Sisask, & Varnik, 2008). For siblings as suicide survivors, the findings suggest that they feel alone in their process of bereavement because their parents are emotionally occupied and besieged by the loss of their child, thereby resulting in the sibling assuming parental roles and responsibilities (Dyregrov & Dyregrov, 2005). The needs of such individuals are therefore never met as a consequence of the circumstances, and may need to be fulfilled by resources outside the family and therefore the term "forgotten bereaved" has been coined by Dyregrov and Dyregrov (2005, p. 714). The unanticipated nature of suicide is what affects the individuals left behind, the most. For suicide bereaved spouses, the experience of being left behind by the person with whom they shared an intimate relationship can be devastating and may feel like the 'ultimate form of rejection' (de Groot, de Keijser, & Neeleman, 2006). According to a comparison of experiences of family members of losing their loved one to suicide and other forms of death, it was found that the course of recovery was similar, characterized by approximately three to four year post-loss quality of recovery (Barrett & Scott, 1990). Regardless, the grief experience for suicide survivors involved an initial phase of intense psychological distress as can be attributed to the unanticipated nature of suicide.

Response of Other Members. Any disruption in the family system is an obvious change that reverberates to every member within the family. Since individual members assume a particular role and certain responsibilities, the occurrence of suicide can dramatically impact the survivors. Moreover, the way these overwhelming emotions are dealt, determines the communication patterns within and outside the family. Moreover, the interdependence of family members upon each other largely impacts the response style of others in the family as well. Similarly, the internalization of stigma and shame by the survivors may affect their interaction patterns, the way they receive help from others both within and outside the family (Séguin, Lesage, & Kiely, 1995). Also, with reference to the context of self-blame, the survivors may socially isolate themselves and withdraw from their immediate family and not regard them as being supportive (Ratnarajah & Schofield, 2007; Séguin et al., 1995), thereby, restricting interactions that they were otherwise accustomed with.

Suicide Survivors' Bereavement Process—A Model

As mentioned earlier, the mourning process for survivors of suicide is qualitatively different from the experience of losing a loved one to any other mode of death. Rather there is interplay of several factors that influence the process of bereavement for suicide survivors and eventually determine the outcome, impact and its course. Based on the findings of the existing literature on the process of bereavement, exclusively for suicide survivors, the following model has been proposed (Fig. 22.1). The progression of this model may *not* be linear and allows back-and-forth from one phase to another, dependent upon the interplay of several factors.

The loss of a loved one through the act of suicide can have a lasting impact upon its survivors; however, the aftermath of this loss cannot be perceived bereft the factors that influence it (e.g.: age, gender, kinship, quality of relationship with deceased, response of other family members, etc.). In other words, the bereavement process is determined by these factors that may decide the outcome and the course of recovery for the survivors.

Coping with the loss of a loved one can be a difficult phase for someone to go through alone, grief post-loss is effectively dealt when the family functions as a whole, openly shares their feelings, are considerate, sensitive and responsive to the needs of the ones left behind (Callahan, 2000; Nelson & Frantz, 1996; Traylor, Hayslip, Kaminski, & York, 2003). However, every family is different and the ways in which adaptive coping takes place, tends to vary. Primarily, the reaction of the family members and the changes within the family structure post-loss is based on the *needs* and the *response style* of the survivors. More often than not, the alterations that occur within the family system include changes in *role assumption and responsibilities*. For instance, for an elder sibling, it may mean to shoulder responsibilities of caring for the younger sibling(s). Although these responsibilities may be developmentally inappropriate, and may place unreasonable demands upon the child; however, under the given circumstances, the child may not be able to refuse.

In light of the changes in the family dynamics, Cerel et al. (2008) suggests that the family context is of utmost importance because the members within the family may influence each other through their reactions and responses, consequently setting the tone for communication within the whole system. For example, Hoffmann and colleagues mention that individuals try and avoid interactions with people with whom they share a close bond, and would not want to disclose reasons for the death of their loved one through suicide. From this viewpoint, researchers interpret that suicide survivors may hesitate about discussing matters revolving around suicide. Moreover, they may avoid interactions pertaining to the cause of death in particular because they assume the stigma attached to the understanding of suicide (Cvinar, 2005). Subsequently, this results in feeling socially isolated and withdrawn from others, difficulty in relating to others for the fear of having to discuss the life changing incident. In this vein, researchers have elucidated upon the familial

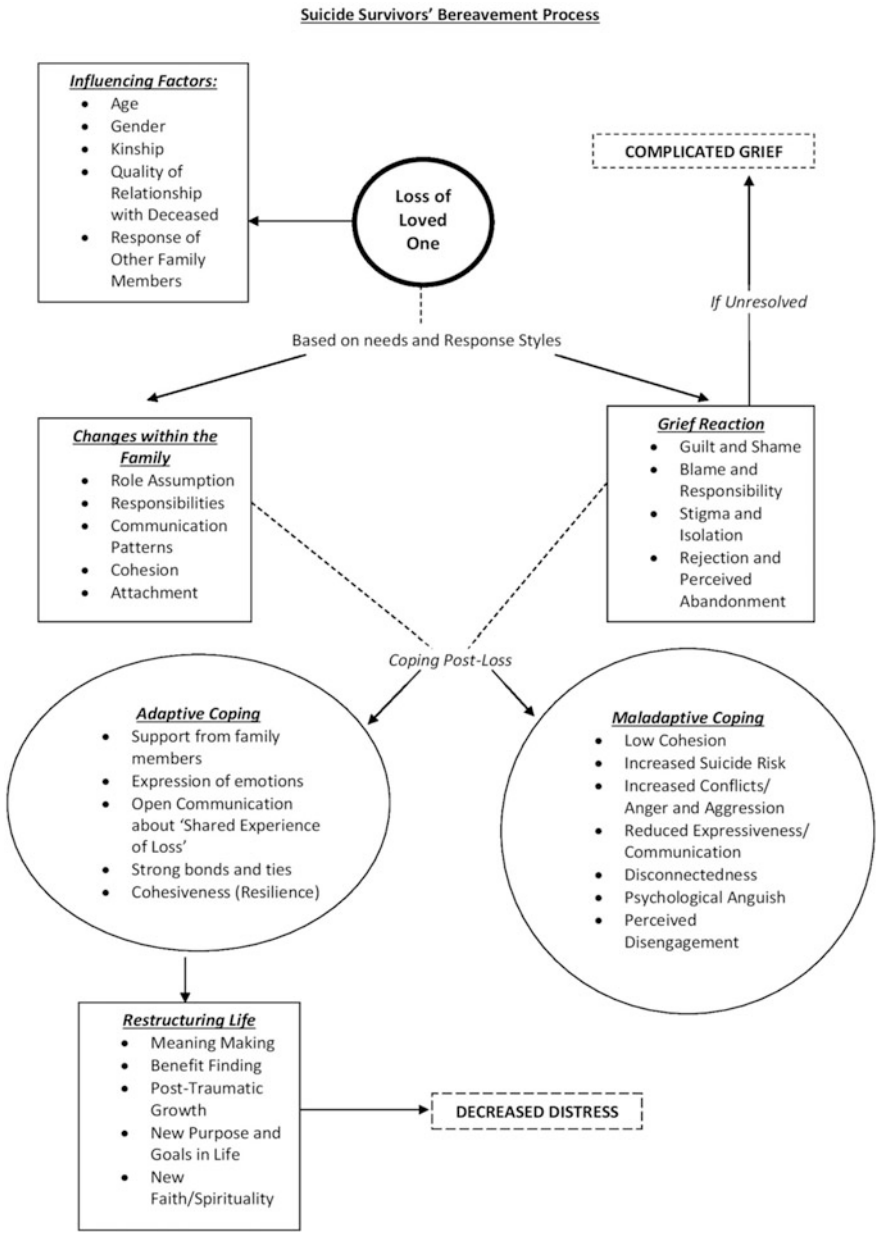

Fig. 22.1 Suicide survivors "bereavement process". *Source* Proposed by Authors

interaction and communication patterns post-loss, and the impact it creates on sharing the grief over the loss of their loved one, together as a unit (McMenamy, Jordan, & Mitchell, 2008).

Family cohesion and attachment is the fundamental pathway towards coping effectively. The emotional bonding that the members share with each other can help in creating a supportive environment that can help in cushioning the immediate shock. The 'shared experience of the loss within the family' can initiate open expression of emotions on a continuum of positive as well as negative emotions and help in restoring equilibrium post-loss. Cohesiveness is a strong predictor of resiliency within families (Kissane et al., 1996a).

As mentioned earlier, to a large extent the grief or bereavement reactions exhibited by the family is determined by the changes that take place within the family. The degree to which the survivor experiences a certain emotion (e.g.: guilt, shame, stigma, blame, responsibility, social isolation, rejection, anger, perceived abandonment, etc.) is dependent upon the presence of supportive others who can act as "shock absorbers" in dire circumstances like losing a loved one to suicide. Grief is a 'universal, instinctive and adaptive reaction' to the loss of a loved one (Young et al., 2012). Nevertheless, the loss of a loved one may have a devastating effect upon the survivor, negatively altering their life. Circumstances that would lead to maladaptive coping include instances where the family environment is unsupportive, interaction styles and transmission of communication are indirect, increased conflicts among family members, reduced expressiveness, emotional detachment and disconnectedness towards members, anger towards and scapegoating family members, etc. Research suggests that the experience of less cohesion is a strong predictor of poor adjustment to change, with an elevated risk of suicidal behaviour amongst survivors (Compton, Thompson, & Kaslow, 2005). Moreover, when grief as a reaction is prolonged, unresolved or is traumatic in nature, it may cause "*complicated grief*" (CG) as a result of maladaptive coping or even otherwise. This grief remains persistent and intense, interfering with and impairing the routine functioning of the bereaved. The wounds of loss remain fresh, forbidding the occurrence of the process of healing. The symptomatology of complicated grief is so intense, that it may push the survivor towards suicidal behaviours and thoughts. In the light of such circumstances, the only outlet left for the bereaved to vent out the pain of losing their loved one, is through their own death (Young et al., 2012).

A positive adaptation and adjustment to such a profound experience involves the interaction of certain individual as well as environmental factors that determine the course of recovery during the given circumstance. In this regard, adaptive coping is fostered by the support of family members and significant others who help in facing the immediate shock of losing a loved one to suicide, as well as extend their comfort in making the process of mourning endurable. Research suggests that survivors are able to handle the shock of the death of their loved one, much better when enveloped by the support and care of people with whom they are well familiarized with (Lindqvist, Johansson, & Karlsson, 2008). Open communication about the loss has been emphasized as a one of the important aspects to maintain healthy functioning of the family (Dyregrov & Dyregrov, 2005) as well as family cohesion to help families cope with loss of their loved one (Lam, 2014). However, the improvement in communication patterns and the strengthening of familial bonds require active involvement of the entire family as a whole to achieve positive

adaptation and adjustment to loss (Nelson & Frantz, 1996). Also, there is evidence suggesting that some surviving families experience tightening of relationships post-loss which furthers overt expression of emotions in a shared fashion thereby nurturing the closeness between the survivors (Clark & Goldney, 1995; Dyregrov & Dyregrov, 2005; Nelson & Frantz, 1996).

Adaptive coping to loss advances the process of restructuring life for suicide survivors. In particular, research has revealed that post-loss, their life was restructured towards attainment of goals that were left incomplete by their deceased loved one, eventually shaping their life's meaning and purpose (Clark & Goldney, 1995). Life after a traumatic event leads to a newer perspective towards understanding and interpreting life events and attaching meaning to them. The concept of post traumatic growth (PTG) or benefit finding, referring to growth following adversity may empower the survivor, imparting a fresh perspective towards life and promoting higher levels of functioning. In light of adaptive and healthy forms of coping, like cohesiveness and expressiveness (Kissane et al., 1996a, b) that are restorative to bereaving families, a greater understanding towards supportive intervention during this phase is yet to be explored at length. Thus, the following section will address the existing strategies, measures and interventions adopted towards management and promotion of healthy coping within bereaving families and highlight newer approaches to prevent and manage suicidal behaviour among survivors.

Reaching Out: Postvention

> Suicide does not end the pain. It just passes it on to someone else.
>
> —Anonymous

Suicide as a pragmatic reality is not yet a part of our conventional thought form or consciousness due to which we feel challenged by the hurtful terms that are used to describe this act such as "committed suicide" or "killed self". At the same time, as a community we struggle to address the needs of those individuals whose lives are permanently altered as a consequence of losing their loved ones through suicide. It becomes imperative to understand that the grief experienced by the survivors of suicide is marred by anguish, for a loss that cannot be "openly acknowledged" or is "socially sanctioned" (Doka, 2002b). The process of bereavement for suicide survivors is complicated due to the presence of various factors such as the social stigma attributed to it and guilt and shame that the survivors experience at their inability to 'be there for the loved one'. Existence of these factors leads the survivors to be viewed in a negative light by others as well as it develops a decidedly negative view about themselves. Consequently, they tend to withdraw into their shell, isolating them at a time when they most require the support of others. Research conducted in this area revealed that social isolation was associated with poorer health

(Davis & Hinger, 2005). This called for an approach that acted as a shield for the survivors preventing them from succumbing into the depths of despair and isolation.

The term postvention was coined by Shneidman (1971), to describe the support offered to survivors of suicide and it referred to those things that were done post the dreadful incident has occurred in order to deal with the distressing after effects of the event (Leenaars & Wenckstern, 1998). According to Leenaars and Wenckstern (1998), '*there is almost no other death in our society for which there is a higher social (and often personal dynamic) stigma for the survivors*'. In the process of coming to terms with what has occurred, the survivor is required to deal with two traumatic events simultaneously, first being the death of the loved one and the other being the question that why did the loved one go through the act?. The pain that the survivor goes through is different since the survivor has nothing to direct or blame his anger onto but the act of suicide itself. These unresolved issues often interfere in the mourning process and hamper the healing process. The path towards healing after such an event comes only with the acceptance that the survivor might never know what caused the individual to go through the act (Fine, 1997). Fine (1997), therefore emphasizes on the need to extend care and help to the bereaved family during the period of mourning because they are not the perpetrators of the act of suicide but are the victims of the same and need to be acknowledged and supported as such. Postvention therefore becomes important in facilitating this healing process and helping the survivors lead a healthy and fulfilling life.

An important element while discussing suicide postvention is the culture that the individual is situated in. It is the culture of the individual that determines the attitude of the society towards suicide. While some cultures view the act of suicide favourably under certain circumstances, others find the act of ending one's life abhorrent (Ramsay, Tanney, Tierney, & Lang, 1996). In a collectivistic culture like that prevails in India, suicide is considered to be taboo, and bears the baggage of social stigma. This section of the chapter attempts to situate postvention in the Indian context, as to the best of the author's knowledge this area still remains largely untouched in the Indian scenario. The need of the hour thus is to recognize that suicide survivors are less likely to seek out support due to the social stigma attached to the act, which may hamper their journey towards acceptance of the event. It then becomes necessary for the community of mental health professionals to come together and reach out to the families in need in order to provide the required support to deal with the repercussions of the loss. Some of the ways through which this assistance can be extended to the family members will be discussed below.

Letting Go…

The fundamental benefit of the postvention services is to ease the psychache, i.e. the intolerable psychological pain that the survivor goes through (Shneidman, 1996). A collateral benefit of these services is also to induce a feeling of belongingness

among a group of survivors. It is this feeling of belongingness that provides the impetus for moving towards the path of acceptance and healing. Existing literature on the suicide survivor support group reflects the effectives of these groups in enabling the person to move ahead (Farberow, 1992; Rogers, Sheldon, Barwick, Letofsky, & Lancee, 1982). Research further suggests that suicide survivors find the postvention endeavours effective as these provide them a safe forum to vent out their pain and negative emotions that have accumulated over time through interaction with the society (Jackson, 2003; Myers & Fine, 2006). A study by Joiner (2005), also proposed that the sense of belongingness acts as a protective factor for the survivors and provides a sense of normalcy to the otherwise chaotic life situation.

Ordinarily, the strategies to form a link between the suicide survivors and postvention services take one or the other form: traditional model and the active model. The traditional model believes in giving the survivor space and time to come to terms with the reality of the event and then get in touch with the practitioners with an estimated average of four and a half years for survivors to find services (Campbell & Cataldie, 2003; Campbell, Cataldie, McIntosh, & Millet, 2004). The active model, which is not frequently followed, involves practitioners actively reaching out to the bereaved family in order to psycho-educate them about what they will experience and whom they can approach for help. This active model results in an estimated 1 month between contact and the survivor receiving services (Campbell & Cataldie, 2003; Campbell et al., 2004). To guide these postvention services, Shneidman (1975), delineated principles of suicide postvention: '(a) in working with survivor victims of abrasive death, it is best to begin as soon as possible after the tragedy, within the first 72 hours if that can be managed; (b) remarkably little resistance is met from the survivors; most are either willing or eager to have the opportunity to talk to a professionally oriented person; (c) negative emotions about the decedent or about the death itself—irritation, anger, envy, shame, guilt, and so on—need to be explored, but not at the very beginning; (d) the postvener should play the important role of reality tester. He is not so much the echo of conscience as the quiet voice of reason; (e) medical evaluation of the survivors is crucial. One should be constantly alert for possible decline in physical health and in overall mental well-being; (f) *pollyannaish* optimism or banal platitudes should be avoided; (g) grief work takes a while—from several months (about a year) to the end of the life, but certainly more than 3 months or six sessions; (h) a comprehensive programme of health care on the part of a benign and enlightened community (or a first-rate hospital) should include preventive, interventive and postventive elements'. These guidelines when taken into consideration render the traditional approach to postvention futile. Therefore, it becomes mandatory to follow an approach that combines the basis of both the models in dealing effectively with the needs of the survivors.

Learning to Start Over

Postvention services can take different forms given the need of the survivors. This segment attempts to enlist the various practices that can be effective in helping the survivors in coping with their loss and gaining closure.

Psychoeducation. Nothing can equip the individual to deal with the news that a person that he/she loves or cares about has taken his/her life. The emotions that the individual experiences that very moment can range from shock, disbelief, anger and fear. Reaching out to the bereaved individual in such a situation becomes important to ensure that the person does not feel lost in the sea of responsibilities that he/she might have to deliver. Psychoeducation enables in answering questions of the survivors, offering comfort in the moment it is most needed and helping them understand their reactions. Psychoeducating the survivor about the event helps them to reflect on the situation and in turn addresses the psychological needs of the person. It acts as insulation from stigma and helps in reducing emotional vulnerability (Campbell et al., 2004).

Individual Grief Therapy. The most common form of postvention for suicide survivors is individual grief therapy. Significant number of survivors tend to seek consultation at some point in their road to healing (Dyregrov, Plyhn, Dieserud, & Oatley, 2012; McMenamy, Jordan, & Mitchell, 2008). The therapist while dealing with the survivors should try and understand where the person is situated on the grief cycle, understanding the position of the survivor will enable the therapist to be more effective. The purpose of the therapy should be to provide the survivor with effective coping strategies and facilitate him/her to move towards acceptance of the life event. This can be done when the therapist is cognizant about two important processes during the session, i.e. acknowledgement of the pain that the survivor is going through and an eye towards the possibilities that will help the survivor cope with the loss and move towards fulfilling their life goals. A review of literature reveals clinical descriptions of treatment of individual survivors (Pearlman, Christine, Rando, & Wortman, in press); however, the most recent and comprehensive treatment approach was the one proposed by Jordan (2011). He identified a number of 'tasks of healing' that can be used as the agenda for individual grief therapy. The identified tasks include the following:

Containment of the trauma. The news that one has lost a loved one through suicide often produces symptoms akin to post traumatic stress disorder (PTSD), physiological arousal, "flashbacks", disruption of biorhythms, irritability, emotional numbing, etc. that can infringe upon the person's mind and as a result prove to be distressing. These symptoms when addressed early on in the therapeutic process enables the survivor to respond well to the grief work (Pearlman et al., in press).

Learning skills for dosing grief, finding sanctuary and cultivating psychic analgesia. Bereavement after suicide involves intense psychache, and one of the major tasks for the therapist then is to make this pain tolerable for the survivor, break it down so that it can be absorbed and managed. This would entail empowering the survivor by helping him/her develop self-soothing skills such as

meditation and positive messages and distraction and avoidance skills. These skills when used alternatively with exposure activities help the survivor in confronting the loss. The efficiency of the process of moving towards and away from the loss is also implicated in the dual-process model of grieving proposed by Stroebe (Stroebe & Schut, 1999).

Creation of a complex, realistic, and compassionate narrative of the suicide through a personal psychological autopsy. Multiple factors converge for a person to finally take that step towards ending his/her own life. Survivors of suicide; however, are left wondering 'what was it that triggered the action?' and often fail to realize that various factors would have been at play. They tend to feel that the incident could and should have been prevented, if they would have done things differently. Overtime, the survivors feel the need to conduct a psychological autopsy of the event to understand the factors that could have contributed. At the same time, the therapist needs to inculcate the skill of "holding" in the survivor, so that he/she is able to understand the various perspective and process the event. This holding capacity helps in answering the "why" question and easing the pain of the survivor, accepting the reality and forgiving self (Sands, Jordan, & Neimeyer, 2011).

Learning skills to manage changed social connections. The incidence of suicide in a family generally disrupts the social bond between the family as well as that of the survivors and the society. Survivors may be subjected to the anger, rejection, blaming and avoidance within the family as well as from the community (Range, 1998). This social isolation can lead to a feeling of abandonment increasing the emotional vulnerability of the survivor. Managing these changed social relationships then becomes an important skill set that the therapist and survivor together work at building so as to enable the survivor to navigate the complicated maze of changed relationship.

Repair and transformation of the bond with the deceased. Suicide leads to the rupturing of the bond between the survivor and the deceased. It may also lead to a feeling of abandonment and betrayal by the loved one. For complete healing of the emotional world of the survivor to take place, it is necessary that the survivor learns to initiate the process of psychological healing between self and the loved one. A skilled therapist can help the survivor develop the skills that makes the process possible (Jordan, 2012; Neimeyer, 2012).

Memorialization of the deceased. A significant task for the survivor is to learn to remember and honour the life of the deceased as a whole, while putting the nature of the death in context of the life lived. It is in this process of letting go, that the survivor requires the support of the therapist for reviewing and valuing the life of the loved one.

Restoration of functioning and reinvestment in life. The survivors require encouragement and support to "relearn" the ways of their life, which undergoes a drastic change (Attig, 2011).This relearning involves learning to find meaning in life, setting new goals for themselves and redefining their purpose in life. This step helps the survivor to move on with his/her life leading a more fulfilling life.

A trained grief therapist can prove to be instrumental in bringing about these changes in the survivor helping them to cope with their loss in a healthy manner and providing them with the support to move ahead in their lives.

Family Intervention. A suicide in the family, may act as a catalyst for bringing up the past hurts and wounds that can change the family dynamics. Family members deal with and process suicide in a different manner. Some would want to believe it to be an accident; others would want to deny the existence of the harsh reality. These varied views that the members hold could lead to a dissonance and act as a roadblock to the recovery of the individual members in the family (Fine, 1997). In a study by McNiel, Hatcher, and Reubin (1988), comparing 13 widows who lost their husbands to suicide with 13 widows whose husbands died in accidents, they found differences in family communication styles, the amount of support extended and intimacy shared with family members. Women whose husbands had committed suicide reported experiencing more guilt and blaming in the family. Bereavement counselling involving the whole family facilitates the progression towards healing. Given the damaging implications that suicide in a family has for family dynamics and development, this form of intervention becomes an essential aspect of postvention (Jordan, 2001). As a part of the intervention, it is important to educate the family members of the different types of emotions that might surface and how individuals differ in coping with and expressing their grief. During this intervention, members are encouraged to reflect and renegotiate their roles and expectations to fill the void created by the going away of the loved one (Wilson & Clark, 2005). Family work like this helps the family to function as a unit.

Support Groups. Survivors often seek help in the form of support groups, especially those who do not have access to adequate support within the family and from the society due the change in the family dynamics and the stigma attached to the nature of the death of the loved one. For many survivors, support groups act as a platform that provides them with access to people who they think can understand and respect their feelings and provide them with an opportunity to vent out their distress. Groups also present the availability of successful role models (Garvin, 1997). Being able to connect with individuals who have suffered similar losses as them, provides them with the reassurance that they are not alone, and that others who have survived the loss have come out of it not only intact but also stronger. Through shared experiences, individuals might receive helpful suggestion about taking care of themselves, of the issues that arise after the death, and about coping with the feelings of abandonment and despair and fill the void that has been left behind (Young et al., 2012). Support groups vary in terms of their structure and leadership, some of them are led by peers while others are facilitated by professionals, some may be affiliated with a hospital or an agency, while others may be freestanding community support groups. Groups also vary in terms of the time period they operate for, some are in existence for a fixed time (10–12 sessions), while others are open-ended in nature and meet for an indefinite period of time (Jordan, 2004). Common elements of successful support groups entail psychoeducating the members and providing them accurate information, giving them the permission to grieve by generating the feeling of unconditional acceptance,

normalization of affect and behaviour that may be different from the person's usual behaviour and ensuring that the survivor does not feel alone in the bereavement process (Young et al., 2012). Support groups for suicide survivors; however, are not a common occurrence in India, probably due to the stigma attached to suicide. Suicide still remains an issue that is not discussed openly in Indian societies, leaving it to be discussed behind closed doors in hushed voices so as to maintain the respect and standing of the family. Moreover, it is perceived to be an offence in the eyes of law. The need then is to create awareness and sensitize the community about the plight and trauma that the survivors go through so that they are able to extend the support to the members in their hour of need. The hallmark of a collectivistic culture is the support and cohesiveness the society shares, which can be drawn upon when dealing with issues like suicide. Instead of a professionally facilitated support group, where the survivors might feel exposed, a community outreach system for support can be garnered. Sensitizing and educating the community about the issues related to suicide, the factors that can contribute and the bereavement after the event that help the community reach out to the families in a timely fashion thus bringing about a feeling of affiliation which acts as a protective factor in the bereavement process by helping overcome social isolation. According to Katz and Bender (1976), people helping each other through exchange of support and resources is the backbone of a society. Gitterman and Shulman (2005), proposed that when people believe that they are not alone in trying times, a powerful healing force is released that helps them to process the event and move on.

Spiritual Counselling. Spirituality has been referred to as 'the forgotten dimension' of mental health (Swinton, 2003). It has been defined as 'being where the deeply personal meets the universal', a realm of experience which is pure (Culliford, 2002). The knowledge and practice of spirituality can be influential in promoting the well-being of the person. Spirituality has been cited as an integral element of an individual's healing process. Healing at a spiritual level fosters optimism, meaning and purpose of life (Waldfogel, 1997). Being spiritually aware helps an individual to get in touch with the inner reservoir of powers that the soul possesses power of thinking, feeling, deciding and acting to shape one's life (Hussain, 2011). Counsellors can bring into play the spiritual beliefs of the clients to help them explore and resolve their issues effectively. The goal of spiritual counselling then is the recuperation of the survivor's distress and enabling him to adapt and cope with trauma of loss. It aims at helping the survivor to learn to bank on his inner strengths to deal with his/her problems and survive the loss. Some of the forms of healing in spirituality include enabling the survivor to be forgiving and focus on self healing. *Forgiveness* in spirituality is seen as a divine virtue and is considered to be good for the health of the self and others as it absolves the individual from the extra emotional baggage that he/she might knowingly or unknowingly carry. An individual learns to forgive only when he/she becomes aware of the intensity and the reasons of the anger that are holding the individual captive. When this process of reflection takes place the person is also able to empathise with the person who has caused the hurt. Boorstein (1996) proposed that forgiveness involves self-forgiveness and makes the individual more considerate

towards others. Forgiveness plays an important role in the survivor's road to recovery, for when he/she is able to completely let go of the hurt and forgive self, will only the person be able to move on.

Self healing occurs when an individual is able to establish a strong connection with soul. With the help of the spiritual counsellor, the individual become aware of his core beliefs, beliefs that tend to limit the person's growth. When the individual successfully connects with the soul, he/she begin the process of healing at a mental level and then subsequently begin to open self to healthy ideas and greater understanding of how things function and unfold. Emotional healing also takes place as a result of opening self to various experiences and accepting the range of feelings (Gawain, 2011). Self healing requires a consistent effort towards self awareness and understanding and a spiritual counsellor can help facilitate this process by supporting the person on the path of self discovery.

Building Self compassion. Compassion has been defined as the profound awareness of the suffering by oneself, with the desire to assuage it. Self compassion simply defined is the compassion guided inwards. Self compassion consists of three components: kindness, sense of humanity and mindfulness. These three components when interact with each other result in creating a compassionate framework through which the individual perceives the world. Such a framework is essential when considering mistakes, personal short comings and failures; it also proves to be helpful in dealing with situations and losses that are out of the individual's control (Neff, 2003). Self kindness entails being kind and empathetic towards ourselves instead of burdening ourselves with criticism, when the individual fails or find self inadequate. With self kindness the individual is able to comfort and nurture self when faced with situations that are out of control rather than getting angry when life does not seem to shape the way he/she wants to. Sense of humanity entails recognizing that human beings are imperfect and everyone goes through their personal agony. The imperfections and failures are understood as a part of human experience and considering the struggles of others as well gives the individual a sense of connection and affiliation with others thus reducing the feeling of isolation (Germer & Neff, 2013). Mindfulness is the process of acknowledging the painful experiences without suppression. It enables the individual to be rooted and not be swayed by the negative thoughts and feelings, as they tend to narrow the focus of the individual and creates an overly negative self concept. Being mindful helps the individual to have a balanced view of the situation and allows for greater clarity (Frederickson, 2003; Nolen-Hoeksema, 1991). A study by Leary, Tate, Adams, Allen, and Hancock (2007), revealed that self compassions also facilitated in building resilience. Individuals who were higher on self compassion manifested less extreme reactions, less negative emotions, more self accepting thoughts and were better able to put the problematic situation in perspective. Therapist can facilitate the process of developing self-compassion in suicide survivors which could lead to a better adjustment and coping to the changed life situations. Programmes such as mindful self-compassion (Neff & Germer, 2013) that undertakes a variety of techniques such as loving–kindness, affectionate breathing, soothing touch,

self compassionate letter writing, etc. can be initiated by a trained therapist with the suicide survivors.

Working with Child Survivors. Surviving a suicide might affect the child on various levels such as mental health, physical health and emotional well-being as well at a functional level (Cerel, Jordan, & Duberstein, 2008). Suicide bereaved children tend to be withdrawn, aggressive and anxious after the death of the loved one (Shepherd & Barraclough, 1976). Internalizing behaviours (Cerel, Fristad, Weller, & Weller, 1999), difficulty in adjusting in the school as well as academic difficulties (Pfeffer et al., 1997) have also been reported in the past. These issues arise due to the inability of children to voice their grief. They are unable to verbalize their feelings and therefore often times their emotional world remains unexplored. A therapist working with a child survivor then should rely on measures that help the child move out of his/her grief in an unobtrusive and undemanding manner. Play therapy is one such therapeutic process that enables the child to gain control of situations through symbolic representation which in reality are unmanageable. Being able to express emotions through play serves as a healing experience for the children (Ginott, 1961). Play provides the child with a platform to express symbolically what he/she is unable to put in words and communicate those in a non-threatening manner. Since play helps children communicate better, therapeutic play sessions allow the therapist to offer insights to the child and explore the emotional world of the child. In the past, play therapy has been successfully employed to counter issues of social withdrawal, internalizing and externalizing behaviours, anxiety and depression (Bratton, Ray, Edwards, & Landreth, 2009). Using this form of therapy would facilitate in establishing rapport with the child and helping him to progress on the grief cycle moving towards acceptance of the reality which otherwise seemed to be a daunting task.

Thus, the growing instances of suicide calls for our attention towards the inability of the community to extend the support that the individual needs in order to overcome the difficulties that push him/her towards taking the drastic step. Also, calls out mental health professionals to address the silent plea of the survivors of suicide. Postvention practices then become an important part of dealing with the aftermath of suicide as the pain that grips the survivors, if not addressed on time can prove to be fatal.

Conclusion

The phenomenon of suicide does not discriminate between cultures, race, social status and gender; it is all pervasive. As mental health professionals deal with the looming threat of increased suicidal risk, survivorship has been a relatively neglected area of study. The event of suicide can have a devastating effect on *those left behind*. Not only the survivors have to adapt to, cope with the loss of the loved one, but simultaneously deal with the stigma attached to suicide. In the plethora of emotions that the loss brings about, the survivor tries desperately to situate oneself,

to understand and reflect on what their life will be from here on. If unsupported the survivor is at the risk of drowning in the overwhelming emotions and succumbing to suicidal ideation, depression and PTSD. Not all individuals exposed to the aftermath of suicide are vulnerable to emotional instability and withdrawal. However, evidence suggests that suicide can be one of the most catastrophic losses and therefore the survivors require vigilance and outreach programmes to help the process of coping and readjustment. Postvention thus provides a pathway to recovery through combinations of practices that mental health professionals extend towards survivor to accept this unchanging, devastating reality as it exists and give life a new meaning.

References

Attig, T. (2011). *How we grieve: Relearning the world* (Revised ed.). New York: Oxford University Press.

Barlow, C. A., & Coleman, H. (2003). The healing alliance: How families use social support after a suicide. *OMEGA—Journal of Death and Dying, 47*(3), 187–201.

Barrett, T. W., & Scott, T. B. (1989). Development of the grief experience questionnaire. *Suicide and Life-Threatening Behaviour, 19*(2), 201–215.

Barrett, T., & Scott, T. (1990). Suicide bereavement and recovery patterns compared with non-suicide bereavement patterns. *Suicide and Life-Threatening Behaviour, 20*(1), 1–15.

Baume, P. (1992). Suicide: A crisis for the whole family; should suicide survivors be managed differently? In *Preventing youth suicide: Proceedings of a AIC conference held 24–26 July 1990, 13* (pp. 279–288). Kenthurst: Kangaroo Press.

Blumenthal, S. J. (1990). An overview and synopsis of risk factors, assessment, and treatment of suicidal patients over the life cycle. In J. Blumenthal & D. J. Kupfer (Eds.), *Suicide over the life cycle: Risk factors, assessment, and treatment of suicidal patients* (pp. 685–734). DC: American Psychiatric Press.

Boorstein, S. (1996). *Transpersonal psychotherapy* (2nd ed.). Albany, NY: State University of New York.

Bratton, S. C., Ray, D. C., Edwards, N. A., & Landreth, G. (2009). Child-centered play therapy (CCPT): Theory, research, and practice. *Person-Centered & Experiential Psychotherapies, 8*(4), 266–281.

Cain, A. (1972). *Survivors of suicide*. Springfield, IL: Charles C Thomas.

Calhoun, L. G., Selby, J. W., & Selby, L. E. (1982). The psychological aftermath of suicide: An analysis of current evidence. *Clinical Psychology Review, 2*(3), 409–420.

Callahan, J. (2000). Predictors and correlates of bereavement in suicide support group participants. *Suicide and Life-Threatening Behaviour, 30*(2), 104–124.

Campbell, F., & Cataldie, L. (2003). *Survivor support teams*. Paper presented at the survivors of suicide research workshop program, NIMH = NIH Office of Rare Diseases and the American Foundation for Suicide Prevention, Bethesda, MD.

Campbell, F., Cataldie, L., McIntosh, J., & Millet, K. (2004). An active postvention program. *Crisis, 25*(1), 30–32.

Cerel, J., Fristad, M. A., Weller, E. B., & Weller, R. A. (1999). Suicide- bereaved children and adolescents: A controlled longitudinal examination. *Journal of the American Academy of Child and Adolescent Psychiatry, 38*(6), 672–679.

Cerel, J., Jordan, J. R., & Duberstein, P. R. (2008). The impact of suicide on the family. *Crisis, 29*(1), 38–44.

Clark. (2001). *Living hope bereavement support*. Retrieved from http://suicideprevention.salvos.org.au/training/living-hope-bereavement-support.

Clark, S. E., & Goldney, R. D. (1995). Grief reactions and recovery in a support group for people bereaved by suicide. *Crisis, 16*(1), 27–33.

Cleiren, M. (1993). *Bereavement and adaptation: A comparative study of the aftermath of death*. Washington, DC: Hemisphere.

Compton, M. T., Thompson, N. J., & Kaslow, N. J. (2005). Social environment factors associated with suicide attempt among low-income African Americans: The protective role of family relationships and social support. *Social Psychiatry and Psychiatric Epidemiology, 40*(3), 175–185.

Crosby, A. E., & Sacks, J. J. (2002). Exposure to suicide: Incidence and association with suicidal ideation and behaviour: United States, 1994. *Suicide Life Threatening Behaviour, 32*(3), 321–328.

Culliford, L. (2002). Spirituality and clinical care. *British Medical Journal, 325*(7378), 1434–1435.

Cvinar, J. G. (2005). Do suicide survivors suffer social stigma: A review of the literature. *Perspectives in Psychiatric Care, 41*(1), 14–21.

Davis, C., & Hinger, B. (2005). *Assessing the needs of survivors of suicide*. Alberta: Calgary Health Region.

de Groot, M. H., de Keijser, J., & Neeleman, J. (2006). Grief shortly after suicide and natural death: A comparative study among spouses and first-degree relatives. *Suicide Life Threatening Behaviour, 36*(4), 418–431.

Demi, A. (1984). Social adjustment to widowhood after a sudden death: Suicide and non-suicide survivors compared. *Death Education*, *8*(Suppl.), 91–111.

Doka, K. J. (Ed.). (2002a). *Disenfranchised grief: New directions, challenges, and strategies for practice*. Champaign, IL: Research Press.

Doka, K. (2002b). Disenfranchised grief. In K. Doka (Ed.), *Living with grief: loss in later life* (pp. 159–168). Washington, DC: The Hospice Foundation of America.

Dunn, R. G., & Morrish-Vidners, D. (1987). The psychological and social experience of suicide survivors. *Omega: Journal of Death and Dying, 18*(3), 175–215.

Dyregrov, K., & Dyregrov, A. (2005). Siblings after suicide—"The forgotten bereaved". *Suicide and Life-Threatening Behaviour, 35*(6), 714–724.

Dyregrov, K., Plyhn, E., Dieserud, G., & Oatley, D. (2012). *After the suicide: Helping the bereaved to find a path from grief to recovery*. London: Jessica Kingsley.

Farberow, N. (1992). The Los Angeles survivors-after-suicide program: An evaluation. *Crisis, 13*(1), 23–34.

Fekete, S., & Schmidtke, A. (1996). Suicidal models: Their frequency and role in suicide attempters, non-suicidal psychiatric patients, and normal control cases: A comparative German Hungarian study. *OMEGA, 33*(3), 233–241.

Fine, C. (1997). *No time to say goodbye: Surviving the suicide of a loved one*. New York: Broadway Books.

Flesch, R. (1977). Mental health and bereavement by accident or suicide: A preliminary report. In Bruce. L. Danto & Austin. H. Kutscher (Eds.), *Suicide and bereavement* (pp. 128–137). New York: Arno Press.

Garvin, C. (1997). *Contemporary group work* (3rd ed.). Needham Heights, MA: Allyn and Bacon.

Gawain, S. (2011, November). Heal yourself. In sacred space. *The Times of India*, New Delhi, p. 10.

Germer, C. K., & Neff, K. D. (2013). Self-compassion in clinical practice. *Journal of Clinical Psychology, 69*(8), 856–867.

Ginott, H. (1961). *Group psychotherapy with children: The theory and practice of play therapy*. New York: McGraw-Hill.

Gitterman, A., & Schulman, L. (2005). *Mutual aid groups, vulnerable and resilient populations, and the life cycle*. New York: Columbia University Press.

Hajal, F. (1977). Post-suicide grief work in family therapy. *Journal of Marriage and Family Counselling, 3*(2), 35–42.

Hoff, L. (1989). *People in crisis: Understanding and helping* (3rd ed.). Redwood City: Addison-Wesley Publishers.
Hung, N. C., & Rabin, L. A. (2009). Comprehending childhood bereavement by parental suicide: A critical review of research on outcomes, grief processes, and interventions. *Death Studies, 33* (9), 781–814.
Hussain, A. (2011). *Spirituality and holistic health: A psychological perspective*. New Delhi: Prasad Psycho Corporation Publication.
Jackson, J. (2003). *SOS: A handbook for survivors of suicide*. Washington, DC: American Association of Suicidology.
Jaques, J. D. (2000). Surviving suicide: The impact on the family. *The Family Journal: Counselling and Therapy for Couples and Families, 8*(4), 376–379.
Joiner, T. (2005). *Why people die by suicide*. Cambridge, MA: Harvard University Press.
Jordan, J. (2001). Is suicide bereavement different? A reassessment of the literature. *Suicide and Life-Threatening Behaviour, 31*(1), 91–102.
Jordan, J. R. (2004). Unpublished lecture, AFSP Support Group Facilitator Training Program, Philadelphia, Pennsylvania.
Jordan, J. (2008). Bereavement after suicide. *Psychiatric Annals, 38*(10), 679–685.
Jordan, J. R. (2011). Principles of grief counseling with adult survivors. In J. R. Jordan & J. L. McIntosh (Eds.), *Grief after suicide: Understanding the consequences and caring for the survivors* (pp. 179–223). New York: Routledge/Taylor & Francis.
Jordan, J. R. (2012). Guided imaginal conversations with the deceased. In R. A. Neimeyer (Ed.), *Techniques of grief therapy: Creative practices for counseling the bereaved* (pp. 262–265). New York: Routledge.
Jordan, J. R., Kraus, D. R., & Ware, E. S. (1993). Observations on loss and family development. *Family Process, 32*(4), 425–440.
Katz, A. H., & Bender, E. I. (1976). *The strength of us*. New York: Franklin Watts Inc.
Kissane, D. W., Bloch, S., Dowe, D. L., Snyder, R. D., Onghena, P., McKenzie, D. P., Wallace, C. S. (1996a). The Melbourne family grief study, I: Perceptions of family functioning in bereavement. *American Journal of Psychiatry, 153*(5), 650–658.
Kissane, D. W., Bloch, S., Onghena, P., McKenzie, D. P., Snyder, R. D., & Dowe, D. L. (1996b). The Melbourne family grief study, II: Psychosocial morbidity and grief in bereaved families. *American Journal of Psychiatry, 153*(5), 659–666.
Kuramoto, S. J., Brent, D. A., & Wilcox, H. C. (2009). The impact of parental suicide on child and adolescent offspring. *Suicide Life Threatening Behaviour, 39*(2), 137–151.
Lam, W. S. (2014). In their own words: Perceived experiences and family functioning of suicide survivors before and after suicide loss. *PCOM Psychology Dissertations.* Paper 308.
Leary, M. R., Tate, E. B., Adams, C. E., Allen, A. B., & Hancock, J. (2007). Self-compassion and reactions to unpleasant self-relevant events: The implications of treating oneself kindly. *Journal of Personality and Social Psychology, 92*(5), 887–904.
Leenaars, A., & Wenckstern, S. (1998). Principals of postvention: Applications to suicide and trauma in schools. *Death Studies, 22,* 357–391.
Lester, D. (1994). Challenges in preventing suicide. *Death Studies, 18*(6), 623–639.
Lindqvist, P., Johansson, L., & Karlsson, U. (2008). In the aftermath of teenage suicide: A qualitative study of the psychosocial consequences for the surviving family members. *BMC Psychiatry, 8*, Paper 26. doi:10.1186/1471-244X-8-26.
McMenamy, J. M., Jordan, J. R., & Mitchell, A. M. (2008). What do suicide survivors tell us they need? Results of a pilot study. *Suicide and Life-Threatening Behaviour, 38*(4), 375–389.
McNiel, D. E., Hatcher, C., & Reubin, R. (1988). Family survivors of suicide and accidental death: Consequences for widows. *Suicide and Life-Threatening Behaviour, 18*(2), 137–148.
Moscicki, E. K. (1995). Epidemiology of suicidal behaviour. *Suicide and Life-Threatening Behaviour, 25*(1), 22–35.
Myers, M. F., & Fine, C. (2006). *Touched by suicide: Hope and healing after loss*. New York: Gotham Books.

Neff, K. D. (2003). Self-compassion: An alternative conceptualization of a healthy attitude toward oneself. *Self and Identity, 2*(2), 85–102.

Neff, K. D., & Germer, C. K. (2013). A pilot study and randomized controlled trial of the mindful self compassion program. *Journal of Clinical Psychology, 69*(1), 28–44.

Neimeyer, R. A. (2012). *Techniques of grief therapy: Creative practices for counselling the bereaved*. New York: Routledge.

Nelson, B. J., & Frantz, T. T. (1996). Family interactions of suicide survivors and survivors of non-suicidal death. *OMEGA—Journal of Death and Dying, 33*(2), 131–146.

Ness, D. E., & Pfeffer, C. R. (1990). Sequelae of bereavement resulting from suicide. *American Journal of Psychiatry, 147*(3), 279–285.

Nolen-Hoeksema, S. (1991). Responses to depression and their effects on the duration of depressive episodes. *Journal of Abnormal Psychology, 100*(4), 569–582.

Pearlman, L. A., Christine, F., Rando, T. A., & Wortman, C. B. (in press). *Treating traumatic bereavement*. New York: Guilford.

Pfeffer, C. R., Martins, P., Mann, J., Sunkenberg, M., Ice, A., Damore, J.P.J., … Jiang, H. (1997). Child survivors of suicide: Psychosocial characteristics. *Journal of the American Academy of Child and Adolescent Psychiatry, 36*(1), 65–74.

Qin, P., Agerbo, E., Westergard-Nielsen, N., Eriksson, T., & Mortensen, P. B. (2000). Gender differences in risk factors for suicide in Denmark. *British Journal of Psychiatry, 177*(6), 546–550.

Ramsay, R. F., Tanney, B. L., Tierney, R. J., & Lang, W. A. (1996). *Suicide intervention workshop* (6th ed.). Calgary, AB: Living Works Education.

Range, L. M. (1998). When a loss is due to suicide: Unique aspects of bereavement. In J. H. Harvey (Ed.), *Perspectives on loss: A sourcebook* (pp. 213–220). Philadelphia, PA: Brunner/Mazel.

Raphael, B. (1983). *The anatomy of bereavement*. New York: Basic Books.

Ratnarajah, D., & Schofield, M. J. (2007). Parental suicide and its aftermath: A review. *Journal of Family Studies, 13*(1), 78–93.

Richman, J. (1986). *Family therapy for suicidal people*. New York: Springer.

Rogers, J., Sheldon, A., Barwick, C., Letofsky, K., & Lancee, W. (1982). Help for families of suicide: Survivors support program. *Canadian Journal of Psychiatry, 27*(6), 444–449.

Roy, A. (1992). Genetics, biology, and suicide in the family. In R. W. Maris, A. L. Berman, J. T. Maltsberger, & R. I. Yufit (Eds.), *Assessment and prediction of suicide* (pp. 574–588). New York: Guilford Press.

Sands, D. C., Jordan, J. R., & Neimeyer, R. A. (2011). The meanings of suicide: A narrative approach to healing. In J. R. Jordan & J. L. McIntosh (Eds.), *Grief after suicide: Understanding the consequences and caring for the survivors* (pp. 249–282). New York, NY: Routledge/Taylor & Francis.

Saunders, J. (1981). A process of bereavement resolution: Uncoupled identity. *Western Journal of Nursing Research, 3*(4), 319–336.

Schneider, B., Grebner, K., Schnabel, A., & Georgi, K. (2011). Is the emotional response of survivors dependent on the consequences of the suicide and the support received? *Crisis, 32*(4), 186–193.

Séguin, M., Lesage, A., & Kiely, M. C. (1995). Parental bereavement after suicide and accident: A comparative study. *Suicide and Life-Threatening Behaviour, 25*(4), 489–498.

Shepherd, D. M., & Barraclough, B. M. (1976). The aftermath of parental suicide for children. *British Journal of Psychiatry, 129*(3), 267–276.

Sheskin, A., & Wallace, S. (1967). 'Differing bereavements: Suicide, natural, and accidental death. *Omega, 7*(3), 229–242.

Shneidman, E. S. (1971). Prevention, intervention, and postvention of suicide. *Annals of Internal Medicine, 75*(3), 453–458.

Shneidman, E. (1975). Postvention: The care of the bereaved. In R. Pasnau (Ed.), *Consultation in liaison psychiatry* (pp. 245–256). New York: Grune and Stratton.

Shneidman, E. (1996). *The suicidal mind*. New York: Oxford University Press.

Stroebe, M., & Schut, H. (1999). The dual process model of coping with bereavement: Rationale and description. *Death Studies, 23*(3), 197–224.

Swinton, J. (2003). *Spirituality and mental health care: Rediscovery a 'forgotten' dimension*. London: Jessica Kingsley Publishers.

Tall, K., Kõlves, K., Sisask, M., & Värnik, A. (2008). Do survivors respond differently when alcohol abuse complicates suicide? Findings from the psychological autopsy study in Estonia. *Drug and Alcohol Dependence, 95*(1), 129–133.

Traylor, E. S., Hayslip, B., Kaminski, P. L., & York, C. (2003). Relationships between grief and family system characteristics: A cross lagged longitudinal analysis. *Death Studies, 27*(7), 575–601.

Vessier-Batchen, M., & Douglas, D. (2006). Coping and complicated grief in survivors of homicide and suicide decedents. *Journal of Forensic Nursing, 2*(1), 25–32.

Wagner, K. G., & Calhoun, L. G. (1992). Perceptions of social support by suicide survivors and their social networks. *OMEGA, 24*(1), 61–73.

Waldfogel, S. (1997). Spirituality in medicine: Primary care. *Clinics in Office Practice, 24*(4), 963–976.

Walsh, F., & Mcgoldrick, M. (1991). *Living beyond loss: Death and the family*. New York: Norton.

Wilson, A., & Clark, S. (2005). *South Australian Suicide Postvention Project: Report to Mental Health Services, Department of Health*. Department of General Practice, University of Adelaide. Retrieved from http://digital.library.adelaide.edu.au/dspace/handle/2440/24871.

Young, I. T., Iglewicz, A., Glorioso, D., Lanouette, N., Seay, K., Ilapakurti, M., Zisook, S. (2012). Suicide bereavement and complicated grief. *Dialogues Clinical Neuroscience, 14*(2), 177–186.

Chapter 23
Solidarity in Times of Existential Crises in a Quantum World: Mapping Concepts and Weaving Field Narratives of Tragic Loss to Guide Those Left Behind

Kathryn Gow

Preamble

Weine (2013) stresses the importance of the use of narrative if we are to reach some sort of solidarity[1] in trauma work with patients, especially where severe trauma such as disasters or mass violence is involved. He believes that narrative approaches help us "to better understand how it is to live in those difficult spots associated with mass disaster and violence and use that understanding to try to develop and deliver innovative care and support that works in real-world contexts" (p. 304).

Narratives: Never to Be Forgotten Stories of Unresolved Tragic Loss

In Grade 2 at a small seaside primary school, a head teacher walked along the glass-louvered veranda outside my classroom. Our teacher called to a little girl to go outside to talk to the Head Nun. Right there, visible through the glass windows, the 7-year-old child was told that her mother had been killed by a train and that she would need to go home now. Some days later, my own mother told me the truth that the troubled Mrs. N (mother of 7 children from a very poor family with an alcoholic husband) had laid down on the railway line and a train had run over her. That was my first personal experience of suicide although it was called "Taking One's Life" in that era.

[1]Chapter author's word used to encapsulate what Weine has alluded to.

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Many years passed and at our Catholic high school, there was Christine who had two friends, one of them being myself; each had different backgrounds and each went on to marry in their early 20s. One day Christine rang me to advise me that Patricia's daughter had committed suicide by overdosing 2 months before, and now because she was visiting our State from the other side of Australia, she asked if I would go and visit Patricia with her. I was shocked that no one had told me, especially as my husband had known Patricia's husband (but no one spoke about suicide in those days). In the Catholic church, you could not be buried in the same burial grounds as people who had died normal deaths, if you had taken your own life. Not that it mattered to the deceased, but it certainly was critical for those left behind; something like a final kick in the face after the biggest kick in the gut (a "full body blow" as many bereaved describe it) that one could possibly imagine.

The three old school friends chatted soberly and caught up on our lives to date. Kathryn divorced young, Patricia who had lost her 18-year-old daughter to suicide and Christine still married with four grown up children.

Five months later, Christine phoned Kathryn at 10 o'clock one night and said that her son aged 26 had shot himself dead. Shocked, Kathryn listened to her old school friend try to explain what had happened, but who was still in a state of trauma and grief—this was very shocking news.

At 11 p.m. that same night, straight after the call had ended, Kathryn phoned her three children individually who lived in different parts of the country to check on them. From then on, she kept in contact with her children on a regular basis and offered unqualified support.

Kathryn had met Maria at her third academic job placement and had come to know her whole family. Five years later, Maria had phoned Kathryn, a psychologist, to say that she had found a suicide note in her son's desk drawer. What should she do? While hospitalizations followed for a few years, the young man later settled into a seemingly happy normal married life.

Unexpectedly 10 years later, Maria phoned Kathryn sobbing that her eldest son had killed himself. The big unsolved tragedy is that he was in a psychiatric section of a hospital when he asked if he could take a walk. Now knowing the history and meaning of a city is critical, especially when many of the hospital staff consists of newly arrived doctors and nurses from other countries. "I am just going for a walk up to The Story Bridge". No one battered an eyelid, as the man I had known since he was a small boy walked to a symbolic death: he would jump off the Story Bridge as hundreds of other people had done over the past century. He would end his ongoing suffering. Now if the medical/paramedical person he had made the comment to had been a local person, he would have known what the Bridge walk meant and would have raised a red flag and thus he would have been refused leave, they would have booked him into see the psychiatrist, and called for urgent assistance straight away.

Sadly, Maria was eventually admitted into a private hospital overcome with grief and severe trauma and depression. The father "beat his head against a brick wall" as he tried to ascertain why his son had been let out of a locked ward on an "involuntary admission" to go for a walk at night on his own. There was no legal satisfaction, and the matter was set aside.

Around the same time, I was an Assistant Dean at the university where I worked across three campuses and one day I was called to the city campus where a media professional, who was well respected in the Australian media for his work, had been taking a tutorial class with journalism students on the previous day.

At one point in the tutorial, he had excused himself and left the room. Unbeknown to anyone, he walked to the end of the corridor and jumped out of a six-storey window to his death. Some people outside the building saw him fall physically to his death; but it was some time before the students in his tutorial class found out where he had gone. The traumatic sequelae were widespread reaching throughout the university, students' lives, the personal family and friends of the deceased, the wider media and the community.

It took weeks for the counselling systems to work through the initial traumas, and the Head of the School and I worked on the idea of a carefully designed memorial service to be held in the university grounds. Staff, students and media personnel who attended report the service and shared experience as being highly spiritual and healing, giving most of them some nuance of closure. While family and friends also attended, it is not known if this recognition helped in some way at some level to ease their tragic loss even a little.

Between the accidental death of one friend's son and then the son of another friend's suicide, a call from a male health professional revealed that his son had symbolically taken his life on Australia Day in a country thousands of miles away from his own. He had apparently left the celebrations to take his life, although there was not 100% proof of that fact. The family disintegrated into blame and fractured (a not uncommon outcome of a suicide).

The area I live is has one of the highest suicide rates in Australia.[2] One incident involved an older man in a nursing home two years ago, who 2 years previously, had tried and failed to take his life. Then one year later, he left the nursing home during the early hours of the morning and drowned himself at the local pond, having left his walker and shoes neatly positioned on the bank of the pond. The local medicos reeled from this, as he was one of three suicides that week in their community.

Around the same time, a well-known local community member, who had contributed significantly to our region for 20 plus years, saw me at the local supermarket checkout counter and haltingly told me about how his son had killed himself in the previous month; this caring, generous, strong man died of a broken heart and a brain shutdown within the following two years.

In my work in the drought stricken Queensland Darling Downs between 2006 and 2008, I was called to assist with pre- and post-psychological support for farmers, as too many were being found hanging from trees or overhead shed beams, or shot through the head sadly with their loyal, but dead, cattle dog beside them.

The ages of these people spread across the lifespan. Had I not believed in some sort of afterlife, I am not sure I could have helped the survivors. However, there was

[2]Australian Bureau of Statistics, 2016, data cube Table 11.6.

something else I had come to understand. Somewhere in my mid 20s, I learned about solidarity while living in England. It is something that I came to understand more and more as my life progressed and I met people who had survived the wars in Europe.

Solidarity is critical in situations like this, whether it be with friends, family, neighbours, patients, farmers, rural communities, work places, young people, emergency service workers, church groups or schools. I could have told myself: "There is nothing I can do to help here", but I stood or sat beside them, sometimes in silence and sometimes with words of support or the comfort of spiritual and philosophical ideas to those who had suicidal thoughts, or who were on a path to annihilation, or to those left behind—bereaved of suicide.

Introduction

What happens in a person's life/psyche for them to let go of this life and choose non-existence? "The decision to end one's own life is perhaps the most important determination a person can make; however, suicidal thoughts often are held privately and are not detectable by others or even by oneself, creating a deep epistemological quandary" (Nock et al., 2010, p. 515).

Nock et al. (2010, p. 515) conclude that something else must account for why some people cope and receive help, whereas others choose suicidal behaviour as a means of escape. However, they then dispute this likelihood as well. They also rule out (but with not with high certainty) that it is due to a predisposition after being involved in prior suicide attempts.

Can a person in a suicidal state ever clearly choose suicidal behaviour as a means to escape? Yes, those persons at the end of their life, or those in too much pain to continue or those whose body are too damaged to continue under duress, may openly choose euthanasia in countries that permit this process. However, the act of suicide is not open. For many victims, it is an escape from existential hell, and many other researchers and practitioners have labelled it as such.

So back to other forces in motion, we will need to call on physics, mineralogy, religion, philosophy, semiotics and quantum theories. We do not really know what goes on with many people who let go of life; we know some factors that are gleaned from medical and hospital records based on those people who have revealed suicidal ideation at some stage. There is no doubt that long-term follow-up is required, and that funding is insufficient to permit this kind of research.

We need to acknowledge that enormous work has been done on delineating some of the causes and symptoms involved in suicidal ideation attempts and final acts. However, that question "But why?" keened by those left behind remains unanswered in many incidents. New research approaches will assist the survivors, as well as those persons on the brink of suicide.

New ideas and approaches are welcome. For example, Kwiatkowska and Kielan (2013) summarized the difficulties in isolating front and backstage variables

contributing to a workable outcome and provide a framework based on fuzzy logic and semiotic methods which they have determined and can model imprecision and context dependency in medical concepts which they have applied to clinical depression. Their article demonstrates how their modelling framework uses continuous and contextual interpretation and the dimensional nature of the symptoms. So this is a very innovative step forward in terms of applications, especially if can be applied to depressed patients to check for suicidal "black hole" states of mind and spirit.

In the meantime, we also need to focus more on those bereaved of suicide—the "traumatized survivors"—to check their complex, soul-wrenching reactions as they remain alive with a black hole waiting on the sidelines; waiting to suck them into the void and destroy the remainder of their lives or their actual life, if they cannot move forward finally.

The Black Hole

Physics can be applied to our decision-making and the impact of life on a human entity. The well-publicized theory of existence of the black hole in time and space by cosmologist Stephen Hawking has applications outside the field of physics.

An article on the Internet referred to a black hole with respect to bullying online. There is no doubt that bullying face-to-face and via cyber attacks is indicated in suicide statistics of young people in the USA, Australia and New Zealand.[3]

In the ABC TV series called "Luther", a highly intelligent young female psychopath killer explains to Luther what a black hole is with reference to living and dying: "It consumes matter; it sucks it in and crushes it beyond existence". So whether or not that is what the aforementioned web page meant, it fits perfectly in our exploration not only of bullying effects on people, but also many other impacts that can lead people to think of opting out of life. With the bullying events, we have psychopaths in training trying to slowly and painfully pull apart other human beings by targeting them online emotionally, mentally and spiritually with the intent of causing pain, and some are only satisfied when the victim is destroyed. They have "sucked them into the game" and won by devious means quickly and inexorably.

The frustration is in not knowing how to intervene and stop the out of control rise of cyber attacks (in this case on people's lives apparently indirectly but "with intent"). Laws will need to be changed quickly and appropriate action taken to divert this "black hole" on the Internet.

The contagion effects of publicity in the media about the suicides of well-known entertainers, and famous actors and persons have yet to be determined, as have the effects of a person known to others who takes his/her life and the infection this spreads to others who were linked to them in a significant way including those

[3] https://nobullying.com/suicide-statistics/.

outside the family and their inner friendship network. We see this in rural towns where the person who takes his life can be a very well-known farmer or grazier, or a young man with a smile and his whole life still ahead of him.

In the section on drought and farmer suicide, we will return to the concept of the black hole with semantically different terminology.

Solidarity: Standing by Their Side in Times of Existential Crises of Tragic Loss

In my introduction to the book "Mass Trauma: *Impact and recovery issues*" (Gow, in Gow & Celinski, 2013), I included a section in the Introduction called "The Glass Has Shattered: I Am Here" and I quote here from it.

Witnessing and Solidarity

The essence of solidarity, a term made famous by the Polish trade union formed in 1980, and actually observed through the standing side by side of workers to fight for better things for people against great odds, is defined by the Collins Dictionary of Sociology (p. 621) as "the integration, and degree and type of integration, shown by a society or group with people and their neighbours", that is, the ties that bind people together within a society. (p. 14)

> In spiritual terms, when there is nothing you can say to a person in real trauma or massive grief, when you have no answers, there is still the presence of solidarity - sticking in there, being there as solid as a rock where your presence is sensed as stable, strong and sincere, and continuing through the moment in crisis and not letting go till the rescuers come, or the next stage of therapy is reached, or the person goes to hospital, or someone takes him home or to another place, or you return another day or night (p. 14).

In my chapter (Chap. 20) in *Individual trauma: Recovering from deep wounds and exploring the potential for renewal* (Gow & Celinski, 2012), on Cambodia (having conducted trauma training for health and welfare staff in Phnom Penh in the late 1990s), I spoke about the need to "be there" for those who have survived the genocide: "In terms of solidarity, we have to be with the other in hell and know beyond doubt, that there is a way out, or if not, then that we are prepared to stay with the person in their hell, till they know we will not desert them. But being prepared to descend into hell is critical" (p. 369).

On the 23 April 2011, the television stations ran a story of the Japanese Prime Minister visiting some of the Japanese earthquake survivors, and whereas we would shake their hand or take their hand, he and his emissaries, lowered themselves to their knees and bowed low to the ground as a mark of absolute respect with the highest regard. That is solidarity.

Natural Disasters, Drought and Suicide

As Indicated at the beginning of the chapter, droughts are rarely considered as a natural disaster and are often left out of studies on the consequences of disasters on the mental health of those persons affected by severe natural disasters (see Gow, 2009a, b, c). However, suicides in droughts in Australia were notable in the first decade of this century. "It's all gone". "We have lost it all". "We will never get it back". "What's the use?" The farmer did not get to this point of no return quickly or easily. The concept of the "black dog" is different from the "black hole", although metaphorically the black dog takes the farmer into the black hole. Where before the icon of the cattle dog (blue, black, brown or red cattle dog) was the farmer's best friend who never left his side and was his faithful companion, now the black dog[4] "dogs" (stalks) him into negativity, depression, acute anomie and despair. A very special emotional and even spiritual/psychic bond is normally formed between the farmer and his dog (see the movie "Red Dog[5]" for the role of the cattle dog in Australian rural life and mythology to fully appreciate the role a cattle dog can play in the rural man's life and the wider community).

Generally, the connection to the land and the farm and animals and way of life goes back many generations and while a counsellor or friend or bank manager may point out to the farmer, who has now borrowed more than he can ever repay to the bank, that it is time to sell up the family farm and move to a large town or city, the farmer cannot let go as he can see no future other than what he was born into. The love of the land has seeped into his psyche and while the experience is akin to that of the indigenous people who have an intimate connection to the land of Australia, the former exacts from it while the latter traditionally lets it be. Both have a similar high rate of suicide for different reasons, but both love the land of this vast country.

In the meantime, the farmer's children have been sent to boarding schools far away (if they are not already there because of the vast distances and transport costs required to travel to educational and medical facilities), and the wife may have moved to a town to obtain employment to help pay the bills.

Families would separate in long droughts, and then the relationship might cease being what it had been as the farmer was left on his own. That may have made it an easier decision or appositionally a more logical reason for the farmer to "end his life". But overall, too often and rarely publicized, the farmer was found with a rope around his neck hanging from some beam or tree branch high up and out of sight generally, or lying dead beside his cattle dog that he had shot first, so that his faithful friend did not starve slowly to death after the farmer had gone.

These rural people are proud and independent people. In the Long Drought in Queensland (16 years in some parts), when I worked in the mid-west areas of Southern Queensland, we were told to take cake and biscuits with us on our home

[4]See the Black Dog Institute.

[5]The Red Dog movie film is based on a book "Red Dog" written by Louis de Bernières. Film Released 2011.

visits, as the farmer or farmer's wife[6] would be embarrassed when they could not offer the normal Country hospitality to a visitor.

We knew that the farmers and communities were in trouble whenever a particular large rural real estate company put up a "For Sale" sign; the property would be sold up for what they could get to pay out the bank loan and other creditors. While the deaths by suicide were hushed up, the bush telegraph spread the news and this only reinforced the hopelessness of the farmer's plight in Australia where no rain fell for a long, long time.

Again in this job, it was about showing Solidarity. On one visit, I stood in the hot sun for 2.5 hours while the farmer talked back and forward about the family and business issues. Then after tolerating the biting ants crawling up my trouser for over 2 hours, I asked him if we could go inside for some water. But before we did that I asked him to summarize where he thought he was now after our discussion (counselling session in code).

To my surprise, he spatially stepped out the issues and logically nominated the main problems and what had to be done about them. I was stunned and extremely impressed by the intelligence in action played out on dirt ground deprived of rain for over 10 years.

Farmers could cope with the interference or government or short-term contract helpers, but I would take with me a copy of the poem "The Suit" to show them I understood that the great divide was more than the range of high mountains that separate the large cities from the vast grazing and cropping lands west of the divide. Tautologically, the great divide was just that; on one side, the city folk and on the other, the farmers and graziers and the businesses that helped them survive.

The empathic, easy going, experienced counsellor contracted to work with primary industries who had been given the seemingly joyful task of taking Christmas hampers to these struggling families, soon learned that a normal approach was not going to work; "No mate, thanks for the kind thoughts, but we can't take those hampers; there are worse off people just down the road a kilometre or so who need them more". So he learned to wait until he knew no one would be home and drove around to the back of the farmhouse and dropped the hampers safely out of reach of farm animals and guard dogs and "snuck" away quietly.

People across the world who work in rural and country areas understand the difference between working with clients in non-city conditions. "It's a whole other way of working" announced Sarah Lutkin at the Rural and Remote Interest Group presentation as part of the Australian Psychology Congress in September 2016.

The following poem became famous in Australia following periods of extended drought which did not impact on 80% of the population until they too lost their water or serious water restrictions were placed on them. Here I quote only two stanzas of a poem by Murray Hartin (2007):

[6]Many more women have become independent farmers across Australia in the following years after the long drought broke.

Rain from Nowhere

His cattle didn't get a bid, they were fairly bloody poor,
What was he going to do? He couldn't feed them anymore,
The dams were all but dry, hay was thirteen bucks a bale,
Last month's talk of rain was just a fairytale,
His credit had run out, no chance to pay what's owed,
Bad thoughts ran through his head as he drove down Gully Road.
"Geez, great grandad bought the place back in 1898,
"Now I'm such a useless bastard, I'll have to shut the gate.
"Can't support my wife and kids, not like dad and those before,
"Crikey, Grandma kept it going while Pop fought in the war."
With depression now his master, he abandoned what was right,
There's no place in life for failures, he'd end it all tonight.

Many researchers have conducted studies on suicide rates following natural disasters, but not necessarily for extended periods of time. Olson (2016 online) reports that, after the June 2013 catastrophic flash flood in Alberta, Canada, apart from property damage, there was also serious emotional and psychological damage evident among the victims. They checked for suicidal problems, but it was not until "two and a half months after the flood that suicide-related issues began to comprise a major percentage of crisis calls". He concluded that it was too early to determine the long-term effects in that case, but other countries have recorded discrepant findings. For example, Matsubayashi, Sawada, and Ueda (2013, p. 127) posit that when a disaster is extremely large, what we would call a mega disaster, suicide rates tend to increase immediately after the disaster and possibly for several years later. This does not necessarily concur with other research outcomes, however.

Moreover, he further states that "social connectedness alone will not offset the long-term outcomes of a severe disaster, and that the negative psychological effects might not emerge until years after it occurs". Indeed interestingly, there was an inverse relationship between non-fatal suicidal behaviours immediately after the disaster, labelled as the honeymoon phase (Zunin & Myers, 2000), but an increase in suicidal behaviours later such as with the victims of the 2008 Victorian bushfires[7] where it was some years later when some of the victims rallied to assist the survivors of the disastrous Grantham flood (Queensland)—and later allegedly three of those Victorian bushfire survivors carried out a suicide pact. This might be explained by the horror of the deluge wiping out the town of Grantham which was also portrayed over and over again for some years on television.

The heroic—honeymoon—disillusionment phenomena (see Zunin & Myers, 2000) are now being used in practice and research to gauge a better overall view of trauma and adaption following natural disasters. Madianos and Evi (2010) confirm

[7]See Gow (2009c) for the author's observations of the aftermath of those bushfires.

that the honeymoon phenomena mask the trauma impact in the short term, and note a drop in suicide rates in the immediate aftermath of a disaster, consistent with the theory and practical knowledge. Gordon (1997) applied this theory to assist disaster workers and survivors plus modifications in the twenty-first century disasters in Australia including the Victorian bushfires and mega floods in various States.

This century has been beset by supra-natural disasters of destructive impacts not witnessed so often or so widely in the past century. The frequency and ferocity continues this year across the world. More people are talking about "End Days" and prophecies when counting up the range of foretold events which appear to have happened already. Indeed, a decade ago, Psychologist Elizabeth Tindle (who had lived on Galapagos Island for three years from 1976 to 1979, with her scientist research husband Dr. Robert Tindle) asked me to co-chair a workshop of psychologists and other persons concerned about the impact of climate change and other overwhelming scientific projections for what would happen in our country and especially in our State where cities had severe water restrictions. The aim of the workshop was to interrupt the projectile thinking that life was no longer worth living if we were all going to die anyway; some people were refusing to bring children into a world of war, pestilence, drought, man-made and natural disasters and a world where the heat would be so intense that by the mid-to-late twenty-first century that all the land in Queensland and possibly other States in Australia would be burned by bushfires, and left with no water except for a small section of South East Queensland and Northern New South Wales. These were valid scientific research projections, not just doomsday prophecies.

Please note the workshop was held before the impact of the mega disasters that beset Australia from 2008 onwards and continue at the time of finalizing this chapter, when an unprecedented supra-storm struck South Australia[8] severely damaging parts of the State of South Australia and took out the whole power grid across that State. This was one of many types of different weather events (e.g. super cell storms) now being demonstrated in Australia similar to those that strike the USA.

Because we have had so many natural disasters in the past 8 years, governments and insurance companies have toughened their stance and reduced or removed disaster assistance payouts to disaster victims and cancelled insurance policies or quadrupled the insurance cover fees for those people whose properties may still be risk at some time in the future. These actions immediately cause stress and depression among the already financially stretched victims, of which there are now many tens of thousands of people affected. These numbers are a very high proportion of the population as while Australia has a very large land area, it has only 24 million people who live mainly near its coastlines as the inland areas are dry or desert.

Multiple disasters lead to high stress, uncertainty, loss of faith in the future and depression and, from observations, a major increase in fears for the future and the futility of living as people adjust to a different future as occurred in the USA after

[8]Cyclones in Australia have only impacted on Northern Australia to date.

the 2008 financial collapse. Major educational programs need to be instigated in first worlds where people do live with unreal dreams of wealth and that life does have much to offer in other realms of experience. The World Health Organisation (2008) has continually called for action to be taken in terms of the impact of disasters on people's mental health across the world, and the Australian Federal Government published an action report following extensive visits to rural areas across Australia during the long drought (Mental Health and Drought, in Drought Review Expert Social Panel, 2008).

Spiritual and Existential Quandaries

Causation. The biggest question asked after a suicide is "Why, Why, Why???" In addressing this question, we need to leave aside the media reports of failed business people jumping out of high-rise buildings or shooting themselves in the head or overdosing, because everything they owned or thought they owned has just dissipated in a day (akin to the impact of natural disasters).

In normal everyday living, where there is no visible major external impact on their lives, "survivors" of suicide (those bereaved of suicide) ask why did he/she take his/her life? Did they not care about me/us anymore? Surely, they must have known how this would damage us! No, in most situations, the person has gone beyond the pale and into a dark zone where nothing can get through to their rational mind or will to live.

For those with a history of hospitalization or visits to medical doctors or lifeline services or other help services, there are some answers; we at least have some knowledge about what led the person to "let go of life". Those left behind search for answers for many years, until they gently close the door in peace or exhaustion to the inaccessible and unknowable. Answers can aid in making meaning out of what has happened; survivors need to make sense of the unbelievable madness of suicide. Olson (2014) reports on Leenaars' (1996) idiographic (specific) and nomothetic (general) elements in suicide analyses. In his multidimensional model, both intrapsychic and interpersonal features are included.

The church talks about the sanctity of life being preserved at all costs. Nevertheless, this is not the lived experience of people in agony, whether it is short-lived trauma or long-lived anomie. It is so different from a natural death and even from a sudden death.

However, for those with no known history of reporting to any medical or hospital system or other base, we often have no idea. The emergency service workers can ask questions: "But Mrs. Jones was your son upset? Was there a relationship break-up, gambling alcohol, or drug dependence, loss of job, injury, bullying at school or online? Others wonder was there a sudden incurable illness, age weary, serious illness from which he/she could not recover.

The priest, minister, rabbi, mullah or monk may console the family or friends that she is safe now from torture and illness. Many people keep these fears and failures, shame and to themselves for years and decades. "It was not your fault!"

The counsellors at Lifeline Australia and other agencies assist those bereaved of suicide over many months and years. The time varies from person to person as to when they can move to a stage where they can make some new meaning out of what has happened or are able to let it rest for a while; there is no room following a sudden death for inexperienced people to talk here about post-traumatic growth; that is insulting and unkind and lacking in any kind of emotional or spiritual sensitivity.

Those bereaved of suicide are not only suffering from shock, but also they have moved across a plane of existence bordering on an existential void. Thrown out into the black hole of nothingness and then when feeling returns, they are beset by a barrage of mental, physical, emotional, and spiritual pain and agony.

Many people lose their faith over this tragic loss and yet others find new meaning, but all of these movements happen at different trajectories of speed and light. Their world has been shaken from under them, and they have been cut loose in the universe.

Gall, Henneberry, and Eyre (2015) speak about the importance of reconciliation when it comes to the spiritual struggles that survivors endure and they can lead people to understand that even though a person may experience a loss of faith, in the end it is really an "abandonment of a specific religious belief" that is put aside in favour of "a move towards a more personally defined spirituality" (p. 98). Professor David Spiegel from Stanford University would emphasize, at the correct moment in the healing process, that while the person they love may have died, the relationship they had with them lives on. Again, Gall et al. (2015) proffer that "beliefs in an afterlife and continued bonds with loved ones hold promise in terms of helping bereaved individuals to find meaning in the suicide" (p. 98).

Researchers can distance themselves from the pain and the anomie, but practitioners cannot (see Jordan, 2008). However, researchers can provide answers for practitioners and the bereaved because meaning making helps those bereaved of suicide or "Survivors" as some call those left behind.

We can draw on systems theory and the disaster experience to reflect further on the concept of, and the projected ability to, bounce forward. However, the Bounce Forward concept is difficult to comprehend when speaking about those left behind after a suicide.

It is much easier to focus on the counsellors, emergency services workers (ambulance, police, fire and rescue, land sea rescue), medical and paramedical staff, church helpers, community workers and suicide prevention groups such as Lifeline Australia, Beyond Blue, The Black Dog Institute and other suicide prevention groups when considering this concept.

Why is it not as applicable to family, relatives, friends, children, neighbours, and group members' etcetera? Because it is much harder for them to bounce forward as their investment is higher—much, much higher. The bounce back concept is based on linear models of movement across life. Such an assumption about linear moves

forward may have been more suited to non-personal matters where life is well structured and proceeds along a typical well-patterned, unchanging routine and lifestyle.

Nobody bounces back after suicide and frankly nor can they bounce forward. So why introduce this concept in the serious matter of suicide bereavement? Because it is precisely a crossing over to a plane of peace/healing—a type of quantum leap but more gentle—to understand and know that there is something else out there. Some survivors/those bereaved of suicide talk about an experience which they label as spiritual or psychic or other worldly (see Fosha, 2006).

Obviously, some people will feel the absence of the missing person more than others. When they get "bogged down" 5 years after the death (passing over) of the person, others around them may get impatient and feel drained; why won't they just on with life while they can still do something practical. Guilt remains and it depends on how successful the individual will be in moving forward finally (tentatively at times and then occasionally the person may indeed make a quantum leap to a new life).

This concept has been referred to recently in the post-disaster literature under the banner of bounce forward. The actual association Manyena, O'Brien, O'Keefe, and Rose (2011) posited was in relation to recovering from disasters; however, the term also came from quantum theory sources. In this setting, it is about reaching a point or a place where every avenue has been explored in terms of assisting the survivors to get on with their lives without the "treasured" valued person being present in their lives.

This author believes that Quantum physics has presented us with challenging and uplifting ideas, the utilization of which may help in healing and recovery and provide the ability to jolt us, if necessary, into a different plane of being, in order to move on with life, albeit it be on a different trajectory than that which we may have been unconsciously programmed for.

The term adaptive capacity (embedded in ecological systems) can also be conceived as the social resilience of someone who finds the capacity for positive adaptation despite adversity (Luthar & Cicchetti, 2000). In the book *Mass trauma: Impact and recovery issues,* Gow and Mohay (2013) explain more in depth about the effect of the eco-resilience and social resilience, especially in relation to droughts and natural disasters.

It is easier to conceive of the idea that a community could bounce forward after a natural disaster than a person. Following the annihilation of Christchurch (South Island of New Zealand) after the massive earthquake in February 2011, Vallance (2012) links the concepts of the adaptive capacity of a socio-ecological system to recovery; that is, its "ability to cope with change by observing, learning and then modifying the way it interacts with the world, over different geographic and temporal scales" (see Folke et al., 2002).

We know that it takes a major destination and trajectory change for an individual's internal and external forces for the real bounce forward to occur. Bouncing back should not be confused with bouncing forward or recovering when one's system goes back to homoeostasis.

However, it is possible that by receiving such a catastrophic jolt via a natural disaster that new directions can now be envisioned; that is, it is not just the imperative to change that opens the possibilities, it is also some crossing of a plane or time zone or space (Is it possible that there is a cleavage between the two states after a quantum change occurs that may be tangential?).

In geology and mineralogy, the term cleavage is well known. There is a recognized difference between crystal parting and cleavage. "Cleavage is the tendency of a mineral to break along smooth planes parallel to zones of weak bonding" (Wikipedia, 2016) and is thus expected by those who know what is going on. But crystal parting occurs when minerals break along planes of structural weakness due to external stress or along twin composition planes. Parting breaks are very similar in appearance to cleavage, but only occur due to stress. Thus, if a person/system is not aware of external stress on the object/item/animal/human being, then safety issues arise as cracks weaken the entity. If we specifically consider a human being as the rock or mineral/metal, and there is a chink in the chain or some major stress is applied to it, and then a sudden heavy push or pull occurs, then depending on the condition of the object/person, it is not unusual for it to break or chip and weaken further, and then fracture may well occur.

Conclusion

Perfect timing, great empathy, patience, care, sensitivity and judging how many years of mourning need to have passed is required not only for the immediate persons affected by the severing of the relationship of the departed, but also for all professionals and researchers involved in this field so that they too may not burnout or become ill or just give up.

So utilizing the idea of bouncing forward, it is possible that we can move out of a projected trajectory of grief and annihilation following loss; this applies to all those involved with tragic loss, whether they be survivors of suicide or disasters. It applies to the helpers, as equally to the loved ones suffering the loss of a person/s to suicide or disaster.

On the way to the bounce forward preparation, there is normally a timeline in the bereavement process that can be aided by attending programs such as those offered by Lifeline Community Care Brisbane in Australia. Groos' (2012) chapter is well worth reading for those who are actively involved in helping those persons bereaved of suicide.

We are human and while we may want to travel to new worlds or live on Mars, we also need to acknowledge, as many spiritual leaders in the world have pointed out: You are not alone, even if there is only one set of footprints in the sand at some stages of your life.[9]

[9]The poem *The Footprints* (anonymous) is famous in some western spiritual environments.

References

Bullying and Suicide Statistics in US, Australia and New Zealand. Modified: September 01, 2016. Retrieved from https://nobullying.com/suicide-statistics/.

De Leo, D. (2016). *Natural disasters and suicidal behaviours: A systematic literature review*. OSC Asia Pacific Conference, 27.

Drought Policy Review Expert Social Panel. (2008). *It's about people: Changing perspective. A Report to government by an expert social panel on dryness.* Report to the Minister for Agriculture, Fisheries and Forestry, Canberra, September.

Folke, C., Carpenter, C., Elmqvist, T., Gunderson, L., Holling, C., & Walker, B. (2002). Resilience and sustainable development: Building adaptive capacityin a world of transformations. *AMBIO, 3,* 437–440.

Fosha, D. (2006). Quantum transformation in trauma and treatment: Traversing the crisis of healing change. *Journal of Clinical Psychology, 62*(5), 569–583.

Gall, T. L., Henneberry, J., & Eyre, M. (2015). Spiritual beliefs and meaning-making within the context of suicide bereavement. *Journal for the Study of Spirituality, 5*(2), 98–112.

Gordon, R. (1997). Theory and practice of early interventions in trauma and disaster. *Psychotherapy in Australia, 3*(2), 44–51.

Gow, K. (2009a). Can we anticipate more heatwaves, wildfires, droughts and deluges? In K. Gow (Ed.), *Meltdown: Climate change, natural disasters & other catastrophes—Fears and concerns of the future* (pp. 157–174). New York: Nova Science Publications.

Gow, K. (2009b). Drought in rural areas: Not just the absence of water. In K. Gow (Ed.), *Meltdown: Climate change, natural disasters & other catastrophes—Fears and concerns of the future* (pp. 269–286). New York: Nova Science Publications.

Gow, K. (2009c). *The long road home.* ABC News pages 1–2. Posted Tue Feb 10, 2009 9.38 am AEDT. Retrieved from http://abc.net.au/news/stories/2009/02/10/2486966.htm on the Victorian bushfires.

Gow, K., & Celinski, M. (2012). *Individual trauma: Recovering from deep wounds and exploring the potential for renewal*. New York: Nova Science Publishers.

Gow, K. (2013). Overview: Mass trauma affects whole communities. In K. Gow & M. Celinski (Eds.), *Mass trauma: Impact and recovery issues*. New York: Nova Science Publishers.

Gow, K., & Mohay, H. (2013). When community resilience breaks down after natural disasters. In K. Gow & W. Celinski (Eds.), *Mass trauma: Impact and recovery issues* (pp. 257–280). New York: Nova Science Publishers.

Groos, A. D. (2012). Trauma, grief and guilt in suicide bereavement. In K. Gow & M. Celinski (Eds.), *Individual trauma: Recovering from deep wounds and exploring the potential for renewal* (pp. 83–100). New York: Nova Science Publishers.

Hartin, M. (2007). Australian poem, Murray Hartin, Rain from Nowhere. Friday, 09/03/2007. *Australian storyteller*. Retrieved from http://www.abc.net.au/rural/content/2007/s1867794.htm..

Jordan, J. (2008). Bereavement after suicide. *Psychiatric Annals, 38*(10), 1–6.

Kwiatkowska, M., & Kielan, K. (2013). Fuzzy logic and semiotic methods in modelling of medical concepts. *Fuzzy Sets and Systems, 214,* 35–50.

Leenaars, A., Kolves, K., & Kolves, K.E. (1996). Suicide: A multidimensional malaise. *Suicide and Life-Threatening Behaviour, 26*(3), 221–236.

Luthar, S. S., & Cicchetti, D. (2000). The construct of resilience: implications for interventions and social policies. *Development and Psychopathology*, *12*(4), 857–885.

Madianos, M., & Evi, K. (2010). Trauma and natural disasters: The case of earthquakes in Greece. *Journal of Loss and Trauma, 15,* 138–150.

Manyena, S., O'Brien, G., O'Keefe, P., & Rose, J. (2011). Disaster resilience: Abounce back or bounce forward ability? *Local Environment, 16*(5), 417–424.

Matsubayashi, T., Sawada, Y., & Ueda, M. (2013). Natural disasters and suicide: Evidence from Japan. *Social Science and Medicine, 82,* 126–133.

Mental Health and Drought in Rural and Remote Queensland. (2008). Service mapping report of the centre for rural & remote mental health Queensland. November 2008. http://www.aph.gov.au/DocumentStore.ashx?id=407159ee-548f-4098-875e....

Nock, M. K., Park, J. M., Finn, C. T., Deliberto, T. L., Dour, H. J., & Banaji, M. R. (2010). Measuring the suicidal mind: Implicit cognition predicts suicidal behavior. *Psychological Science, 21*(4), 511–517.

Olson, R. (2014). *Why do people kill themselves?*. Info Exchange: Centre for Suicide Prevention. 17.

Olsen, R. (2016). *Natural disasters and rates of suicide: A connection? Centre for suicide prevention*. Retrieved from https://www.suicideinfo.ca/resource/naturaldisastersandsuicide/.

Vallance, S. (2012). *Urban resilience: Bouncing back, coping, thriving*. Paper presented at EARTH: FIRE AND RAIN Australian & New Zealand Disaster and Emergency Management Conference, Brisbane, 16–18 April, 2012.

Weine, S. (2013). Towards dialogic trauma work. In K. Gow & M. Celinski (Eds.), *Mass trauma: Impact and recovery issues* (pp. 300–311). New York: Nova Science Publishers.

World Health Organisation. (2008). *WHO urges more investments, services for mental health*. Retrieved October 2, 2008 from http://www.who.int/mental_health/en/.

Wikipedia, 2016. https://en.wikipedia.org/wiki/Cleavage_(crystal)

Zunin L. M., & Myers, D. (2000). *Training manual for human service workers in major disasters* (2nd ed.). Washington, DC: DHHS Publication No. ADM 90–538. Retrieved September 01, 2016 from http://www.mentalhealth.org/publications/allpubs/ADM90-538/tmsection1.asp.

Part III
Prevention, Intervention and Beyond

Chapter 24
Spirituality, Religion and Suicide: French Findings

Olfa Helene Mandhouj

Although religion has played a role in human life for over 500,000 years, it is the oldest form of medical practice (Miller, 1999; Sulmasy, 2009), Today it has become "a taboo subject", most often avoided by practitioners.

Before the development of medicine, people were cared for by healers. These included consulting spiritual leaders such as "Curandero and curandera" in Mexico, or going to a place of pilgrimage such as "Lourdes" or "Chimayo" (Miller, 1999). Shamans were the traditional healers of the tribes. Their care consisted in some religious rituals (Sulmasy, 2009). In many cultures, a holistic view of the human being remains predominant, such as the case of Chinese médicine.

The émergence of modern experimental medicine in the nineteenth century was followed by the abandonment of the vitalism and an explicit separation between science and religion.

The 1970s were characterized by the development of "Alternative Medicine" and since the 1990s, researches on the relationship between medicine and spirituality had considerably increased. Since the 1990s, both the number of studies about the relationship between religion and health, and the methodological quality of these studies have largely increased.

In the last 20 years, numerous studies have been published on the relationship between spirituality and health in various disciplines such as medicine, nursing, sociology, psychology, theology, etc.

Over the last decades, the concept of health has expanded far beyond the notion of the absence of a biological disease. Health is strongly influenced by individual culture, intimate personal relationships, social context, the quality of social relationships, and philosophical ideas, including the meaning it gives to life.

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Many individuals suffering from psychological, emotional, stressful life events turn to religion in order to find comfort, hope and meaning in their lives. This refuge in religion can help some people but can also increase the psychological suffering of some vulnerable people. Indeed, religious beliefs, coupled with a rigid normative moral framework, can, for some people, increase their anxiety and sense of guilt. Pargament (1997) suggested that religious coping potentially serves several purposes: spiritual (meaning, purpose, hope), self-development, resolve (self-efficacy), sharing (closeness, community connectedness) and restraint (keeping emotion and behaviour under control). SR coping can be positive (e.g. praying for relieving anxiety, stop drinking alcohol due to religious considerations, etc.) or negative (e.g. thinking to be abandoned by God, feeling anxious after reading scriptures, etc.).

The association between spirituality and health is an emerging area of research, relatively little explored in Europe (Koenig, Mc Cullough, & Larson, 2001; Nicholson, Rose, & Bobak, 2010). Spirituality and religious involvement have been linked to positive health outcomes and to better quality of life (Ferrell, Dow, & Grant, 1995; O'Connor, Wicker, & Germino, 1990; WHOQOL, 2006). In particular, spirituality and religiousness are associated with lower rates of physical, mental and substance use disorders and with how patients cope with illness (Ferrell et al., 1995; O'Connor et al., 1990; WHOQOL, 2006). Incorporating spiritual perspectives as a component of quality of life may allow for the implementation of better and possibly more acceptable health care, particularly for religiously oriented and/or terminally ill patients.

Research on spirituality, religiousness and health has largely been conducted in North America (Koenig et al., 2001) but religiousness and its relationship to health status varies greatly across countries (Nicholson, Rose, & Bobak, 2009; Nicholson et al., 2010). France has a secular culture and a high prevalence of agnosticism and atheism and, in this regard, they differ from many other countries (Nicholson et al., 2009).

Because there have been very few studies of associations between spirituality and health in France, we had to find an adapted instrument, which allows us to measure spirituality in our secular and multicultural country.

The Choice of a Measuring Instrument

There are more than 100 instruments for measuring spirituality and religiosity used in the literature in medicine, sociology, psychology, etc. Almost all of these questionnaires have been developed in North America, where the religious cultural context differs significantly from the European context. On the other hand, no questionnaire can be adapted to any kind of spiritual beliefs and religious practices (Fetzer, 2003).

World Health Organization Quality of Life Project developed the *Spirituality, Religiousness and Personal Beliefs Instrument* (WHOQOL-SRPB), a questionnaire that assesses quality-of-life aspects related to spirituality, religiousness and personal

beliefs (WHOQOL, 2006). The SRPB is a chapter of the WHOQOL, which is a subjective, cross-cultural quality-of-life questionnaire and one of the few such instruments that includes an existential component. The SRPB was developed from an extensive research project conducted in 18 centres around the world, involving participants that represented all major religions (WHOQOL, 2006). The strength of the SRPB relies on its multinational and multi-language development and validation, which allows cross-cultural comparisons. However, the partial validation study of the SRPB (principal component analysis, internal consistency and some tests of construct validity) did not include any French-speaking country.

So, we set out to develop and to assess the validity of a French-language version of the SRPB.

WHOQOL-SRPB covers eight facets (Spiritual Connectedness, Meaning of Life, Awe, Wholeness and Integration, Spiritual Strength, Inner peace, Hope and Optimism and Faith) and contains 32 items (four questions per facet), answered on a 5-point Likert scale ranging from "not at all" to "an extreme amount".

We translated the WHOQOL-SRPB instrument from English into French, then assessed the validity of the French version by posting it on a French-language website and invited participants to complete the questionnaire. Responses were analyzed to assess the reliability, factor structure, social desirability bias and construct validity of the French SRPB. The questionnaire is available at: http://www.stoptabac.ch/cgibin/spiritu.pl?language=fr.

The translated version retained many of the properties of the original version; in particular, the French version produced few missing answers, its test-retest reliability coefficients and alpha coefficients were high, and its factor structure was interpretable.

So, we decided to continue our researches about the relationship between spirituality and mental illness using our validated questionnaire WHOQOL-SRPB and ad hoc questionnaires. In what follows, I will present two main studies. The first focused on a suicidal population and the second on a population of detainees.

Spirituality, Religion Among French Suicide Attempters

Introduction

Every year, more than 800,000 people commit suicide. In France, in 2006, 17 people in 100,000 committed suicide. Suicide is among the three leading causes of death among those aged 15–44 years in some countries, and the second leading cause of death in the 10–24 years age group (Courtet, 2010). These figures do not include suicide attempts which can be many times more frequent than suicide.

Suicide is a complex phenomenon involving psychological, social, biological, cultural and environmental factors Mental disorders (particularly depression, alcohol use disorders and personality disorders) are among the major risk factor for suicide in Europe and North America, although several other environmental factors

have been shown to be involved, such as early life adverse events, social support and religion (Arsenault-Lapierre, Kim, & Turecki, 2004; Courtet, 2010).

The relationship between religion and suicide has been studied by the French sociologist Emile Durkheim (Durkheim, 1897/2002). Durkheim illustrated the protective effect of religion by the social integration and regulation among Catholics. Since Durkheim, most researches about the relationship between religiosity and suicidal behaviours confirmed this protective effect. Indeed, epidemiologic, sociologic and clinical studies showed that spiritual and religious practices are associated with a lower risk of suicide attempts (Bostwick & Rummans, 2007). Most of studies found lower prevalence of suicidal behaviour among more religious people (Goldston et al., 2008; Koenig, 2009; Koenig et al. 2001; Sloan, Bagiella, & Powell, 1999). Surveys among psychiatric patients found that religious affiliation, religious beliefs and moral objections were often reported as preventing patients from attempting suicide (Bagley & Ramsey, 1989; Dervic et al., 2004; Fleming & Ledogar, 2008; Fournier, 1999; Peteet, 2007).

Stark, Doyle, and Rushing (1983) have suggested a variety of mechanisms whereby involvement in religion might deter suicide: encouraging beliefs in an afterlife and in a loving God; conveying purpose and self-esteem; providing role models for coping with stress and crisis and offering resources for reframing life's struggles and difficulties.

Suicidal behaviours are to some extent related to aggressive and impulsive traits. Anger predicts future suicidal behaviour especially among adolescent boys (Goldney, Winefield, Saebel, Winefield, & Tiggeman, 1997). Religiosity has been reported to be associated with lower hostility, less anger and less aggressiveness. Therefore, religious affiliation may affect suicidal behaviour by lowering aggression levels and through moral objections to suicide.

By "religion" we mean both spirituality (concerned with the transcendent, addressing the ultimate questions about life's meaning) and religiousness (specific behavioural, social, doctrinal and denominational characteristics). Spirituality and religiosity may be associated with a lower suicide risk because some religions forbid it and, in general, religions can give a meaning for life and hope. Also, religion may prevent suicide through the social support brought by one's religious community (King, Sobal, Haggerty, Dent, & Patton, 1992; Koenig et al., 2001; Kok, 1988; McCullough, Hoyt, Larson, Koenig, & Thoresenl, 2000; Pescosolido & Georgianna, 1989).

A review found that 84% of studies showed lower prevalence of suicidal behaviour among more religious people (Koenig et al., 2001). Koenig (2009) found that out of 68 studies about SR and suicide, 57 studies of them showed that suicide rate was lower among people having a high religiousness. Concerning the mechanisms involved, spirituality may to some extent prevent suicide because most religions forbid it. Also, religions can give a meaning for life and bring hope, i.e. a factor associated with a lower suicidal risk. Finally religious involvement can prevent suicide because the religious person feels sustained by the social support brought by his/her community and/or religious leaders.

Nevertheless, clinicians' often avoid speaking about spirituality and religion with their patients (Huguelet, Mohr, Borras, Gillieron, & Brandt, 2006). This could be due to clinicians' lack of knowledge for answering questions about spirituality and religion, lack of time to talk about these topics, the fear of imposing their point of view, or a lack of interest or a negative vision of religion (Larimore, Parker, & Crowther, 2002; Mohr, Gillieron, Borras, Brandt, & Huguelet 2007; Neeleman & Persaud, 1995; Swinton, 2001). Psychiatrists are also reported to be less religious than the general population (Baetz, Larson, Marcoux, Jokic, & Bowen, 2002; Galanter, Larson, & Rubenstone, 1991; Neeleman & Persaud, 1995).

Yet, practicing a spiritual assessment as a part of the assessment of the risk of suicide may allow clinicians' to figure out the meaning of life of their patients, their purpose in life, their motivation to stay alive, the quality of their social support, as well as their vision concerning what happens afterlife. This latter aspect is intuitively important as we can postulate that what happens beyond death is likely to influence motivation to die. Hence psychiatric practice in this field might be improved if a better understanding of the role of religious beliefs in mental health and adaptation were integrated into clinicians' habits (Neeleman & Persaud, 1995).

The majority of studies on the relation between suicide and religion were not focused on a broader construct of spirituality. I remind you again that the most of the studies about spirituality and religion have been performed in North Americans, and especially in US, a country at the top of the list of industrial countries in religiosity indicators. In view of the secular culture and the high frequency of atheism and agnosticism in France, it is difficult to transpose the results of these studies in such framework.

In this context the aim of our study was to assess religion and spirituality among a French group of patients who attempted suicide and to evaluate the relationship between their spirituality/religiosity and their suicide attempt with a qualitative design. We also tried to understand how highly spiritual subjects still ended up having suicidal behaviours, knowing that spirituality/religiosity is usually associated with low risk of suicide. Finally, we performed an 18-month follow-up in order to assess the factors associated with recurrence of suicide attempts focusing on the role of spirituality.

Methods

The study was conducted at the department of psychiatry of "André-Mignot Hospital" in Versailles, France. Patients were selected in a crisis unit, where they were hospitalized following a suicide attempt. Suicide attempt was defined according to the international definition as a self-injury with the desire to end one's life that does not result in death.

Socio-demographic data, current psychiatric disorders, ICD codes (International Classification of Diseases) as well as information about drugs consumption were collected from medical records. Current psychiatric disorders were diagnosed by

patient's clinician. The SCID II (The Structured Clinical Interview) was used to assess Axis II Personality Disorders if such a disorder was suspected (First, Gibbon, Spitzer, Williams, & Benjamin, 1997). Dangerousness of suicide was assessed by a French score called "RUD" involving three dimensions: risk, emergency and dangerousness that allow classifying the risk of suicide in three degrees: low, moderate and high (Terra, 2010). Severity of depression at the time of recruitment was assessed using the (Beck Depression Inventory) BDI.

Participants were asked about their spirituality and religiosity practices. If they did not have religious practices, they were asked if they had any sense of religious belonging. Participants were asked about the religious affiliation they felt closest to (Catholicism, Protestantism, Judaism, Islam, Buddhism, Agnosticism or Atheism), and if they had participated in religious practices in childhood, adolescence and adulthood.

The scores obtained by patients on dimensions covered by the WHOQOL-SPRB were compared with those obtained in a sample from the reference French population (Mandhouj, Etter, Courvoisier, & Aubin, 2012).

We asked patients if their beliefs and religious practices helped them to cope with their current difficulties, how important they were in their daily life, how much they protected them from suicide drives and if they gave them purpose in life and hope. We also asked subjects if they felt despair, if they hoped a better life after death, and if clergy could help them face their current difficulties. All subjects were followed-up for 18 months to see if there was any recurrence of suicide attempt.

Results and Commentaries

Characteristics of Suicide Attempters

The mean age of the sample was 36.5 ± 12.9 years and most patients were females (69.3%). The majority was employed (83%) and half of them (51.1%) had an educational diploma allowing access to university. Only 20.5% were married, 22.7% were living together as a couple but not married and others were single or separated. Drug misuse was frequent: 26.1% featured alcohol misuse at the time of the study, 22.7% used marihuana, 64.8% were current smokers and 5.7% used illicit drugs.

These findings are in accordance with those reported in a population of suicide attempters in France (Courtet, 2010). Indeed, women showed a higher risk to commit suicide attempts than men. Also, being single appeared as a risk factor against suicide as well as a high socio-economic level.

Almost all patients suffered from depression. Indeed, 70.5% had a score of BDI $\geq$ 30 which corresponds to severe depression. Others patients suffered from a personality disorder (12.5% borderline personality disorder), an adjustment disorder (18.2%) or anxiety.

Many patients suffered from depression (70.5% of the sample featured a BDI $\geq$ 30). Also they featured a high frequency of drug misuse and alcohol

dependency. A meta-analysis (Arsenault et al., 2004) classified psychiatric diagnosis related to suicide. It showed that depression is the main risk factor (43.2% of suicide), followed by the misuse of drugs (25.7% of suicide).

Spirituality and Religiosity of Suicide Attempters

The majority of subjects' study was Catholics (45.5%) and the frequency of atheists was 33%. According to a recent opinion poll in France, there are 61% Catholics and 27.6% atheists. To note, the size of our sample does not allow assessing a possible difference across affiliations. It is known that most religions of the world condemned suicide, especially for the three monotheistic religions of Judaism, Christianity and Islam. In general, concerning the attitudes toward suicide, Catholics are less tolerant for suicide as compared with non-Catholics (Koenig et al., 2001). Historic literature brings some insight about this role of affiliation. In the nineteenth century, Durkheim found suicide rates to be higher in the Protestant compared with the Catholic cantons of Switzerland. He argued that stronger social cohesion and social integration among Catholics resulted in lower suicide rates in their communities. In Durkheim's Theorization, Judaism also had a protective effect against suicide, even stronger than Catholicism, because of its capacity to integrate individuals by means of communal ties and strong prohibition for suicide.

Table 24.1 shows that, all scores of the WHOQOL-SPRB were lower than those of the reference population (Mandhouj, Perroud, Hasler, Younes, & Huguelet, 2016).

Table 24.1 SRPB scores: a comparison between suicide attempters and the reference population

	Suicidal attempters (N = 88)		General population (N = 561)		χ^2	p
	N	%	N	%		
Gender (female)	61	69.32	366	66.06	0.36	0.548
	Mean	SD	Mean	SD	F (df)[a]	p
Age	36.51	12.91	42.19	11.61	17.5 (1/616)	<0.0001
Spiritual connectedness	7.92	4.59	10.08	5.39	10.8 (1/585)	0.001
Meaning of life	11.11	4.43	13.26	4.1	18.8 (1/579)	<0.0001
Awe	11.98	4.57	15.3	3.22	50.8 (1/530)	<0.0001
Wholeness and integration	7.86	3.59	12.25	3.89	73.9 (1/567)	<0.0001
Spiritual strength	8.47	4.27	11.78	4.85	32.8 (1/572)	<0.0001
Inner peace	7.56	3.76	12.12	3.79	88.7 (1/598)	<0.0001
Hope and optimism	9.1	4.14	13.33	3.1	111.2 (1/606)	<0.0001
Faith	7.71	4.76	9.7	5.55	10.6 (1/591)	0.001
Total SRPB score	8.97	3.52	12.22	3.29	58.5 (1/474)	<0.0001

[a]Data from Mandhouj et al. (2012)

When we compare the two groups: suicide attempters with "high" spirituality and those with "low" spirituality, we find that persons having a "high" spirituality featured a quite lower severity of depression as measured by the BDI, a higher use of cigarettes per day, a higher rate of unemployment, personality disorder, and adjustment disorder. They featured more alcohol dependency and less often cannabis use and were frequently prone to have experienced an adverse life event (marital conflict, loss of a job). The latter results may reflect the fact that for some subjects, an accumulation of risk factor, despite a high spirituality, could lead to the despair and suicide attempt, that happening without featuring high scores for depression. Hence, for them, the protective role of spirituality against suicide may have become limited due to cumulative risk factors and adverse events. The "low" spirituality group may be constituted of severely depressed subjects who may not benefit from spirituality for being protected against suicide.

Beliefs of Suicide Attempters

We asked patients if they believe or not in God. About half of the subjects (46.6%) said that they believed to a high power, 11.4% to a "philosophy", 14.8% to "moral values", 6.8% to a "spiritual strength" and 4.7% to "scientific theories", according to their own words. If 65.9% of suicide attempters did not feel the need to speak about their spirituality, 11.4% reported a need for speaking about this issue with their clergy, 5.7% with their psychiatrist and 17.1% with a friend or a member of their family.

Half of patients could not give a definition for the term "spirituality". Others confused it with faith, or gave other definitions such as "thing that is immaterial", "thing that concern spirit, that lead to a healthy spirit or to well-being".

Concerning the term religion, a third of the sample defined it as a "belief of God or higher power", when 11.4% thought that it was a choice, a lifestyle or a religious affiliation and 12.5% qualified religion as a politic, a "human invention, a manipulation of people or a dogma". We asked patients to identify the most important things that gave a meaning for their life. Family was cited by 60% of patients, followed by professional occupation (11.4%), "love" (15%). Seventeen percent of the suicide attempters reported having nothing to give them a meaning in their life. A third of the patients believed that there was nothing after death, a second third said they did not know, 10.2% imagined a new life or reincarnation, 8% hoped to find a dead person (parents, son, friends…) and 6% imagined to go to heaven or to hell.

Finally 62.5% of patients explained their suicidal attempts as a way to put an end to their suffering or to in order to find peace and serenity.

Recurrence of Suicide

The follow-up survey showed that 26.1% of subjects were re-hospitalized for a suicide attempt in the 18-month period after their inclusion in the study.

The WHOQOL-SPRB total score was significantly associated with recurrence of suicide attempt at follow-up (that being mainly driven by the dimension "meaning of life") with higher scores at baseline associated with lower risk of recurrence of suicide attempt. Also, being a non-smoker was associated with a lower recurrence of suicide attempt at follow-up. Having committed suicide is a well-known risk factor for subsequent suicidal behaviour; 30–40% of suicide attempters commit another attempt in the same year and 10% of them die in 10 years. Recurrence of suicide has been associated with gender, age and the presence of a mental disorder. Due to Our small sample, such factors were not found to be involved in suicide attempts recurrence. However, the WHOQOL-SPRB total score, mainly driven by the dimension "meaning of life" was significantly associated with recurrence of suicide attempt. To note, in the qualitative part of this study, subjects reported that the most important things that gave a meaning in their life were family (60%), professional occupation (11.4%) and love (15%). Seventeen percent of subjects found no meaning in their life.

Wong and Prem (1998) Pointed out that it is a common viewpoint that questions about meaning and purpose are too subjective and philosophical to be answered scientifically. They suggested that promotion of personal meaning may be effective in addressing social problems, such as drug addiction, alcoholism and suicide. Wong proposed a culturally appropriate meaning-centred counselling, a hybrid between existential-humanistic psychology and cognitive-behavioural therapy. Lester offered a different perspective in regard to the role of meaning in suicidal behaviour stating that, for some suicidal individuals, suicide is a search for spirituality, for God, for a meaning of life and for a rebirth (Lester, 1998). Suicide, then, may seem a viable solution to relieve this distressing state of being (Tacey, 2005).

Conclusion

This study describes the role of religion and meaning on suicide, in the context of various psychopathological backgrounds. Obviously, religion and spirituality may influence the attitudes and beliefs people have toward experience of distress and illness and the way they cope with it. This issue should be addressed by clinicians when facing patients with suicidal risk.

In particular, supporting religious beliefs that patients find useful in coping with stress and which may also reduce anger could be a useful tool in a therapeutic process that targets suicide prevention (Dervic et al., 2004; Koenig et al., 2001).

Individuals who experience a deeper and broader sense of meaning and purpose enjoy greater life satisfaction, higher levels of psychological and physical

well-being, and positive mental health (Reker, 1994) whereas, people whose lives lack meaning and purpose, experience feeling of emptiness or a lack of direction, have difficulties in making sense out of their existence (Petersen & Roy, 1985). In this perspective, the question is not why depressed patients want to commit suicide, but rather why they want to live. Our results showing meaning in life as a predictor of future suicide attempts underscore the need of addressing this topic when assessing and treating patients in severe conditions.

Spirituality and Religion Among Detainees

Introduction

About 9 million people are imprisoned worldwide including more than 2 million in the United States, 70,000 in the United Kingdom, and 75,200 in France in 191 establishments for the deprivation of liberty (CEMKA-EVAL, 2004; Fazel & Danesh, 2002).

Several studies have shown that prisoners are in poor general health and have high rates of mental disorders compared with the general population (Fazel & Danesh, 2002; Fazel & Lubbe, 2005; Singleton, Bumpstead, O'Brien, Lee, & Meltzer, 2003).

Detention is a stressful situation which can trigger adaptation disorders or lead to relapses of preexisting psychiatric disorders. The suicide rate in prisons has increased dramatically since 1980s and now represents the third leading cause of death in US prisons (Anasseril, 2006). The most important risk factors for suicide are mental illness, hopelessness, drug misuse, and the prison environment itself (Anasseril, 2006; Fernander, Wilson, Staton, & Leukefeld, 2004). Many studies have shown that the prevalence of mental disorders is higher among inmates than in the general population (Shaw, Baker, Hunt, Moloney, & Appleby, 2004). A systematic review of psychiatric surveys of prison populations (including 23,000 prisoners) in 12 Western countries (Fazel & Danesh, 2002) found that about one in seven prisoners suffered from psychotic disorders or major depression and about one in two male prisoners had antisocial personality disorder. Age-standardized suicide rates among male prisoners are between 5 and 8 times higher than in the general population (Blaauw, Kerkhof, & Hayes, 2005). France has the highest suicide rate in Europe, with 37 suicides for 10,000 prisoners between 2006 and 2008 (Dammer, 2002). The most recent study conducted in 2004 found that 24% of prisoners suffered from a psychotic disorder (including 8% who had schizophrenia), 39% suffered from depression, mania, or another mood disorder, and 32% had a personality disorder (CEMKA-EVAL, 2004). Spirituality and religiousness had been widely demonstrated to be an important coping resource for facing stressful life events.

Religious communities promote moral and ethical teaching that discourages illegal conduct (Koenig et al., 2001). In France, religious congregations have played a crucial role in prisons and confinement institutions since the seventeenth century trying to implement and promote the Christian ethic and education (Foucault, 1998). Religion has been considered as a deterrent to crime because it encourages the development of moral character and conformity to societal norms and values. To date, however, studies remain inconclusive about the association between religiousness and delinquency. Most studies showed less juvenile delinquency and less adult criminality among the more religious (Koenig et al., 2001). In addition, many studies have suggested that SR may reduce the incidence of prison deviance (Clear & Sumter, 2002; Koenig, 1995).

Koenig (1995) found that 64% of detainees indicated that religion was very important for them. For one out of three, it was the most important coping mechanism. It has been shown that religious involvement may serve to mitigate the psychological and physical deprivations created by imprisonment (Dammer, 2002; Fernander et al., 2004) and to contribute to a better adjustment to prison and a reduction in episodes of confinement (Clear & Sumter, 2002; Eytan, 2011; Kerley, Matthews, & Blanchard, 2005; Kerley & Copes, 2008). SR may also reduce aggression, hostility, acting out, and harming self or others (Scarnati, Madrey, & Wise, 1991). Suicide is an omnipresent preoccupation in detention. In France, there were 37 suicides for 10,000 detainees between 2006 and 2008. This rate is the highest in European countries (Duthé, Hazard, Kensey, & Pan Ké Shon, 2009).

Little is known about the potential role of SR in mental health and suicide prevention in detained individuals. In a recent meta-analysis on this issue (Eytan, 2011), the author concluded that SR was associated with lower frequency and severity of depressive episodes, but did not obtain any concrete evidence that SR may reduce suicide rate. The aim of this study was to describe the role of SR coping among detainees in a French short-stay prison, from both a quantitative and qualitative perspective. We have also assessed the changes in their beliefs and practices since incarceration, to test the hypothesis that the stress associated with incarceration increases religiousness and hence SR coping.

Methods

The study was conducted at the short-stay prison of *Bois d'Arcy* in France. It is a prison for males, where a regional medical psychological service (RMPS) related to the regional psychiatric hospital is provided. Detainees can consult psychiatrists or psychologists at the centre at their own request or are referred by general practitioners, prison warders or by lieutenants when they observe psychological symptoms.

Author worked as a psychiatrist in the RMPS and collected the data and met all detainees selected. Thirty patients were included in the study.

Socio-demographic data were collected as well as information on type of crime and number of previous incarcerations. Current psychiatric disorders were diagnosed by the Mini International Neuropsychiatric Interview (MINI; Sheehan et al., 1998) for *Diagnostic and Statistical Manual of Mental Disorders* (4th ed.; *DSM-IV*; American Psychiatric Association, 1995) Axis I and the Structured Clinical Interview (SCID-II) for *DSM-IV* Axis II for personality disorders (First et al., 1997).

Participants were asked about their spirituality and religiosity practices. If they did not have religious practices, they were asked if they had any sense of religious belonging. Participants were asked about the religious affiliation they felt closest to (Catholicism, Protestantism, Judaism, Islam, Buddhism, Agnosticism or Atheism), and if they had participated in religious practices in childhood, adolescence and adulthood and during incarceration.

The scores obtained by detainees for dimensions covered by the WHOQOL-SPRB were compared with those obtained in a sample from the reference French population. In addition, we asked detainees if their beliefs and practices helped them to cope with their current difficulties, if they were important in their daily life and in preventing future offences and protecting them from suicide and if they gave them meaning in life or induced guilt. We also asked if the representative of their religion could help them to face current difficulties and to prevent future offences. They were also asked to give definitions of the following words: meaning of life, spirituality, religion, faith and representation of God.

Results and Commentaries

The mean age of our sample was 31.5 ± 9.6 years. The majority was of low socio-economic background (76.6%) or unemployed (16.6%) and most did not have an educational diploma giving potential access to university (83.3%). The mean number of incarcerations was 3.23 ± 3.57. The main offences were theft, drug trafficking, driving under the influence of alcohol and interpersonal violence. Ten detainees suffered from a mood disorder (33.3%), 3 (10%) had an adaptation disorder (i.e. trauma related to the incarceration), 3 (10%) a sleep disorder and 2 (6.7%) pathological gambling. Drug misuse was quite frequent: only 7 (23.3%) subjects had never misused drugs, 10 (33.3%) had alcohol dependency at the time of the incarceration, 12 (40%) used marihuana and 23 (76.7%) were current smokers.

Spirituality and Religiousness

The majority of subjects were Muslims (50%), while 23.3% were Catholics, 3.3% Jewish, 10% Agnostics, 10% Atheists and 3.3% Buddhists. More than half of the detainees described had observed religious practices during childhood (53.3%).

Table 24.2 SRPB scores: a comparison between detainees and the general population

Spiritual dimensions	Detainees	General population	*p*
	−30	−561	
Spiritual connectedness	11.80 ± 6.08	10.08 ± 5.39	0.09
Meaning of life	5.18 ± 4.01	13.26 ± 4.10	<0.000001
Awe	12.67 ± 3.06	15.30 ± 3.22	0.00001
Wholeness and integration	10.37 ± 3.82	12.25 ± 3.89	0.01
Spiritual strength	11.77 ± 4.82	11.78 ± 4.85	0.989
Inner peace	10.33 ± 3.11	12.12 ± 3.78	0.011
Hope and optimism	11.20 ± 3.23	13.33 ± 3.10	0.0003
Faith	12.23 ± 5.25	9.70 ± 5.57	0.015
Total SRPB score	11.16 ± 3.13	12.15 ± 3.24	0.107

Data from Mandhouj et al. (2012)

Only 40% of the latter continued these practices during adolescence. Fifty percent stated that they had observed religious practices in prison.

Eighty percent of the study sample had a religious affiliation and 50% were currently practicing a religion. These rates are higher than those found in the general French population, where 27–29% states that they have no religion (Atlas of Religions, 2007). This may be explained by the characteristics of prisoners in France, 20% of whom do not originate from France but from abroad, particularly North Africa (Baux, 2010).

The main findings were that some religious dimensions (as measured by WHOQOL-SPRB) differed from those of the general population: the faith dimension was higher for detainees while scores for Meaning of life, Hope and Optimism and Inner peace were significantly lower (see Table 24.2) (Mandhouj, Aubin, Amirouche, Perroud, & Huguelet, 2014).

Perception of Religion

Twelve detainees (40%) described spirituality and religiosity as an important way of coping. It could help them tolerate incarceration and stressful events, achieve inner peace, show altruism and gain the respect of others. Conversely, 7 (23.3%) detainees had a negative view of religion, arguing that it can be the cause of wars and violence or a frightening experience or a force that demands their submission against their will. Eleven detainees (36.7%) had a neutral opinion (or no opinion at all) and viewed religion as a simple issue of membership (Table 24.3).

Table 24.3 Representations of religion

Positive representation $n = 12$ (40%)	Neutral representation $n = 11$ (36.7%)	Negative representation $n = 7$ (23.3%)
Religion is the most important thing in my life ($n = 2$)	Religion is simply an issue of membership ($n = 3$)	Religion is the principal cause of wars on Earth ($n = 1$)
Religion implies helping others ($n = 6$)	Religion is a free choice ($n = 2$)	Religion is frightening ($n = 1$)
Religion leads to altruism and to respect for others ($n = 2$)	Religion is a personal relationship between God and individuals ($n = 2$)	I avoid thinking about such disturbing topics ($n = 1$)
Religion helps me to find inner peace ($n = 2$)	I never asked myself such questions ($n = 1$)	Religion is submission ($n = 1$)
Religion helps me to cope with stressful events ($n = 4$)	There is only one God, all the rest is not important ($n = 1$)	Religion is a bad heritage ($n = 1$)
Religion helps me to cope with incarceration ($n = 3$)	Beliefs are beneficial for some and harmful for others ($n = 1$)	Religion is used by some against humanity ($n = 1$)
Religion defines my limits ($n = 1$)	I did not have any religious education ($n = 1$)	Reconciling different religions is the most complicated thing on Earth ($n = 1$)
Religion makes me optimistic ($n = 1$)		

Data from Mandhouj et al. (2014)

Changes Since Incarceration

Eleven subjects (36.7%) reported that their beliefs and practices did not change in prison. A few (6.6%) detainees reported that they had lost their trust in God or feared his vengeance. Others (10%) reported that they felt guilty and were seeking forgiveness. While some detainees (43.3%) found it easy to practice in prison (because of more free time and lack of alcohol/drugs abuse) and planned to undertake an in-depth reading of the Holy Bible, a few (6.6%) had stopped their religious practices, reportedly as a result of depressive mood. Three detainees said they had converted to Islam (two detainees) or Buddhism (one detainee) during their incarceration. Some detainees (6.6%) were trying to convert others and reported that they found meaning in their incarceration in this way. For many detainees (43.3%), religion was the most important topic they discussed during exercise periods; even though some found it difficult to reconcile different religions (they felt that other detainees or warders discriminated against them because of their beliefs).

Meaning of Life

"Meaning of life" scores were found to be lower, as were the scores for Awe, Hope, Optimism and Inner peace, although detainees scored more highly for Faith. Furthermore, SR and personal beliefs seemed to play an important role in coping with current difficulties and in preventing suicide and further offence for the majority of participants.

When asked how they would define the meaning of life, 36.7% of detainees reported a lack of meaning in their life. More than the half (53.3%) stated that having a family, educating and loving their children would be the most important purpose of their life. Finding inner peace, helping others and finding a job were the principal answers given by detainees (26.6%). A few of them (10%) thought that human beings should spend their life protecting the Earth.

Our findings support the view that, for some detainees at least, spirituality and religiosity may play a role in reducing suicidal risk. Hence this issue should not be neglected by either clinicians or by researchers. Spirituality and religiosity should be assessed and explored, in particular for patients with risk factors for suicide or suicidal ideation and for whom lack of meaning in their life is at the core of their suffering.

With regard to the crucial issue of meaning, more than one-third of detainees stated that they found no meaning in life. Having a family, educating and loving their children, finding an inner peace, helping others and finding a job were the principal wishes cited by detainees.

A minority of detainees stated that God did not exist. For the others, He was described as the creator of the world. God was most often considered as loving, caring and forgiving, although a small minority felt that he had punished and abandoned them. Allen, Phillips, Roff, Cavanaugh, and Day (2008) found that older male inmates who experienced a higher number of daily spiritual experiences and felt that they had not been abandoned by God reported less desire for hastened death and fewer symptoms of depression. Owing to the sample size, it was impossible to look for differences between those who conceive God as loving and forgiving and those who conceive him as vengeful and wrathful. Flannelly, Galek, Ellison, and Koenig (2010) showed that those who considered God as a loving, caring, forgiving and approving figure were more likely to report positive mood and life satisfaction, whereas people who considered that God had punished or abandoned them tended to experience more negative moods and lower quality of life.

We found that only few detainees experienced a religious conversion during their incarceration. It should be noted that two detainees were trying to convert others and reported that this gave meaning to their incarceration. This phenomenon has been previously reported, especially by Dix-Richardson, 2002 who showed that it has been common practice for African-American male inmates to convert to Islam as part of the prison experience. The annual number of prison converts is estimated

at 30,000. This observation did not apply to African-American women who view Islam as a religion that subjugates women.

We found that higher scores for Meaning of life, Spiritual connectedness and Faith were associated in detainees with the conviction that spiritual beliefs could prevent future offences. Parsons and Warner-Robbins (2002) studied the factors that support women's successful transition to the community following incarceration. They found that the dominant factor was spiritual beliefs and practices. Although no questions were asked about SR, 96% of women described the important role that God played in their lives. Enache et al. (2009) asked female detainees about the foundations of hope for a better future after release. Results showed that the development of moral, family, social and spiritual values was beneficial and increased hopes of social reintegration.

In conclusion, our results suggest that spirituality and religiousness could be an important coping resource for some detainees. In particular spirituality and religiousness may help to prevent suicide and to achieve a successful transition to the community following incarceration, hence potentially preventing repeated offences. Before these results are confirmed by larger, longitudinal or case control studies, we wish to emphasize the need for better collaboration between custodial administration, clinical staff and religious representatives so as to overcome problems with reconciling different religions and to help detainees sustain the help they get from SR. In this regard, suicide prevention and mental health promotion programs among detainees should involve a comprehensive approach, which takes the spiritual dimension into account.

Conclusion

Every human being on earth wants to have a high level of psychological and physical well-being, a positive mental health, a feeling of inner peace and a meaning of life. If health professionals neglect this nature of the human being and focus only on the material aspect, the biological character of the diseases, they can ignore deep needs of their patients. Spiritual and religious beliefs encourage positive feelings and values—such as love, honesty, joy, peace, hope, patience, generosity, forgiveness, kindness, goodness, faithfulness, compassion, etc. All these values—are beneficial and have positive effects on physical and psychological health and on social interactions. However, several negative effects are attributed to spiritual and religious beliefs: rigidity, torture, wars, murders, hatred, prejudice, etc. These aspects have the consequences of separating populations, dissociating communities, promoting exclusion and, of course, can have negative effects on health in some contexts.

A positive spirituality could reduce the lack of self-esteem, self-confidence and hopeless. It can also reduce stress and give meaning to life. Spiritual practices can reduce the isolation of the patient (collective prayers, visits of representatives of religion, etc.). Many patients want that their doctors take into account their spiritual needs and treat them as "a whole being" (taking into account the physical, emotional, social and spiritual dimensions). Many clinicians believe that spiritual interventions could help some patients, but have difficulty to discuss with them about these topics. Clinicians should know a minimum about the religious and spiritual activities of their patients and encourage resources that favour a better psychological and social functioning. Spiritual beliefs and values are part of the patient's cultural background and their consideration in mental health may help to pursue the important aim of offering culturally sensitive prevention and intervention strategies.

References

Allen, R. S., Phillips, L. L., Roff, L. L., Cavanaugh, R., & Day, L. (2008). Religiousness/spirituality and mental health among older male inmates. *The Gerontologist, 48*(5), 692–697.

American Psychiatric Association. (1995). Practice guidelines for the treatment of patients with substance abuse disorders. *American Journal of Psychiatry 152*:1–50.

Anasseril, E. D. (2006). Preventing suicide in prison: A collaborative responsibility of administrative, custodial and clinical staff. *Journal of American Academy of Psychiatry and Law, 34*(2), 165–175.

Arsenault-Lapierre, G., Kim, C., & Turecki, G. (2004). Psychiatric diagnoses in 3275 suicides: A meta-analysis. *BMC Psychiatry, 4*(1), 37.

Atlas of Religions (2007). The life and the world. Review. *Inter Edition,* 122–123.

Baetz, M., Larson, D. B., Marcoux, G., Jokic, R., & Bowen, R. (2002). Religious psychiatry: The Canadian experience. *The Journal of Nervous and Mental Disease, 190*(8), 557–559.

Bagley, C., & Ramsey, R. F. (1989). Attitude toward suicide, religious values and suicidal behaviour: Evidence from a community survey. In R. F. W. Diekstra, R. Maris, S. Platt, A. Schmidtke, & G. Sonneck (Eds.), *Suicide and its prevention: The role of attitude and imitation* (pp. 78–90). Leiden, Netherlands: E. J. Brill.

Baux, D. (Les condamnations en 2010). *Rapport du Ministère de la Justice et des Libertés* (p. 217). Service support et moyens du ministère, Sous-direction de la Statistique et des Études.

Blaauw, E., Kerkhof, A. J., & Hayes, L. M. (2005). Demographic, criminal, and psychiatric factors related to inmate suicide. *Suicide and Life-Threatening Behaviour, 35*(1), 63–75.

Bostwick, J. M., & Rummans, A. T. (2007). Spirituality, depression and suicide in middle age. *Southern Medical Journal, 100*(7), 746–748.

CEMKA-EVAL. (2004). Enquête de prévalence sur les troubles psychiatriques en milieu carcéral. Étude pour le Ministère de la Santé (Direction Générale de la Santé) et le Ministère de la Justice (Direction de l'Administration Pénitentiaire) Décembre 2004.

Clear, T. R., & Sumter, M. T. (2002). Prisoners, prison, and religion: Religion and adjustment to prison. *Journal of Offender Rehabilitation, 35*(3–4), 125–156.

Courtet, P. (2010). *Suicides et tentatives de suicide*. Paris: Médecine Sciences Flammarion, Éditions Lavoisier.

Dammer, H. R. (2002). The reasons for religious involvement in the correctional environment. *Journal of Offender Rehabilitation, 35*(3–4), 35–58.

Dervic, K., Oquendo, M. A., Grunebaum, M. F., Ellis, S., Burke, A. K., & Mann, J. J. (2004). Religious affiliation and suicide attempt. *American Journal of Psychiatry, 161*(12), 2303–2308.

Dix-Richardson, F. (2002). Resistance to conversion to Islam among African American women inmates. *Journal of Offender Rehabilitation, 35*(3–4), 109–126.

Durkheim, E. (1897). *2002 suicide. A study in sociology*.

Duthé, G., Hazard, A., Kensey, A., & Shon, J. L. P. K. (2009). Suicide en prison: La France comparée à ses voisins européens. *Population et sociétés,* (462).

Enache, A., Pasca, V., Luta, V., Ciopec, F., Ursachi, G., Radu, D., … & Mutiu, F. (2009). Aspects regarding the hope for successful reintegration of female detainees. *Legal Medicine, 11*, S382–S385

Eytan, A. (2011). Religion and mental health during incarceration: A systematic literature review. *Psychiatric Quarterly, 82*(4), 287–295.

Fazel, S., & Danesh, J. (2002). Serious mental disorder in 23,000 prisoners: A systematic review of 62 surveys. *The Lancet, 359*(9306), 545–550.

Fazel, S., & Lubbe, S. (2005). Prevalence and characteristics of mental disorders in jails and prisons. *Current Opinion in Psychiatry, 18*(5), 550–554.

Fernander, A., Wilson, J. F., Staton, M., & Leukefeld, C. (2004). An exploratory examination of the spiritual well-being scale among incarcerated black and white male drug users. *International Journal of Offender Therapy and Comparative Criminology, 48*(4), 403–413.

Ferrell, B. R., Dow, K. H., & Grant, M. (1995). Measurement of the quality of life in cancer survivors. *Quality of Life Research, 4*(6), 523–531.

Fetzer, I. (2003). *Multidimensional measurement of religiousness/spirituality for use in health research: A report of the Fetzer Institute/National Institute on Aging Working Group*. Kalamazoo, MI: John E. Fetzer Institute.

First, M. B., Gibbon, M., Spitzer, R. L., Williams, J. B. W., & Benjamin, L. S. (1997). *Structured clinical interview for DSM-IV axis II personality disorders, (SCID-II)*. Washington: American Psychiatric Press Inc.

Flannelly, K. J., Galek, K., Ellison, C. G., & Koenig, H. G. (2010). Beliefs about god, psychiatric symptoms, and evolutionary psychiatry. *Journal of Religion and Health, 49*(2), 246–261.

Fleming, J., & Ledogar, R. J. (2008). Resilience and indigenous spirituality: A literature review. *Pimatisiwin, 6*(2), 47–64.

Foucault, M. (1998). Surveiller et punir. Ed Gallimard.

Fournier, R. R. (1999). Spirituality as a resource for suicide prevention: A response to a fellow suicidologist. *American Journal of Pastoral Counseling, 2*(1), 49–74.

Galanter, M., Larson, D., & Rubenstone, E. (1991). Christian psychiatry: The impact of evangelical belief on clinical practice. *American Journal of Psychiatry, 148*(1), 90–95.

Goldney, R., Winefield, A., Saebel, J., Winefield, H., & Tiggeman, M. (1997). Anger, suicidal ideation, and attempted suicide: A prospective study. *Comprehensive Psychiatry, 38*(5), 264–268.

Goldston, D. B., Molock, S. D., Whitbeck, L. B., Murakami, J. L., Zayas, L. H., & Hall, G. C. N. (2008). Cultural considerations in adolescent suicide prevention and psychosocial treatment. *American Psychologist, 63*(1), 14–31.

Huguelet, P., Mohr, S., Borras, L., Gillieron, C., & Brandt, P. Y. (2006). Spirituality and religious practices among outpatients with schizophrenia and their clinicians. *Psychiatric Services, 57*(3), 366–372.

Kerley, K. R., & Copes, H. (2008). "Keepin' my mind right": Identity maintenance and religious social support in the prison context. *International Journal of Offender Therapy and Comparative Criminology, 53*(2), 228–244.

Kerley, K. R., Matthews, T. L., & Blanchard, T. C. (2005). Religiosity, religious participation, and negative prison behaviours. *Journal for the Scientific Study of Religion, 44*(4), 443–457.

King, D. E., Sobal, J., Haggerty, J., III, Dent, M., & Patton, D. (1992). Experiences and attitudes about faith healing among family physicians. *Journal of Family Practice, 35*(2), 158–163.

Koenig, H. G. (1995). Religion and older men in prison. *International Journal of Geriatric Psychiatry, 10*(3), 219–230.

Koenig, H. G. (2009). Research on religion, spirituality, and mental health: A review. *The Canadian Journal of Psychiatry, 54*(5), 283–291.

Koenig, H. G., McCullough, M. E., & Larson, D. B. (2001). *Handbook of religion and health*. New York, NY: Oxford University Press.

Kok, L. P. (1988). Race, religion and female suicide attempters in Singapore. *Social Psychiatry and Psychiatric Epidemiology, 23*(4), 236–239.

Larimore, W. L., Parker, M., & Crowther, M. (2002). Should clinicians incorporate positive spirituality into their practices? What does the evidence say? *Annals of Behavioural Medicine, 24*(1), 69–73.

Lester, D. (1998). Suicide as a search for spirituality. *American Journal of Pasotoral Counseling, 1,* 41–47.

Mandhouj, O., Aubin, H. J., Amirouche, A., Perroud, N. A., & Huguelet, P. (2014). Spirituality and religion among French prisoners: An effective coping resource? *International Journal of Offender Therapy and Comparative Criminology, 58*(7), 821–834.

Mandhouj, O., Etter, J. F., Courvoisier, D., & Aubin, H. J. (2012). French-language version of the world health organization quality of life: Spirituality, religiousness and personal beliefs instrument. *Health and Quality of Life Outcomes, 10*(1), 39.

Mandhouj, O., Perroud, N., Hasler, R., Younes, N., & Huguelet, P. (2016). Characteristics of spirituality and religion among suicide attempters. *The Journal of Nervous and Mental Disease, 204*(11), 861–867.

McCullough, M. E., Hoyt, W. T., Larson, D. B., Koenig, H. G., & Thoresen, C. (2000). Religious involvement and mortality: A meta-analytic review. *Health Psychology, 19*(3), 211–222.

Miller, W. R. (1999). *Integrating spirituality into treatment: Resources for practitioners*. Washington, DC: American Psychological Association.

Mohr, S., Gillieron, C., Borras, L., Brandt, P. Y., & Huguelet, P. (2007). The assessment of spirituality and religiousness in schizophrenia. *Journal of Nervous and Mental Disease, 195*(3), 247–253.

Neeleman, J., & Persaud, R. (1995). Why do psychiatrists neglect religion? *The British Journal of Medical Psychology, 68*(2), 169–178.

Nicholson, A., Rose, R., & Bobak, M. (2009). Association between attendance at religious services and self-reported health in 22 European countries. *Social Science and Medicine, 69*(4), 519–528.

Nicholson, A., Rose, R., & Bobak, M. (2010). Associations between different dimensions of religious involvement and self-rated health in diverse European populations. *Health Psychology, 29*(2), 227–235.

O'Connor, A. P., Wicker, C. A., & Germino, B. B. (1990). Understanding the cancer patient's search for meaning. *Cancer Nursing, 13*(3), 167–175.

Pargament, K. (1997). *The psychology of religion and coping: Theory, research, practice*. New York: The Guilford Press.

Parsons, M. L., & Warner-Robbins, C. (2002). Factors that support women's successful transition to the community following jail/prison. *Health Care for Women International, 23*(1), 6–18.

Pescosolido, B. A., & Georgianna, S. (1989). Durkheim, suicide, and religion: Toward a network theory of suicide. *American Sociological Review, 54*(1), 33–48.

Peteet, J. (2007). Suicide and spirituality: A clinical perspective. *Southern Medical Journal, 100* (7), 752–754.

Petersen, L. R., & Roy, A. (1985). Religiosity, anxiety, and meaning and purpose: Religion's consequences for psychological wellbeing. *Review of Religious Research, 27,* 49–62.

Reker, G. T. (1994). Logotheory and logotherapy: Challenges, opportunities, and some empirical findings. *International Forum for Logotherapy, 17*(1), 47–55.

Scarnati, R., Madrey, M., & Wise, A. (1991). Religious beliefs and practices among most-dangerous psychiatric inmates. *Forensic Reports, 4*(1), 1–16.

Shaw, J., Baker, D., Hunt, I. M., Moloney, A., & Appleby, L. (2004). Suicide by prisoners, National clinical survey. *British Journal of Psychiatry, 184,* 263–267.

Sheehan, D. V., Lecrubier, Y., Sheehan, H., Amorim, P., Janavas, J., Weiller, E., … Dunbar, G. C. (1998). The MINI-International Neuropsychiatric Interview (MINI): The development and validation of a structured diagnostic psychiatric interview for DSMIV and ICD-10. *Journal of Clinical Psychiatry, 59*(Suppl. 22–23), 34–57.

Singleton, N., Bumpstead, R., O'Brien, M., Lee, A., & Meltzer, H. (2003). Psychiatric morbidity among adults living in a private households, 2000. *International Review of Psychiatry, 15*(1–2), 65–73.

Sloan, R. P., Bagiella, E., & Powell, T. (1999). Religion, spirituality, and medicine. *Lancet, 353* (9153), 664–667.

Stark, R., Doyle, D. P., & Rushing, J. L. (1983). Beyond Durkheim: Religion and suicide. *Journal for Scientific Study of Religion, 22*(2), 120–131.

Sulmasy, D. P. (2009). Spirituality, religion, and clinical care. *CHEST Journal, 135*(6), 1634–1642.

Swinton, J. (2001). *Spirituality and mental health care: Rediscovering a 'forgotten' dimension*. London, New York: J. Kingsley Publishers.

Tacey, D. (2005). *Spiritual perspectives on suicidal impulses in young adults. Spirituality and psychological health* (pp. 107–128). Colorado Springs: Colorado School of Psychology Press.

Terra, J. L. (2010). Comment intervenir auprès d'une personne en cas de crise suicidaire? In P. Courtet (Ed.), *Suicides et tentatives de suicide* (pp. 283–287). Paris: Médecine Sciences Flammarion, Éditions Lavoisier.

WHOQOL, SRPB Group. (2006). A cross-cultural study of spirituality, religion, and personal beliefs as components of quality of life. *Social Science and Medicine, 62*(6), 1486–1497.

Wong, P. T., & Prem, S. F. (1998). *The human quest for meaning: A handbook of psychological research and clinical applications*. Mahwah, NJ, USA: Lawrence Erlbaum Associates.

Chapter 25
Crisis Theory and Intervention Strategies as a Way to Mitigate Suicide Risk

Monique Séguin and Nadia Chawky

Evolution in the Field of Crisis Intervention

In the 1960s, the first crisis intervention services were often outpatient community clinics proposed to individuals who were dealing with a psychosocial event. Today, crisis intervention practices are available in a variety of settings: crisis help lines, mobile crisis intervention teams (who may work in the community, with police departments, etc.), mental health crisis intervention services and critical incident stress management teams. We also observe a diversity in the modalities and the duration of crisis intervention according to the proposed method of the intervention, including: single telephone interventions, brief outpatient interventions, short or medium term interventions in hospital settings, brief psychotherapy interventions, Internet interventions, etc. In the wake of this growing interest, crisis intervention practices have expanded and are now offered in various crisis situations, including situations of trauma, of grief/loss/accidents, of marital or family violence, of psychiatric emergencies, of natural disasters, etc. All these practices unfold under the same characterisation of crisis intervention, suggesting uniformity in the assessment of a crisis and in clinical practice, while in reality we are observing an expanded application of the crisis model in various clinical settings.

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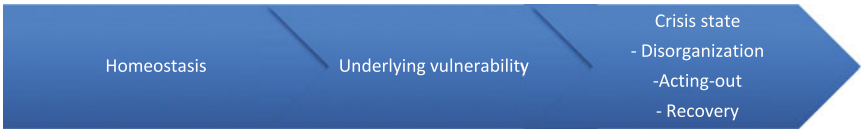
The Nature of Crisis

Caplan (1964) first articulated the crisis theory in the 1960s as an adaptation of the public health theory. This author considers that individuals constantly aim to maintain a state of homeostatic balance (a state of equilibrium) until they are stressed by an external event that precipitates them in a state of crisis. In a crisis state, individuals are overwhelmed, their usual coping mechanisms fail to re-establish homeostasis, and the distress provoked by the events leads them to a state of disorganization and impairment (Hoff, 1995). However, some individuals will use their support system or successfully engage in problem-solving activities, which will allow them to overcome the crisis and thus restore homeostatic balance (Aguilera, 1998; Baldwin, 1979; Caplan & Caplan, 2000; Caplan, 1989; Jacobson, 1980). The desired result is personal growth and the development of new coping skills that will enable these individuals to avoid crises in the future (Aguilera, 1998; Caplan, 1989).

Other authors have suggested that an underlying vulnerability is an intermediary state between homeostasis and a state of crisis. Therefore, the presence of that vulnerability, mainly caused, either by adjustment problems or by mental illness, may be the proximal precipitating factor in a crisis (Séguin, Leblanc, & Brunet, 2006). For Ball (2003; Ball, Links, Strike, and Boydell, 2005) the primary trigger of a crisis among individuals with mental health problems is the intrinsic vulnerability associated to mental health issues. In some cases, the underlying vulnerability may be a more permanent state, especially among individuals with chronic mental health problems who have limited coping abilities, thus rendering them less equipped to deal with a stressful life event.

The state of crisis is characterized by a period of extreme disorganization (Kirk, 1993). According to Caplan (1964), this period of crisis evolves in intensity throughout three main phases: a phase *of disorganization,* a phase of *acting-out* and a phase of *recovery.* During the phase of *disorganization,* the individual makes many attempts to find an acceptable solution to the problem in an effort to gradually restore a state of equilibrium. If the individual is unable to find de-escalation strategies during this phase, there is a further rise in tension, which may become unbearable, thus increasing the risk of triggering an *acting-out*. An *acting-out* may take the form of running away, self-harm (suicide attempt) or aggressive behaviour

directed at others. Schneidman (1993) introduced the term "psychache" describing a real or perceived situation in which the internal distress is so acute, that one's only perceived way of alleviating this state is through ending one's life.



Some crisis theories suggest that an individual cannot sustain a level of acute tension for an extended amount of time. While the duration of the crisis state may vary greatly, some authors estimate that it may last between six and eight weeks (Aguilera, 1998; Burgess & Baldwin, 1981; Roberts, 2002). However, there is no empirical evidence supporting that suggested duration. This proposal is based on stress-related studies, which have observed that human cells can resist for a limited time before being damaged when subjected to significant stressors due to injury or illness (Selye, 1956). Thus, the stress theorists have applied this knowledge, resulting from stress responses on human cells, to explain a psychological process. However, no empirical study has demonstrated the existence of this duration for psychological stress.

Regardless of the duration, when the *disorganization phase* persists for a length of time, the intensity of the stress causes an unbearable state of distress leading to the point where the individual considers *acting-out* in order to alleviate the tension and suffering. The *acting-out* becomes a means to reduce the intense tension for the individual who was unable to find de-escalation strategies.

During the *recovery phase,* there is a release of the tension. The person may feel tired and empty, may have a new perception of the situation and be more receptive to receiving help.

Thus, the description of this generic model allows to conceptualize the development of a crisis process as a progression, starting from a state of equilibrium to a state of vulnerability, leading to a state of crisis.

In general, crises have common characteristics including the presence of a disturbing event, the overflow of adaptive capacity and the inability to find a solution to restore equilibrium. However, we must also recognize that every crisis comes at a particular moment in the life of an individual, with its own characteristics, including accumulated difficulties, environmental context, psychiatric vulnerability, etc. So all individuals will not experience crises in the same way and do not have the same personal and environmental resources to cope with them. The concept of crisis remains an indicator of the intensity of the disruption, without direct reference to a specific pathology.

Principles of Crisis Intervention

While there is no single model of crisis intervention, there is common agreement that an intervention's primary goals are: To reduce the acute distress experienced by the clients, to restore functioning and to prevent acting-out or a suicide attempt (Caplan & Caplan, 2000; Hoff, 1995; Roberts & Yeager, 2009). Therefore, an intervention is performed according to the following main principles: immediacy, brevity, directivity and active position of the clinician.

Immediacy

In effect, crisis intervention generally occurs soon after a stressful event and, in some cases, at the very moment the crisis appears. The need to intervene immediately implies that the modalities of intervention and the places where the interventions are performed may be unusual. Thus, a crisis intervention is not necessarily done in an office that provides a clear and reassuring therapeutic setting. For example, an intervention may take place face to face, over the telephone, via the Internet or in places such as crisis centers, mental health clinics, social service centers, psychiatric care units, or right on location where an individual threatens to commit suicide or a homicide, or even on the scenes of a disaster (Séguin, 2001).

Brevity

The crisis intervention model has often been compared to brief therapy, as some of the principles of intervention are similar, such as the brief duration of the therapy and the focus being on the problem underlying the complaint (Roberts, 2005; Shazer, 1985). Nevertheless, the intervention objectives of these two models differ. Brief therapy aims to eliminate or reduce the presence of symptoms by attempting to understand the dynamics of certain conflicts, whereas the crisis intervention model aims to reduce the level of intense tension and restore the level of functioning prior to the crisis (Flannery & Everly, 2000). The clinical challenge in crisis intervention is to help the individual to restore, in a short period, a sense of control that gives him hope that he is able to resolve the crisis. Crisis intervention also aims to encourage a client to engage in a treatment plan and continue in a long-term therapeutic process (Oliva & Compton, 2008).

Directivity

The dangerousness of the crisis may require some directivity. The clinician, in an emergency context, will have to make decisions for the client and be prescriptive as to what action plan is to be applied. Furthermore, the clinician must be able to direct the interview and select topics that need to be explored in order to conduct a proper assessment of the crisis situation.

Active Position of the Clinician

One important element that distinguishes crisis intervention from other types of psychotherapy is probably the active position of the clinician. The clinician must rapidly create a positive alliance with the client in order to encourage a commitment to pursue a help-seeking process. Thus, the clinician must be supportive, caring, compassionate, attentive, available, in short, he will display all the attributes of empathy that will allow him to establish a positive working alliance with the client. However, it is important to emphasize that this level of intense caring, displayed during a crisis intervention, would not and should not be sustained for a long period, mainly for the reason that it would not allow the client to regain full autonomy in the management of future stressful events (Hendin, Maltsberger, & Szanto, 2007; Hobbs, 1984). It is a principle of crisis intervention to support an individual who is close to acting-out, to mobilize resources, to stimulate desire for change and growth and then to refer to health care workers who will be able to propose an intervention plan, if necessary.

Steps to Crisis Intervention

Current crisis intervention models such as those proposed by Aguilera (1998), Roberts (2000), describe strategic steps in a crisis intervention process. During a crisis intervention, the clinician is required to carry out, simultaneously, three main activities that necessitate different skills. The clinician must create a rapport and a relationship of trust with the individual in crisis, collect the necessary information for an accurate assessment of the crisis situation and maintain the individual's commitment to the therapeutic process. The clinician's ability to work on these three activities at the same time, and to easily move from one to the other, will promote a positive outcome to the process. This skill derives as much from the ability to be sensitive towards the individual as from the capacity to recognize, understand and follow all the steps involved in the intervention process (Barker, Taylor, Kader, Stewart, & Le Fevre, 2011).

The following chart summarizes the activities and the steps involved in a crisis intervention process (Dupont, Cochran, & Pillsbury, 2007).

(1) The creation of an alliance and a trusting working relationship that must be maintained throughout the intervention in order to sustain the client's commitment to the therapeutic process;
(2) Data collection that will allow an accurate clinical assessment;
(3) Based on this assessment, the clinician chooses and proposes the best intervention plans to the client; then puts them in motion and ensures the client's continuous commitment to the proposed intervention plans.

In the chart, the different activities and steps are presented in a linear way to describe them adequately. However, in practice it is clear that the clinician will need to apply several of these steps simultaneously (Fig. 25.1).

1. *Creating an alliance*

It is important to remember that, in order for the client to feel understood and less alone, the clinician must position himself as a witness of the client's distress and suffering. When the sense of loneliness subsides, it leaves room for hope. The feeling of being understood by the clinician reduces the sense of helplessness and renders the suffering tolerable. To take the time to listen to the distress expressed by the individual in crisis, the clinician must demonstrate empathy. Empathy implies a deep emotional understanding of a person's feelings or problems, without losing sight of that person's perception of the problem. By being empathetic, the clinician conveys to the client that he is understood and that he can indeed be helped. Since the crisis intervention often occurs shortly after a stressful event, it is important to consider the strategies that the client uses to protect himself (Andreoli, 1986). In this context, the wording the clinician uses must be adequately adapted so that understanding is not perceived as intrusive or as a lack of sensitivity. It requires that the clinician develop the ability to understand the client in crisis. Respect for emotional intimacy is the basis of empathic formulation (Shea, 2005). For instance,

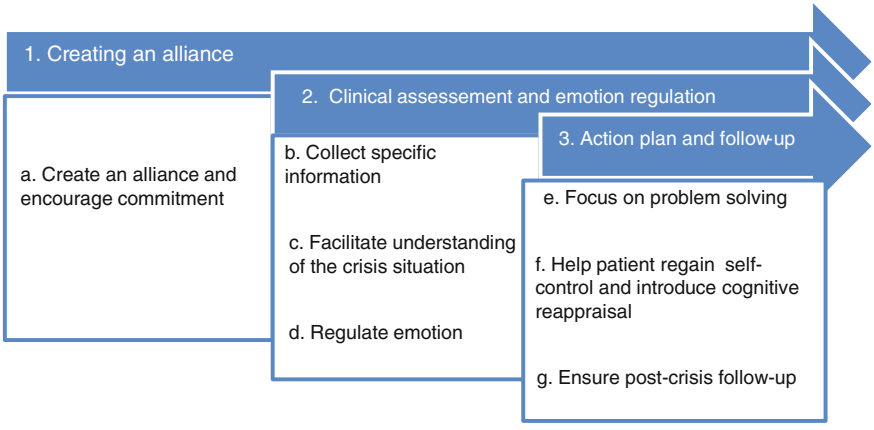


Fig. 25.1 Steps and operations for crisis intervention. *Source* Séguin and Chawky (2015)

there is a difference between an affirmative statement of empathy as, «you feel demolished by the fact that your husband left with another woman» and a less intrusive statement such as «it's as if your husband has destroyed what you and him have built together».

Predominantly, the capacity to maintain a positive alliance with a suicidal client during the crisis period will be one of the most important ingredients in crisis intervention.

2. *Clinical assessment and emotion regulation*

A proper and thorough clinical assessment is imperative during the intervention process. Firstly, it is important to focus on the client's current problems, particularly those that precipitated his request for help. Consequently, the collection of information will have to focus mainly on: (1) The current context of the crisis; (2) The event or events which precipitated the crisis; (3) The current risk of acting-out; (4) The client's perception of his current situation; (5) The emotional and cognitive states, behavioural functioning and psychiatric history; (6) Past life events (family, social, professional life) that are related to the current crisis.

While maintaining the alliance and the client's engagement, the clinician must gather enough information to facilitate understanding and to accurately assess the crisis situation. He must primarily determine the severity of the crisis by evaluating: the urgency, the danger and the risk factors.

The assessment of the urgency and the danger of self-harm is necessary during a crisis intervention (Kene-Allampalli, Hovey, Meyer, & Mihura, 2010). At this point, the clinician must evaluate the danger (does the person have the means and method?) and the imminence of an acting-out behaviour by verifying whether the person in crisis has a suicidal plan. The answer to these questions will help the clinician determine whether to quickly take emergency measures, or to continue gathering information and investigate the risk factors that have accumulated over the past month, or during a specific period, and that have contributed to increase the person's burden of adversities. Once the clinician has gathered the appropriate information, he will be able to form an action plan that he can propose to the client.

Hence, the primary information collected in a crisis situation will facilitate the assessment of:

(1) The urgency of an acting-out, meaning its imminence;
(2) The danger; meaning the lethality of the suicide plan.

The clinician will then be in a position to know how much the crisis has disrupted the client's life. Specifically, he will seek answers to the following questions:

- Why is the client asking for help at that particular moment? (what is the precipitating event)?
- Does he have suicidal thoughts or homicidal thoughts?
- Is he a danger to himself or to someone else?

From this information, it will be possible to determine the direction of the crisis intervention. If there is a suicidal threat, the clinician must consider restricting or removing access to any means of self-harm, which is a fundamental aspect in the assessment of suicide danger. He must therefore ask very precise questions in order to obtain precise answers, in order to adequately assess the urgency of the intervention. Clearly, the intervention will be different in the case of a client openly revealing his intention of committing suicide that same evening, with the means readily at his disposal—firearm or medication—than with a client stating that he is vaguely thinking of suicide and has no definite plan.

Since many suicidal individuals are prone to impulsive behaviour (Brezo et al., 2007), immediate access to lethal means increases the risk and the urgency of acting-out. Some are unable to resist their suicidal impulses; it is therefore necessary to safeguard their environment, and to remove or have remove from the client's residence any means that may put the client in danger. Studies have demonstrated that if the means are less accessible, the actual moment of acting-out may be delayed. If the suicidal individual is unable to protect himself, it is then necessary to involve a family member or a close friend (someone the suicidal individual trusts) so that the social network will allow protection and ensure that there is no immediate access to any lethal means.

Furthermore, the clinician must enable the client to explore and express the feelings associated to the stressful event. The expression of pain, the opportunity to vent and explain the situation, compels the individual to clarify, to sort out and to put in a time sequence the events that have disturbed his life. This process also allows the individual to sort out the emotions that are associated with the painful events he is experiencing. The step of emotional regulation allows the release of the tension. It reduces the sense of loneliness and gradually widens the cognitive fields, making the individual more willing to deepen its understanding of the events leading to the crisis and of the coping strategies required to resolve the crisis.

While a number of crisis interventions focus on problem-solving, it is important to consider the necessity of emotional regulation before being able to engage in problem-solving. Research in the last years has thoroughly demonstrated that vulnerability to suicidal behaviour has been associated with several cognitive deficits, increased sensitivity to particular emotional signals (Brezo et al. 2007) and disadvantageous decision- making, independently of comorbid disorders (Jollant, Lawrence, Olié, Guillaume, and Courtet, 2011). Individuals in crisis may have lower problem-solving abilities. Therefore, it is important in a crisis to be sensitive to the importance of emotional regulation before engaging the client in problem-solving. The process of problem-solving too early into the intervention may put the individual in a stressful situation by asking him to access cognitive abilities for which he has no «actual competence». When a person is emotionally flooded, the problem-solving abilities may be difficult to access. If an attempt to problem-solving is engaged too quickly, it could only serve to frustrate the client further, leaving him or her feeling invalidated and not understood. If the agitation rises, ask yourself if you have moved too quickly, regroup, and go back to the first step (Bergman, Brown, & Carruthers, 2007).

3. *Action plans and follow-up*

In the case of a suicidal crisis, the individual feels hopeless and no longer believes in the possibility of better days. It is therefore necessary for the clinician to rekindle the sense of hope by conveying the belief that there is an alternate solution to suicide and that the individual possesses within himself the necessary resources to overcome his difficulties. It is imperative to highlight the positive aspects and the strengths of the individual to restore his self-confidence and his belief for a positive outcome. It is also valuable to help the individual recognize that his distress, as intolerable as it may be, will not last a lifetime.

An intervention with a suicidal individual should aim to decrease isolation and broaden the social network. The immediate environment can be a valuable source of help and support. Whether it be family members, friends, or colleagues, they all comprise a potential support system. The clinician may assist the client in determining which members of his immediate circle are apt to offer support and some form of guidance. However, it is possible that these individuals will be too exhausted or lack the proper resources to help the client in crisis. When this is the case, and the clinician estimates that the immediate environment is not in a position to help, he should not hesitate to refer the client to the appropriate professional resources.

Before the end of the intervention, «a safety plan» may be implemented with the client and may be part of the discussion and follow-up with the client. The Safety Planning Intervention (SPI) (Stanley and Brown, 2012), identified as a best practice by the Suicide Prevention Resource Center/American Foundation for Suicide Prevention Best Practices Registry for Suicide Prevention, can be administered as a stand-alone intervention. The SPI consists of a written, prioritized list of coping strategies and sources of support that clients can use to alleviate a suicidal crisis. The basic components of the SPI include: (a) Recognizing warning signs of an impending suicidal crisis; (b) Employing internal coping strategies; (c) Utilizing social contacts and social settings as a means of distraction from suicidal thoughts; (d) Utilizing family members or friends to help resolve the crisis; (e) Contacting mental health professionals or agencies; and (f) Restricting access to lethal means.

Clinicians must plan and organize a follow-up with the client. First, it allows to ensure whether the client is well on his way to a crisis resolution. During this period, the clinician will verify the client's ongoing commitment to the treatment plan and will observe if the client's functioning has been restored.

Heterogeneity of Crisis Intervention Practices

The conceptual model of crisis intervention is conceived to be a short-term intervention with "a singular aim of getting the person through the crisis" (Wallace, 2001). Although there is not only a single model of crisis intervention, there are differences in the objectives of a crisis intervention and therefore, differences in the

way services are rendered. While impossible to do justice to all this diversity, we will offer an overview of these different views of crisis intervention.

Different Conceptual Models of Individual Intervention

Over the years, crisis intervention has proven to be an effective first-line intervention for people who were at risk of an «acting-out», in a state of acute psychological distress that could put their well-being in jeopardy. There are some presumptions that suicidal crisis may be triggered by an adverse event. To address this issue, crisis centers and telephone hotlines were developed to provide support in times of crisis. Therefore, the implementation of crisis intervention units opened 24×7, have been one of the many strategies in suicide prevention programmes. Different conceptual models have been proposed in the context of individual intervention.

The Classic Crisis Intervention Model

This model derives from the works of Caplan (1964), Messick and Aguilera (1976) and Aguilera (1998). It is currently the most recognized model in the field of crisis intervention. According to Aguilera (1998), the classic crisis intervention model originates from the premises of brief psychotherapy and thus carries on the objective to immediately resolve the crisis. The number of sessions generally varies from one to six. Aguilera (1998) offers a paradigm that explains the influence stressful events have on the disorganization of an individual. A crisis is triggered by a distorted perception of the event, by a lack of social support, by the absence of adequate coping mechanisms, or a combination of these factors. Generally, a crisis intervention must: (1) Restore emotional equilibrium by allowing the expression of suffering and distress; (2) Promote cognitive restructuring by providing a more realistic perception of the event; (3) Consider and mobilize the social network; (4) Encourage the individual to use coping mechanisms that have worked in the past; (5) Help the individual to acquire new and effective coping strategies (in the event that he did not have any) (Roberts, 2005).

Crisis Intervention Model Offered by Non-professionals

This model was developed in the 1960s in response to an increasing demand of mental health services (Flannery & Everly, 2000). Thus, the evolution of community intervention allowed for non-professionals to work in community centers and for the development of crisis centers and suicide prevention centers. This model was intended for individuals with no experience in psychotherapy to receive training in crisis intervention in order to acquire specific abilities to help peers in

need. This training, derived from a humanistic perspective, focuses on active listening, on establishing a positive rapport and providing information that helps the client in decision-making. The objective is to enable the non-professionals to acquire enough skills to help a person in crisis to identify and consider possible solutions to resolve his problem. In fact, this model translates in an intervention that is loosely structured, which may take place face to face or over the telephone. The number of intervention sessions varies according to the person's needs. The intervention focuses mainly on the present, although the future may be considered for some elements of problem-solving (Jacobson, 1980). Torop and Torop (1972) have observed that crisis workers are often young and very idealistic in the perception of their role as interveners, resulting in over-investment of the client's problems, or a tendency to be easily manipulated in some cases and, consequently, to be at risk of professional burnout.

The Solution-Focused Approach

Inspired by the works on communication of Bateson and the psychotherapeutic perspective of Milton Erickson, the *Solution-Focused Approach* is an inductive approach that focuses on generating solutions. In other words, while traditionally a psychotherapeutic process working on change focuses on problem-solving, this approach concentrates on implementing solutions. The *Solution-Focused Approach* originates from social constructivism and was developed in the early 1980s by Shazer (1985). This model focuses on the client's strengths and the intervention puts emphasis on the client's objectives for the future and not on past events. Even though this approach is widely used and taught in crisis centers, few empirical studies suggest its treatment efficacy.

Community-Based Intervention

Crisis Hotlines

Crisis intervention lines are services offered to individuals at imminent risk of suicidal behaviour. The crisis lines are opened 24 h a day, 7 days a week, and « helpers» are trained to evaluate imminent risk and engage callers in collaborating to keep themselves safe. While there is no scientific consensus as to the way to assess imminent risk (Boudreaux & Horowitz, 2014; Claassen, Harvilchuk-Laurence & Fawcett 2014), The National Suicide Prevention Lifeline, a network of 160 community crisis centers in the USA, has adopted a policy to formulate imminent risk based on the concepts of the Interpersonal–Psychological Theory of Suicide (Joiner, 2005; Joiner et al., 2007). This model proposes that suicidal desire does not signal imminent risk if intent or capability is absent (Joiner et al., 2007). Recently Gould et al. (2015) evaluated callers' risk profiles and interventions implemented from 491

callers at eight crisis centers. Results indicate that callers were actively engaged and collaborated to keep safe on 76% of the calls and emergency services were sent without the caller's collaboration for 24% of the calls.

While this most recent evaluation is promising, other assessments of crisis hotlines have yielded inconsistent findings regarding their efficacy in reducing suicidal behaviour, and further research is still needed (Beautrais, 2005). Moreover, other types of web-based communication help lines are being developed such as online personal chat, and the online support group, and these services are growing much faster than the research evidence for their support.

Crisis Intervention Team (CIT) to Reduce Arrest and Improve Officer Security

Interest in programmes based on the presence of police Crisis Intervention Teams, stems from the promise that they might reduce stigmatization, direct individuals towards mental health services, rather than detention centers and, further more, to reduce injuries among officers during an arrest (Broussard, McGriff, Demir Neubert, D'Orio, & Compton, 2010). A number of programmes have been developed to train selected officers in handling crisis and to assist in educating their fellow team members on mental health problems. For example, the Memphis Model of CIT (Compton et al., 2014) had been replicated in many agencies in North America (Wood, Swanson, Buris, & Gilbert, 2011). The training helps officers to make appropriate decisions in tense encounters, and utilize methods to negotiate the situation in the calmest way possible (Herrington & Pope, 2013; Watson, 2010). Recently, Taheri (2016) has published a systematic review and meta-analysis of selected studies and concluded that there is insufficient evidence to conclude whether these models reduce arrest and officer injury.

Mental Health Crisis Intervention for Vulnerable Individuals

Crisis Community and Home Treatment Team

Over the past decades, mental health crisis intervention has moved from being performed in a hospital to being implemented in the community (Giordano & Stichler, 2009; Krupa, Stuart, Marthany, Smart, & Chen 2010). In many cases, the crisis intervention services include a mobile unit in order to make home visits in crisis situation.

As crisis theory suggests, the event that triggers a crisis situation may depend on the individual's perception of the situation, and this evaluation may depend on the underlying vulnerability of the individual (Ball et al., 2005). Vulnerable individuals may have fewer coping mechanisms available and the individual's personality traits may create emotional dysregulation that may exacerbate the possibility of a difficult

event becoming a crisis (Séguin et al., 2007). Therefore, individuals with important mental health vulnerabilities may be prone to experience more crises compared to individuals with no such vulnerabilities (Roberts, 2005). Crisis intervention teams who establish a close personal strength-based relationship between a case manager and a vulnerable client may be an important resource during a period of crisis. Hootz, Mykota, and Fauchoux (2016) suggests that it is essential to create a circle of care by helping clients cultivate relationships with professionals, as it becomes an important asset when the client has to deal with a crisis situation.

Crisis resolution and home treatment teams (CRTs) have been established nationwide in the UK to reduce admissions to psychiatric hospitals. Hubbeling and Bertram (2012) did a systematic literature review to determine evidence for CRT. The search revealed one randomized controlled trial and a number of naturalistic studies. The evidence suggests that CRTs can reduce hospital beds and costs with similar symptomatic outcome and service user satisfaction, but there is no evidence that CRTs are the only way to do so. There is no conclusive evidence that CRTs cause an increase in suicidality or compulsory admissions. Currently, there is no compelling evidence favouring the implementation of CRTs. CRTs have to be compared with other methods to reduce hospital admissions and studies need to specify sample and treatment characteristics with greater detail (Hubbeling & Bertram, 2012).

Conclusion

It is important, in closing this chapter, to insist on four elements that can compromise the assessment process and subsequently the choice of the most appropriate intervention. The first element is that the clinician must recognize the state of crisis. He must make a careful assessment to clearly determine the extent and intensity of the problems presented, to develop an appropriate treatment plan, and to increase the likelihood of a positive outcome. The following analogy will illustrate this. When looking at a painting, it is often easier to observe changes from a lighter tone to darker colours. Although the stories of patients often take changing colours, tragic or diffuse, the clinician must be able to observe the combination of shades, colours and nuances to make a fair and proper assessment. If the clinician is unable to observe the subtlety in these changes, all colours can take the same appearance of gray. Hence, there lies the danger for the clinician: if all problems have the same "shade", he will have a tendency to only see a single and same problem in the person in crisis, and even the same problem from one person to another, and consequently, to always use the same intervention technique.

The second element is that the clinician may be inclined to act quickly, particularly in a context where the urgency demands an action. Yet, the first, most important task is the assessment of the person in crisis. This task can only be achieved after a quick-targeted investigation and an accurate and intelligent observation of the events that precipitated the crisis. We cannot emphasize enough

how much a thorough assessment is a necessary step to crisis intervention. It is performed simultaneously with other tasks, those being: (a) Establishing a therapeutic alliance with the client; (b) Collecting information; (c) Evaluating the risk potential; (d) Regulating emotion; (e) Defining an action plan and follow-up measures.

The third element is the importance of recognizing the variability and the impact of a crisis. All individuals in crisis do not react the same way to situations. Indeed, individual factors could mitigate or amplify certain reactions. These factors can be: (1) Biological or genetic in nature; (2) Psychological, such as history and presence of mental illness, history and presence of substance abuse and dependence, family history of mental illness; (3) Social, such as accumulated losses and personal adversity, socioeconomic status, lack of family, social and community support; (4) Both psychological and social nature, ex.coping and problem-solving abilities as well as the presence of protective factors. The evaluation of those factors that influence different crisis reactions allows clinicians to better understand the complexity of the clinical picture and therefore be able to suggest interventions that are adequate and that take into account the time when the crisis occurs in the life of the person as well as the different reactions the person may manifest.

The fourth element is that clinicians should be adequately trained to the appropriate therapeutic approaches of the different types of crisis. When traumatic events occur, particularly those with many victims, some clinicians, driven by a sense of compassion, quickly go on the scene. However, not all clinicians have the proper training to intervene in emergency situations. Clinicians who let their compassion take over their actual skills can sometimes be more harmful than helpful. Roberts (2002) mentions some examples of this. Among others, after the terrorist attack of September 11, 2001 in New York, clinicians who arrived to the scene, encouraged victims who expressed the wish to relocate from the Manhattan district to carry out their project. However, interveners specializing in the field of trauma and crisis would have known that these reactions are normal and transient, and that such anxieties must be worked in psychotherapy. Thus, they would not have spontaneously encouraged the victims to make a transition they could later regret. Admittedly, in the field of mental health, there are areas of specialization, and crisis intervention should be considered as a specific area of specialization.

The clinician should determine the most appropriate treatment or action plan. Again, he must take several decisions: he must determine what treatment to apply, to which problem, for which type of client and according to the client's period of life. If the clinician wants to know how intervention practices evolve and which ones are the most efficient, he should keep his knowledge up to date, and throughout his professional career. He must always be able to know what treatment plan to offer, whether he should recommend an individual, family or group treatment, whether simultaneously or sequentially. Increasingly, we find that therapeutic approaches which are effective to a certain subgroup are not necessarily so for another subgroup. It is therefore important to be aware of this knowledge that stems from research when choosing intervention plans. The clinician must therefore have a constant desire to update his knowledge through continuing education.

References

Aguilera, D. C. (1998). *Crisis intervention: Theory and methodology* (8th ed.). St. Louis, MO: Mosby.

Andreoli, A. (1986). *Crise et intervention de crise en psychiatrie*. Paris: Simep.

Baldwin, Bruce A. (1979). Crisis intervention: An overview of theory and practice. *Counseling Psychologist, 8*(2), 43–52.

Ball, J. S. (2003). *Describing the crisis experience for individuals with severe and persistent mental illness* (Master's Thesis). Parquets Dissertations & Theses database.

Ball, J. S., Links, P. S., Strike, C., & Boydell, K. M. (2005). It's overwhelming…everything seems to be too much: A theory of crisis for individuals with severe persistent mental illness. *Psychiatric Rehabilitation Journal, 29*(1), 10–17.

Barker, V., Taylor, M., Kader, I., Stewart, K., & Le Fevre, P. (2011). Impact of crisis resolution and home treatment services on user experience and admission to psychiatric hospital. *The Psychiatrist, 35*(3), 106–110.

Beautrais, A. L. (2005). National strategies for the reduction and prevention of suicide. *Crisis, 26*(1), 1–3.

Bergman, Y., Brown, A., & Carruthers, A. (2007). Advances in crisis management of the suicidal patient: Perspectives from patients. *Current Psychiatry Reports, 9*(1), 74–80.

Boudreaux, E. D., & Horowitz, L. M. (2014). Suicide risk screening and assessment: Designing instruments with dissemination in mind. *American Journal of Preventive Medicine, 47*(3), S163–S169.

Brezo, J., Paris, J., Tremblay, R., Vitaro, F., Hebert, M., & Turecki, G. (2007). Identifying correlates of suicide attempts in suicidal ideators: A population-based study. *Psychological Medicine, 37*(11), 1551–1562.

Broussard, B., McGriff, J. A., Demir Neubert, B. N., D'Orio, B., & Compton, M. T. (2010). Characteristics of patients referred to psychiatric emergency services by crisis intervention team police officers. *Community Mental Health Journal, 46*(6), 579–584.

Burgess, A. W., & Baldwin, B. A. (1981). *Crisis intervention theory and practice: A clinical handbook*. Englewood Cliffs, NJ: Prentice-Hall.

Caplan, G. (1964). *Principles of preventive psychiatry*. New York: Basic Books.

Caplan, G. (1989). Recent developments in crisis intervention and the promotion of support service. *Journal of Primary Prevention, 10*(1), 3–25.

Caplan, G., & Caplan, R. (2000). Principles of community psychiatry. *Community Mental Health Journal, 36*(1), 7–24.

Claassen, C. A., Harvilchuck-Laurenson, J. D., & Fawcett, J. (2014). Prognostic models to detect and monitor the near-term risk of suicide: state of the science. *American Journal of Preventive Medicine, 47*(3), S181–S185.

Compton, M. T., Bakeman, R., Broussard, B., Hankerson-Dyson, D., Husbands, L., Krishan, S., ...Watson A. C. (2014). The police-based crisis intervention team (CIT) model. *Psychiatric Services, 65*(4), 523–529.

Dupont, R., Cochran, S., & Pillsbury, S. (2007). *Crisis intervention team: Core elements. Unpublished report*. Memphis: University of Memphis.

Flannery, R. B., & Everly, G. S. (2000). Crisis intervention: A review. *International Journal of Emergency Mental Health, 2*(2), 119–125.

Giordano, R., & Stichler, J. F. (2009). Improving suicide risk assessment in the emergency department. *Journal of Emergency Nursing, 35*(1), 22–26.

Gould, M. S., Lake, A. M., Munfakh, J. L., Galfalvy, H., Kleinman, M., Williams, C., Glass, A., … McKeon, R. (2015). Helping callers to the National Suicide Prevention Lifeline who are at imminent risk of suicide: Evaluation of caller risk profiles and interventions implemented. *Suicide and Life-Threatening Behaviour, 46*(2), 172–190.

Hendin, H., Maltsberger, J. T., & Szanto, K. (2007). The role of intense affective states in signaling a suicide crisis. *The Journal of Nervous and Mental Disease, 195*(5), 363–368.

Herrington, V., & Pope, R. (2013). The impact of police training in mental health: An example from Australia. *Policing and Society: An International Journal of research and Policy, 24*(5), 501–522.

Hobbs, M. (1984). Crisis intervention in theory and practice: A selective review. *British Journal of Medical Psychology, 57*(1), 23–34.

Hoff, L. A. (1995). *People in crisis: understanding and helping* (4th ed.). San Francisco: Jossey-Bass Publisher.

Hootz, T., Mykota, D. B., & Fauchoux, L. (2016). Strength-based crisis programming: Evaluating the process of care. *Evaluation and Program Planning, 54,* 50–62.

Hubbeling, D., & Bertram, R. (2012). Crisis resolution teams in the UK and elsewhere. *Journal of Mental Health, 21*(3), 285–295.

Jacobson, G. F. (1980). Crisis theory. *New Directions for Mental Health Services, 1980*(6), 1–10.

Joiner, T. E. (2005). *Why people die by suicide*. MA: Harvard University Press.

Joiner, T. E., Kalafat, J., Draper, J., Stokes, H., Kundson, M., Berman, A. L., McKeon, R. (2007). Establishing standards for the assessment of suicide risk among callers of the National Suicide Prevention Lifeline. *Suicide and Life-Threatening Behaviour, 37*(3), 353–365.

Jollant, F., Lawrence, N. L., Olié, E., Guillaume, S., & Courtet, P. (2011). The suicidal mind and brain: a review of neuropsychological and neuroimaging studies. *The World Journal of Biological Psychiatry, 12*(5), 319–339.

Kene-Allampalli, P., Hovey, J. D., Meyer, G. J., & Mihura, J. L. (2010). Evaluation of the reliability and validity of two clinician-judgment suicide risk assessment instruments. *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 31*(2), 76–85.

Kirk, W. G. (1993). *Adolescent suicide: A school-based approach to assessment & intervention*. Champaign: Research Press Publishers.

Krupa, T., Stuart, H., Marthany, A., Smart, J., & Chen, P. (2010). An evaluation of a community-based integrated crisis-case management service. *Canadian Journal of Community Mental Health, 29*(S5), 125–137.

Messick, J. M., & Aguilera, D. C. (1976). Intervention en situation de crise: théorie et méthodologie (2e éd). Saint-Louis, Missouri, Mosby.

Oliva, J. R., & Compton, M. T. (2008). A statewide Crisis Intervention Team (CIT) initiative: Evolution of the Georgia CIT program. *Journal of the Academy of Psychiatry Law, 36*(1), 38–46.

Roberts, A. (2000). An overview of crisis theory and crisis intervention. In A. R. Roberts (Ed.), *Crisis intervention handbook: Assessment, treatment and research* (2nd ed., pp. 3–30). New York: Oxford University Press.

Roberts, A. R. (2002). Assessment, crisis intervention, and trauma treatment: The integrative ACT intervention model. *Brief Treatment and Crisis Intervention, 2*(1), 1–21.

Roberts, A. R. (2005). Bridging the past and present to the future of crisis intervention and crisis management. In A. R. Roberts (Ed.), *Crisis intervention handbook* (3rd ed). New York: Oxford University Press.

Roberts, A. R., & Yeager, K. R. (2009). *Pocket guide to crisis intervention*. New York: Oxford University Press.

Séguin, M. (2001). *Désamorcer une crise suicidaire. Prise en charge psychologique. La crise suicidaire*. Paris: fédération française de consensus. John Libbey Eurotext.

Séguin, M. & Chawky, N. (2015). *Formation provinciale sur l'intervention de crise dans le milieu 24/7*. 3e édition.

Séguin, M., Leblanc, L., & Brunet, A. (2006). Crise et trauma: proposition d'une typologie et interventions différenciées. *Revue Francophone du Stress et du Trauma, 6*(4), 213–219.

Séguin, M., Lesage, A., Turecki, G., Bouchard, M., Chawky, N., Tremblay, N., Guy, A. (2007). Life trajectories and burden of adversity: Mapping the developmental profiles of suicide mortality. *Psychological Medicine, 37*(11), 1575–1584.

Selye, H. (1956). *The stress of life*. New York, NY: McGraw-Hill.

Shazer, S. (1985). *Keys to solution in brief therapy*. New York: Norton.

Shea, S. C. (2005). *The practical art of suicidal assessment*. Hoboken, NJ: Wiley.

Shneidman, E. S. (1993). Commentary: Suicide as psychache. *The Journal of Nervous and Mental Disease, 181*(3), 145–147.

Stanley, B., & Brown, G. (2012). Safety planning intervention: A brief intervention to mitigate suicide risk. *Cognitive and Behavioural Practice, 19*(2), 256–264.

Taheri, S. A. (2016). Do crisis intervention teams reduce arrests and improve officer safety? A systematic review and meta-analysis. *Criminal Justice Policy Review, 27*(1), 76–96.

Torop, P., & Torop, K. (1972). Hotlines and youth culture values. *American Journal of Psychiatry, 129*(6), 730–733.

Wallace, M. D. (2001). The origin of suicide prevention in the United States. In D. Lester (Ed.), *Suicide prevention: Resources for the millennium* (pp. 239–254). Philadelphia, PA: Brunner-Routledge.

Watson, A. C. (2010). Research the real world: Studying Chicago police department's crisis intervention team program. *Research on Social Work Practice, 20*(5), 36–43.

Wood, J., Swanson, J., Burris, S., & Robertson, A. G. (2011). *Police interventions with persons affected by mental illnesses*. New Brunswick: Center for Behavioural Health Services and Criminal Justice Research, Rutgers University.

Chapter 26
ACT for Life: Using Acceptance and Commitment Therapy to Understand and Prevent Suicide

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Humans are bony terrestrial bipeds with inferior physical capabilities relative to many other faster, stronger, more resilient animals. Nonetheless, humans have been fantastically successful as a species. Over the past century, the global average life expectancy has more than doubled! We have developed unparalleled technology for controlling our environment, protecting against predators and infectious disease, travelling, and transporting knowledge and goods. Humans now inhabit virtually all geographic regions of our planet. This phenomenal success is uniquely human. However, humans are also the only living organisms that consciously and deliberately kill themselves (Hayes, Strosahl, & Wilson, 2012a, b). Suicide is present in all societies and, internationally, nearly one in ten humans will consider suicide at some point during their lives (Nock et al., 2008a, b). In 2012, over 800,000 people died by suicide (World Health Organization, 2016). This has left many asking,

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"What is it about being human that causes so many people to consider killing themselves?" On the surface, the answer is not simple. Suicide is associated with a broad array of stressors, illnesses, and demographics. There is not one clear pathway that uniformly leads to suicide (Hayes, Pistorello, & Biglan, 2008).

Acceptance and Commitment Therapy (ACT) is a transdiagnostic psychosocial treatment approach grounded in a model of psychological flexibility (Hayes, Pistorello, & Levin, 2012). ACT offers a compelling explanation for why suicide is uniquely human and heterogeneous in etiology (Hayes et al., 2008, 2012), but has been understudied in its applicability to conceptualizing and preventing suicide. In this chapter, we articulate the unique abilities of humans that can also facilitate suicidal thoughts and behaviours, and subsequently delineate the etiology of suicidal thoughts and behaviours according to the ACT model of psychological flexibility, while considering extant empirical support. We conclude by presenting an overview of how ACT can help individuals at risk of suicide build a life worth living.

"What Is It About Being Human that Causes So Many People to Consider Killing Themselves?"

The critical abilities that have made humans so successful are also responsible for causing some to desire death. The development of humans' capacity for symbolic activity (e.g. language) and derived relations (e.g. A > B and B > C; therefore, A must > C) unleashed a cascade of cultural and technological innovations that continue at an unprecedented rate (Harris, 2009). These abilities allow us to learn indirectly and to vastly increase our knowledge via derived relations. Furthermore, through these cognitive abilities, symbols take on the properties of the actual objects/phenomena they represent (e.g. salivating as you imagine your favourite food).

Yet there is a dark side to these cognitive abilities. The same capacity for symbolic thought, abstract reasoning, and introspection that has made humans so successful is also the source of profound suffering (Hayes et al., 2012). Just as we can reflect on past successes, we can ruminate about our failures. For example, if you think about the first time you fell in love, you probably will experience some of the same emotions and physical sensations that you had at the time. However, you can also reflect on the experience of being rejected or losing a loved one. Simply recalling such experiences often produces a nearly palpable sense of psychological pain. Just as we can look forward to future experiences, we can become entrenched in intense anxiety and hopelessness when our reasoning suggests that the future will be painful. These big brains of ours give us the unique capacity to produce psychological suffering in the absence of any aversive environmental stimuli. We can hurt anywhere anytime. Furthermore, our effective problem-solving skills often backfire when applied to internal experiences; for example, attempts to avoid

unwanted thoughts and emotions may lead to isolation and loss of meaningful activities and relationships. ACT was built upon the realization that humans' cognitive abilities lead to our achievements and misery (Hayes et al., 2012). The ACT model of psychological flexibility, presented below, further explains the processes that lead to human suffering and suicidal desire.

Applying the ACT Model of Psychological Flexibility to Suicidal Self-Directed Violence

The ACT model is defined in terms of six core processes (acceptance, defusion, being present, a noticing self, values, and committed action) that revolve around a single-core concept: psychological flexibility. Psychological flexibility can be defined as "contacting the present moment as a conscious human being, fully and without defense, as it is and not as what [the mind] says it is, and persisting or changing one's own behaviour in the service of chosen values" (Hayes, Levin, Plumb-Vilardaga, Villatte, & Pistorello, 2013). This is the central mechanism of change in ACT, and the six core processes together create psychological flexibility.

The ACT model of psychological flexibility has been used to understand a variety of psychiatric conditions. Nonetheless, a strength of ACT is that it provides a unified transdiagnostic model for understanding and implementing behaviour change. Thus, the ACT model can be particularly useful for understanding and treating complex transdiagnostic problems and behaviours, including suicidal self-directed violence (SDV).

Although suicide is complex and multi-faceted, the pathways to suicidal SDV share a common element: they all involve some form of unwanted emotional or physical pain that is difficult, if not impossible, to control. Thus, suicidal SDV, according to ACT, emerges as an extreme attempt to control psychological and/or physical pain; yet herein lies the fundamental problem. Pain in and of itself is normal and inherent to being human. It is our attempts to control pain that are problematic, as such efforts often contribute to prolonged, unnecessary suffering. As shown in Fig. 26.1, each core process that contributes to psychological flexibility has a corresponding inverse process that contributes to psychological rigidity, which can be used to understand suicide.

The concept at the centre of the model is psychological inflexibility or rigidity. At the most basic level, suicidal SDV is conceptualized as an ineffective problem-solving method, motivated by a strong desire to escape pain and suffering (i.e. experiential control) that undermines value-driven behaviour (i.e. behavioural restriction). The six core processes that contribute to psychological rigidity and their application to suicidal SDV are described in Table 26.1.

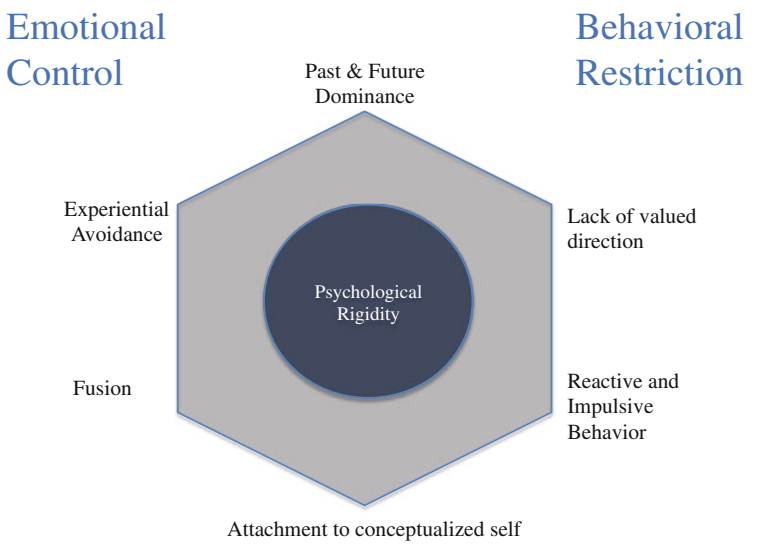

Fig. 26.1 ACT model of psychological rigidity. *Source* Adapted from Hayes, Luoma, Bond, Masuda, and Lillis (2006)

Empirical Support for the ACT Conceptualization of Suicidal SDV

Psychological Rigidity

Research examining psychological rigidity broadly (assessed via executive functioning and neurocognitive tests) has demonstrated that mental inflexibility is, in fact, associated with suicidal thoughts and behaviours (Keilp et al., 2001; Marzuk, Hartwell, Leon, & Portera, 2005; Williams & Broadbent, 1986). For example, among depressed patients, those with current suicidal ideation (SI) performed more poorly on a measure of mental inflexibility (Marzuk et al., 2005). Additionally, adolescents who had recently attempted suicide demonstrated rigid thinking, compared to controls (Wilson et al., 1995). However, post-crisis, individuals who have made a suicide attempt (SA), do not remain inflexible, suggesting that rigidity associated with suicidal thoughts is a correlate of stress (Perrah & Wichman, 2010). Such research supports the conceptualization of psychological rigidity leading to suicidal SDV.

Table 26.1 Core processes of psychological rigidity and how they apply to suicidal self-directed violence

Core process	Description	Application to suicidal SDV
Experiential avoidance	Attempts to alter the form, frequency, and/or intensity of private experiences (e.g. thoughts, emotions, sensations), even when doing so is costly, ineffective, or unnecessary (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996)	Suicidal SDV serves the function of escaping or avoiding painful emotional experience. It is the most extreme form of experiential avoidance that arises when pain is perceived to be "intolerable, interminable, and inescapable" (Chiles & Strosahl, 2005)
Fusion	The tendency to get so caught up in the content of thinking that it dominates other types of behavioural regulation	Suicidal thoughts, hopelessness, and other negative cognitions become literal truth and dictate behaviour in a dichotomous, black, and white fashion
Attachment to conceptualized self	Overidentification with our fused evaluative stories about who we are (Hayes et al., 2013)	Suicidal individuals over-identify with their conceptualized self, which is often defined in overly simplistic and judgmental terms, leading to aversive self-awareness and negative self-evaluative thinking (Luoma & Vilatte, 2012). In turn, avoiding such negative self-critical evaluations provokes suicidal SDV
Past and future dominance	Dominance of conceptualized past and worry about the future. Losing contact with the here and now	Suicidal individuals often ruminate about the past or excessively worry about the future. This constricted awareness promotes hopelessness and prevents them from thinking flexibly and identifying alternative solutions to suicidal SDV
Lack of valued direction	Lack of values clarity or failure to contact and specify appetitive consequences of importance (Hayes et al., 2013)	Suicidal individuals become caught up in avoidance-oriented goals, while their ability to consider longer term goals/values is diminished or absent (Luoma & Vilatte, 2012). This results in lost opportunities to experience meaning and purpose in life, which are often directly tied to reasons for living, thus undermining important protective factors
Reactive and impulsive behaviour	Overemphasis on experiential control and escape deters individuals from engaging in purposeful, value-driven behaviour	Instead of engaging in behaviour guided by values, suicidal SDV is reactive and driven by the desire to achieve immediate relief from pain and suffering

Source Proposed by Authors

Experiential Avoidance

Experiential avoidance plays a key role in suicidal SDV. In a meta-analysis by Hayes, Luoma, Bond, Masuda, and Lillis (2006), experiential avoidance accounted for 16 to 25% of the variance in behavioural health problems generally and those identified as risk factors for suicidality. Additionally, greater psychological flexibility (i.e. less experiential avoidance) is associated with a lower likelihood of experiencing suicidal thoughts and behaviours (Bryan, Ray-Sannerud, & Heron, 2015). Bahraini et al. (2016) recently examined the association between experiential avoidance and SI among post-9/11 combat veterans. Experiential avoidance was positively associated with SI, adjusting for SA history and psychiatric symptoms. These findings also extend to inpatient populations; in a study by Ellis and Rufino (2016), hospitalized adults who reported decreased experiential avoidance also reported significant decreases in SI, independent of depression severity and hopelessness.

Avoidant coping styles are also associated with SDV (Guerreiro et al., 2013; Josepho & Plutchik, 1994), further supporting the assertion that avoidance is associated with risk for suicide. Moreover, although experiential avoidance involves attempts to avoid a variety of internal experiences (e.g. thoughts, emotions, sensations), substantial research has focused on attempts to suppress unwanted thoughts. The desire to suppress disturbing thoughts may seem natural; yet doing so paradoxically increases the unwanted thoughts (c.f. Wegner, 1994). In a series of studies in undergraduate and clinical samples, Pettit et al. (2009) demonstrated that a greater tendency to suppress suicidal thoughts was associated with higher levels of concurrent SI. Moreover, individuals who endorsed greater baseline tendencies to suppress suicidal thoughts displayed an increase in the severity of SI over time. Furthermore, ineffective attempts to suppress unwanted aspects of emotional experiences may generate additional negative beliefs about the emotional material itself or about one's ability to control emotions (Salters-Pedneault, Tull, & Roemer, 2004). Such non-acceptance of emotional experiences is correlated with self-reported difficulties in emotion regulation and impulsive behaviours, including self-harm (Gratz & Roemer, 2004). These findings suggest that suppressing internal experiences (including suicidal thoughts) actually increases the presence of associated internal states (e.g. SI) and interferes with adaptive responding in the face of threatening stimuli. Thus, accepting that suicidal thoughts will occur may decrease emotional distress and also decrease SI, although research is needed to examine this directly. In sum, these results support the ACT conceptualization of experiential avoidance as a core process leading to SI and SA.

Fusion

Although sparse research has examined the association between fusion and suicidal SDV, a robust literature has demonstrated that hopelessness and dichotomous thinking are associated with suicidal thoughts and behaviours (Beck, Steer, Kovacs,

& Garrison, 1985; Neuringer & Lettieri, 1971). Most extant research has focused on the presence of maladaptive thoughts as they relate to suicidality, rather than assessing fusion with those thoughts per se. Such research has supported a link between negative thoughts and SI, even when accounting for depression (Chioqueta & Stiles, 2007; Coleman & Casey, 2007). Thus, although certain types of thoughts are associated with SI and SDV, empirical studies are needed to examine whether fusion with such thoughts actually leads to SI and SDV.

Values

Cross-sectional research also suggests that identifying more values as important and perceiving success acting consistently with one's values are both associated with being less likely to report recent SI (Bahraini et al., 2013). These findings suggest that helping patients to clarify values that are important to them and to increase value-consistent behaviour may help to decrease SI. In addition, the extent to which individuals report caring about specific values (e.g. relationships) moderates the association between known risk factors for suicide (i.e. thwarted belongingness) and SI (Monteith, Pease, Forster, Homaifar, & Bahraini, 2015), further underscoring the important role of personal values and committed action in regard to SI.

Mindfulness

Mindfulness, or present-focused, curious, open, accepting awareness (Bishop et al., 2004), can also be described as a combination of four processes of psychological flexibility: contact with the present moment, acceptance, cognitive defusion, and self as context (Luoma & Villatte, 2012). Mindfulness is inversely associated with SI (Chesin & Jeglic, 2016; Lamis & Dvorak, 2014; Serpa, Taylor, & Tillisch, 2014). Chesin et al. (2016) recently reviewed the literature and found that mindfulness-based interventions are well suited to target SI and specific deficits associated with SA, such as attentional dyscontrol. Additionally, trait mindfulness mediates the association between symptom severity and suicidal probability (Mohammadkhani, Khanipour, Azadmehr, Mobramm, & Naseri, 2015). Whereas mindfulness appears to be protective against SI, rumination (particularly ruminative brooding) and anxiety (e.g. generalized anxiety, social phobia) appear to be risk factors for SI (Cougle, Keough, Riccardi, & Sachs-Ericsson, 2009; Miranda, Valderraman, Tsypes, Gadol, & Gallagher, 2013; Morrison & O'Connor, 2011; Norton, Temple, & Pettit, 2008); notably, these processes involve diverting one's attention away from the present and focusing instead on the past (i.e. rumination) or the future (i.e. anxiety).

In a randomized controlled trial comparing mindfulness meditation and relaxation training, Jain et al. (2007) found that mindfulness significantly decreased ruminative

thoughts. Indeed, participants of mindfulness-based cognitive therapy (MBCT) demonstrate significant decreases in SI (Chesin et al., 2015; Forkmann et al., 2014), and decreases in worry are associated with decreases in SI among individuals participating in MBCT (Forkmann et al., 2014). Notably, certain aspects of mindfulness, such as the ability to observe internal experiences happening in the present, appear to be more protective against SI (Chesin & Jeglic, 2016). Furthermore, the ability to observe internal experiences is associated with less severe SI (Chesin & Jeglic, 2016). Taken together, findings from cross-sectional and interventional research suggest that past and future dominance is associated with SDV, whereas the converse (i.e. mindfulness) is inversely associated with SDV.

ACT Interventions

Research demonstrates that the different ACT processes are interconnected, and that success in one area optimizes success in others. For example, cognitive fusion and experiential avoidance interact, such that associations between cognitive fusion and psychiatric symptoms (e.g. depression, PTSD, anxiety) are strongest at higher levels of experiential avoidance (Bardeen & Fergus, 2016). In addition, psychological rigidity is a barrier to engaging in value-consistent behaviour (Plumb, Stewart, Dahl, & Lundgren, 2009). Research with individuals suffering from chronic pain indicates that the values component of ACT is more effective than focusing exclusively on acceptance (Branstetter-Rost, Cushing, & Douleh, 2009). These findings highlight the potential utility of each ACT domain for decreasing patients' suffering.

ACT has been shown to be effective at reducing SI among depressed Veterans (Walser et al., 2015) and among a sample of individuals with a recent SA (Ducasse et al., 2014). Case study reports have also shown promising results for ACT interventions with suicidal individuals (Luoma & Villatte, 2012). However, further research is needed to examine the impact of ACT on SI and SDV.

Assessment According to the ACT Conceptualization of Suicidal SDV

Many assessment instruments have been developed to measure the processes involved in psychological flexibility. The ability to operationalize these processes is critical both to advancing ACT research and understanding how ACT can prevent suicidal SDV. Furthermore, assessment can help inform treatment targets and monitor progress. Such assessments are most consistent with ACT when done collaboratively and with an inquisitive, supportive, and open-minded approach. Below we describe assessment instruments for measuring each process associated with psychological rigidity/flexibility.

Fusion

ACT differs from other therapeutic modalities in that the presence of SI is not necessarily seen as problematic in and of itself. Rather, how individuals respond to suicidal thoughts or urge determines whether such experiences are considered problematic—for example, if a patient is fused with suicidal thoughts, such that they attach meaning to them or act on such thoughts with SDV, these latter processes and actions would be considered targets for intervention. Thus, assessing fusion with suicidal thoughts is an important component of case conceptualization and treatment when working with suicidal patients. We are not aware of any measures that assess fusion with suicidal thoughts specifically, and research on the association between cognitive fusion and SI is lacking.

However, considering that cognitive fusion is associated with several indices of psychological distress and PTSD (Bardeen & Fergus, 2016), assessing fusion more generally is important and can be accomplished with the Cognitive Fusion Questionnaire (Gillanders et al., 2014), a brief 7-item self-report measure that has evidenced reliability, validity and sensitivity to treatment with different samples. Alternately, the Thought-Action Fusion Revised Scale (Shafran, Thordarson, & Rachman, 1996) is a self-report measure which assesses different components of fusion, including the belief that thinking about an event increases: (1) the likelihood of it occurring; and (2) is equated to acting on the thought. Additional measures have been developed to assess how much individuals believe specific thoughts, such as negative thoughts (e.g. Stigmatizing Attitudes—Believability; Hayes et al., 2004), anxious thoughts and feelings (e.g. Believability of Anxious Feelings and Thoughts Questionnaire; Herzberg et al., 2012), and depressogenic automatic thoughts (e.g. Automatic Thoughts Questionnaire—Believability subscale; Zettle & Hayes, 1986). The Experiences Questionnaire (Fresco et al., 2007) measures decentering, which (similar to defusion) is defined as the ability to observe one's thoughts and feelings as temporary, objective events in the mind. As suicidal thoughts and behaviours are common across many symptoms and disorders, the Cognitive Fusion Questionnaire (Gillanders et al., 2014) provides the most flexibility in terms of operationalization, item content, and psychometric properties to date.

Experiential Avoidance

Experiential avoidance can be assessed with the 7-item Acceptance and Action Questionnaire-II (AAQ-II; Bond et al., 2011; Hayes et al., 2006), which assesses willingness to approach (versus avoid) aversive internal experiences. The AAQ-II correlates with SI (Bahraini et al., 2016) and decreases in AAQ-II scores (i.e., increased willingness) during the course of ACT have been associated with lower odds of SI across time (Walser et al., 2015). In addition, disorder and syndrome-specific measures of experiential avoidance have been found to correlate

more strongly with actual behaviours. Thus, when working with patients at risk for suicide, assessing experiential avoidance of suicide-related thoughts specifically may be warranted and may be achieved with the suicide-specific version of the White Bear Suppression Inventory (WBSI-SI; Williams, Duggan, Crane, & Hepburn, 2011).

Values

Assessing patients' values and their perceived success living consistently with those values is essential to understanding risk for suicide and intervening with ACT. Several questionnaires have been developed specifically for this purpose, including the Valued Living Questionnaire (Wilson, Sandoz, Kitchens, & Roberts, 2010); the Bull's Eye Values Survey, which assesses values attainment, discrepancy between stated values and behaviour, perceived barriers to valued living, and behavioural persistence (Lundgren, Luoma, Dahl, Strosahl, & Melin, 2012); the Personal Values Questionnaire (Blackledge & Ciarrochi, 2006); and the Survey of Life Principles (Ciarrochi & Bailey, 2008), which also assesses number of values put into play recently and pressure to endorse different values. For clinicians seeking to utilize more experiential and interactive methods of helping their patients to identify values, several values/life principles card sort exercises can be used (e.g. Ciarrochi & Bailey, 2008). Additionally, some research has shown that writing about important values, followed by word selection from the writing sample, is a valuable way to help patients identify values (Sandoz & Hebert, 2015).

Multiple Core Processes

In addition to measures that focus specifically on a single process of psychological flexibility/rigidity, there are many measures that capture a combination of several different ACT processes. As noted, mindfulness can be described as a combination of four processes of psychological flexibility: contact with the present moment, acceptance, cognitive defusion, and self as context (Luoma & Villatte, 2012). Mindfulness can be assessed through a variety of different self-report instruments, such as the Five Facet Mindfulness Questionnaire (FFMQ; Baer, Smith, Hopkins, Krietemeyer, & Toney, 2006), Mindful Attention Awareness Scale (MAAS; Brown & Ryan, 2003), and Philadelphia Mindfulness Scale (Cardaciotto, Herbert, Forman, Moitra, & Farrow, 2008). These measures range from 15 (MMAS) to 39 items (FFMQ). The lengthier assessments (e.g. FFMQ) provide information regarding specific mindfulness skills, such as individuals' ability to observe and describe their experiences, act with awareness, and be non-judgmental and non-reactive to such internal experiences (Baer et al., 2006, 2008).

Suicidal Self-Directed Violence

Lastly, given the focus in ACT on actual behaviour (e.g. SA, preparatory behaviour), rather than internal experiences (e.g. SI), assessing suicidal SDV or preparatory behaviour is particularly important. There are a number of structured interviews which can aid this, including the Self-Injurious Thoughts and Behaviours Interview (SITBI; Nock, Holmber, Photos, & Michel, 2007), Scale for Suicidal Ideation (SSI; Beck, Kovacs, & Weissman, 1979), Lifetime Suicide Attempt Self-Injury Interview (L-SASI; Linehan & Comtois, 1996), Self-Harm Behaviour Questionnaire (SHBQ; Gutierrez, Osman, Barrios, & Kopper, 2001), and Columbia-Suicide Severity Rating Scale (C-SSRS; Posner et al., 2011).

Treatment Considerations for Using ACT to Prevent Suicidal Self-Directed Violence and Build Lives Worth Living

ACT interventions are particularly well suited for helping individuals who engage in or are at risk for suicidal SDV. ACT is a flexible treatment modality that allows clinicians to tailor interventions to the individual patient and target the unique drivers of their desire for death. Just as there is no single pathway that leads to suicide, there is no single set of ACT exercises, metaphors, or other techniques that are *the* way to use ACT to help patients build lives worth living. Future research should seek to optimize the use of ACT for suicide prevention and assess its efficacy for assisting these patients in building lives worth living. Below we draw from our clinical experience, Chiles and Strosahl's (2005) treatment model for the repetitiously suicidal patient, and nascent literature on using ACT with patients who are suicidal (e.g. Ducasse et al., 2014; Hayes et al., 2008; Luoma & Villatte, 2012) to describe how ACT can be used to address suicide risk. However, we caution the reader against applying these techniques without previous training and experience in ACT. We use ACT in four fundamental ways to address suicide risk: (1) Framing suicide as part of the unworkable agenda of control; (2) Fostering emotional willingness as the alternative to control; (3) Targeting the fusion, impulsivity, and reactivity of suicidal thinking; and (4) Developing and strengthening a value-driven life.

Framing Suicide as Part of the Unworkable Agenda of Control

Treatment begins by joining with the patient in a non-judgmental, empathic way to help them assess what has been keeping them stuck. The clinician can normalize the

patient's attempts to get rid of unwanted thoughts and emotions, and ultimately guide the patient in using past experience to conclude that the control agenda is unworkable (i.e. creative hopelessness). It is not that the patient is incompetent or has not been trying hard enough, but rather that the strategy he has been taught is flawed. There are many different ways to evoke creative hopelessness. A focused interviewing approach (Hayes, Strosahl, & Wilson, 2012; Strosahl, Robinson, & Gustavsson, 2012) can be used by asking the patient: (1) *What are you seeking?*, (2) *What have you tried?*, (3) *How has it worked?*, and (4) *What has it cost you?*.

In responding to the questions *What are you seeking?* or *How will you know therapy has worked?,* patients typically respond with versions of wanting their pain to go away (i.e. unwanted thoughts, emotions, sensations). These questions often elicit important details of the patient's reasons for dying and rationale for considering suicide, which can become treatment targets (*I can't take this anxiety and depression*). Responses to this question can also provide information about the patient's values and goals that the clinician can explore more fully later in therapy (*If I could just get rid of this anxiety and depression, I'd finally be a decent father and do stuff with my son again*).

The question of *What have you tried?* (asked in a curious non-judgmental way) helps gauge the extent of the patient's experiential avoidance and suicide-related cognitions. The extent of client's avoidance strategies often includes behaviours like using substances and social isolation which can be explored and reflected as risk factors that frequently lead people to increased suicidal thinking. Patients often then identify suicide as an ultimate strategy they have tried or considered. If suicide is not mentioned, the clinician can gently ask, "*Would it be safe to say that your recent attempt (or thinking about ways) to end your own life was another way to try and fix this problem?*".

The final two questions allow the patient to get in touch with the reality that their strategies to get rid of pain not only are not working, but are ultimately causing them to lose control over their life as they have led to the sacrifice of valued life activities (i.e. reasons for living/protective factors). Promoting hopelessness in a person who is already feeling suicidal and hopeless about life may seem like a counterintuitive and daunting task. A critical distinction is that the goal is to illustrate the hopelessness of the *control agenda*, NOT hopelessness about life. Many patients who feel quite hopeless about life cling to the notion that control and avoidance of pain must be the only viable strategy for getting unstuck—this typically underpins the continued consideration of suicide. As the clinician and patient examine the results of the focused interview, it is important to emphasize suicide as yet another example of the ineffective control strategy that has led them to sacrifice what they value most in life, while also acknowledging that it is perfectly understandable that they have been considering suicide as a solution to their problem. Our society labels certain feelings as negative (e.g. fear, anxiety, sadness) and sends the message that one should not express or feel these things (e.g. *don't worry, be happy*). Many people caught up in the struggle label their feelings and thinking as bad, but are unable to get rid of them. Humans then naturally start labelling the whole of themselves as bad. Society's control agenda teaches us that we should get

rid of things that are bad or broken and cannot be fixed. This control strategy tends to be very successful for external things like spoiled milk and markers that have run out of ink, so the notion of applying the same rule and solving the problem by trying to get rid of oneself is not that surprising. Who would blame us for trying to use the same strategy for bad stuff in our heads when it pays off in so many ways outside our minds? Who would blame us for doing things like using substances and withdrawing from others when it reinforces us with initial relief from the discomfort? BUT the patient's experience shows that the control strategy does not work in the long run and can come at a high price.

Thought suppression (e.g. don't think of a white bear; Wegner, 1994) and experiential exercises (e.g. Tug of War with Monster; Hayes et al., 2012) can be used to further illustrate that emotional avoidance is ineffective. The patient and clinician should explicitly reach the conclusion that trying to control the pain is the problem, not the solution to living a life worth living. Once patients buy into the hopelessness of the control agenda, they can be encouraged to place the solution of suicide on the shelf while they partner with the therapist in exploring alternative coping skills based on acceptance and a new strategy for building a life worth living (see below). The patient's ability to realistically abstain from engaging in SDV can be increased by completing a Safety Plan for how they will cope with suicidal crises (c.f. Stanley & Brown, 2012). As patients master new ACT coping techniques and identify adaptive-valued activities, these can be added to the safety plan in place of activities focused purely on distraction.

Fostering Emotional Willingness as the Alternative to Control

After undermining suicidal patients' beliefs in the efficacy of the control agenda, it is critical to assist them in beginning to explore an alternative way of living and instil hope for their future. This alternative approach begins with willingness, a value-based choice to expose oneself to unpleasant thoughts, emotions, sensations, or feared situations/content in order to engage in meaningful activities and relationships. Patients considering suicide are often suffering immensely, so simply suggesting that they confront and accept their distress is unlikely to be effective. Experiential work (i.e. metaphors, analogies, and exercises) is necessary to assist the patient in exploring the possibility of willingness and acceptance (Hayes et al., 2012) and clarifying the values and value-consistent behaviours this willingness would be in service of.

It is vital to understand what types of unwanted thoughts, emotions, and sensations drive the patient's desire for death, so that over time the patient can develop the willingness and capacity to hold the internal experiences they are trying to get rid of.

The nature of prolonged emotional avoidance is such that patients may begin to lose contact with their emotions. Using a feeling wheel (Fig. 26.2), the therapist and patient can identify feelings the patient is unwilling to experience. Conversations

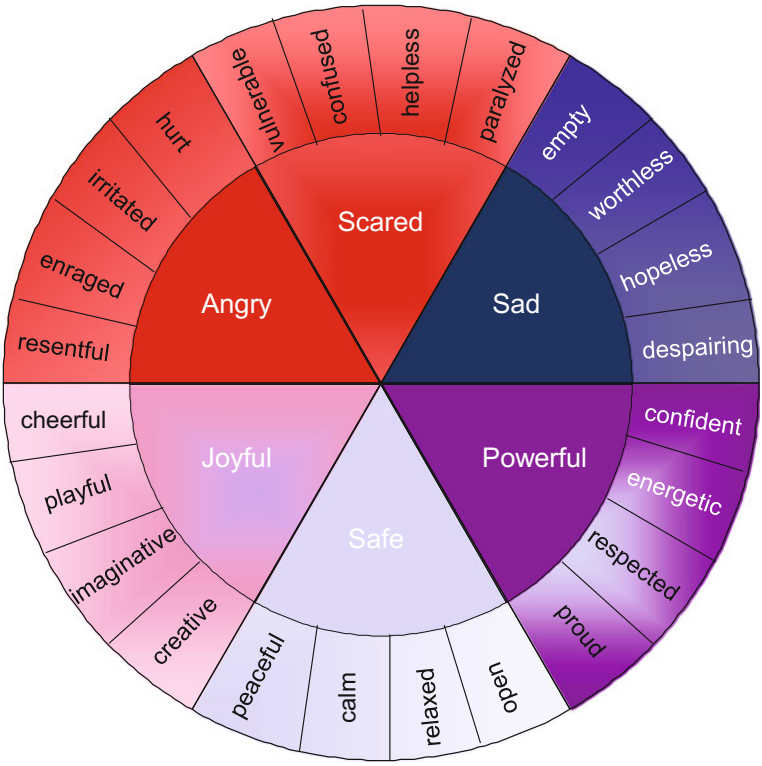

Fig. 26.2 Feeling wheel. *Source* Cloitre's (2013) Skills Training in Affective and Interpersonal Regulation (STAIR) https://www.ptsd.va.gov/apps/STAIR/Session2/docs/Session2Handout_FeelingsWheelColor.pdf

about the relationships between different feelings (how we know of joy because we have felt despair) can be useful. A coin metaphor can be used to illustrate how we cannot get rid of sadness (heads) unless we also get rid of happiness (tails).

Assisting the patient in personifying and physicalizing thoughts and emotions can be an effective way to further describe unwanted experiences and objectively label these thoughts and emotions when they show up in session (e.g. *Here comes failure Frank again*). Additionally, the personifications can be worked into experiential exercises like the "passengers on the bus" metaphor (Hayes et al., 2012) to illustrate the necessity of willingness. In the metaphor, the patient is driving a bus in a valued direction (e.g. towards independence), but the bus is full of personified unwanted thoughts and emotions. Failure Frank and his cronies threaten to hurt the patient, unless he drives in the direction they demand (e.g. away from independence). When he veers off course, they quiet down, but he is not living the life he wants to live. Although the passengers are unpleasant, based on the patient's experience, he knows that thoughts and emotions cannot physically hurt him. The patient must be willing to listen to the threats of the passengers in order to drive the bus towards independence.

It is important to note that it takes time to develop the ability to consistently meet difficult experiences with willingness because the control agenda has been well practiced. Clinician disclosures that they also get stuck in avoidance/control strategies are useful because it normalizes the patient's experience. Such disclosures also send an important message that this is not a problem reserved for people in therapy or with mental health diagnoses, but for all humans who live in cultures that reinforce the notion that one is only normal if they are happy. The patient and clinician can work to minimize barriers to willingness and value-based behaviour, such as fusion, impulsivity, and reactivity of suicidal thoughts and behaviours.

Targeting the Fusion, Impulsivity, and Reactivity of Suicidal Thinking

ACT includes a host of techniques to facilitate patients' ability to experience distress without needing to react to it or avoid it. Similarly, ACT techniques can be used to undermine the control of rigidly held beliefs and suicidal thinking (e.g. "I can't keep living with this pain", "killing myself is the *only* way out of this problem"). This work can free the patient from engaging in the control agenda, create the opportunity for flexible thinking, and facilitate more meaningful volitional behaviour. ACT targets avoidant/reactive behaviour and unhelpful cognitions by teaching patients how to practice mindful self-observation. Patients learn how to stay focused on the present moment and observe their thoughts, allowing a thought to just be a thought, rather than necessarily an accurate reflection of reality. This can give patients the ability to pause and choose their actions instead of simply reacting. Thus, mindfulness exercises are typically engaged in every session and assigned as daily home practice.

When working with patients who are considering suicide, it is particularly important to directly target thinking and conditional rules the patient associates with reasons for dying. These thoughts should be identified and objectified when they arise to create a new posture of noticing thoughts as mental events rather than necessarily believing them. One method is to use objectifying language throughout therapy. ACT therapists often respond to the patient with phrases like: "You can thank your mind for that", "So your mind is saying…", "Is that your *everything-is-hopeless* thought creeping up again?". If patients struggle with continuing to view thoughts as literal truths, it can be powerful to pull from patients' experiences of times their minds were wrong despite a sense of certainty (e.g. about where they left their keys or predictions that others were mad at them) to create the possibility that their mind might also be wrong when it says suicide is the only answer.

Suicide-related cognitions can also be targeted in defusion exercises. For example, therapists can have patients write suicide-related thoughts on index cards and then manipulate the way the patient is holding the cards to illustrate the different relationships or stances we can take when interacting with these thoughts (e.g. becoming engrossed in them and pulled away from present-moment-valued

activities that would usually serve as protective factors or holding them lightly on the lap and continuing to engage in meaningful conversation even though they are there in the background). The way the patient reads the thoughts can also be manipulated (e.g. comparing the impact of reading the thoughts as written versus adding "*I notice I'm having the thought that*…."; see Harris, 2009).

Developing and Strengthening a Value-Driven Life

Identifying values and setting goals for committed action in accordance with those values enhances protective factors. This part of ACT work is powerful for suicide prevention because of its focus on engaging in new adaptive behaviours and constructing a meaningful life, rather than merely getting rid of things that death could functionally get rid of too (e.g. depression, substance use, thoughts about suicide). For example, one patient observed that living his value of health by going to the gym regularly led to meeting other people interested in their own health who then invited him to join the group for a baseball game. The protective factor of social support and belonging continued to grow from value-based behaviour.

There are many techniques for identifying core values and enhancing committed action (see values assessment section). Key questions to ask the client in identifying values include "What would you like your life to stand for?" "Can you name some things you care about that I could not pay you enough to stop caring about?" ACT clinicians use metaphors and imaginal exercises to really flesh this out. For example, the 80th birthday party exercise asks the client to imagine hearing a speech from someone they care about who knows them well. The patient is encouraged to imagine this person saying whatever it is that the patient would most love to hear them say about who the patient is and what the patient stands for. Clinicians can point out that people rarely note what a nice car someone drives or how much money they earn, but are more likely to describe being a loving family member, a life-long learner, lover of nature, etc. (Harris, 2009).

The rubber meets the road when people put values into action. Examples include showing you care about others by treating them with kindness and compassion; working out to bring alive the value of personal health; reading to enact the value of personal growth, etc. Collaboratively assigning action homework between sessions allows the clinician to guide the patient in learning how to identify and commit to valued actions, and to foresee potential barriers (e.g. unwanted emotions) and work around them.

ACT clients develop a new way of guiding their everyday behaviour: asking themselves if their next action serves their values or serves the control agenda. Their internal compass that used to be bounded by psychological rigidity and guide them to experiential avoidance is now freed by psychological flexibility to guide them towards core values and a life worth living. Once clients have learned how to hold unwanted experiences while continuing to move in valued directions, they can build a life they will want to live and suicide will no longer be a viable option.

References

Baer, R. A., Smith, G. T., Hopkins, J., Krietemeyer, J., & Toney, L. (2006). Using self-report assessment methods to explore facets of mindfulness. *Assessment, 13*(1), 27–45.

Baer, R. A., Smith, G. T., Lykins, E., Button, D., Krietemeyer, J., Sauer, S., … Williams, J. M. G. (2008). Construct validity of the five facet mindfulness questionnaire in meditating and non-meditating samples. *Assessment, 15*(3), 329–342.

Bahraini, N. H., Devore, M. D., Monteith, L. L., Forster, J. E., Bensen, S., & Brenner, L. A. (2013). The role of value importance and success in understanding suicidal ideation among Veterans. *Journal of Contextual Behavioral Science, 2*(1), 31–38.

Bahraini, N. H., Gerber, H. R., Monteith, L. L., Forster, J. E., Hostetter, T. A., & Brenner, L. A. (2016). Experiential avoidance and suicidal ideation among veterans exposed to combat Trauma. Manuscript in preparation.

Bardeen, J. R., & Fergus, T. A. (2016). The interactive effect of cognitive fusion and experiential avoidance on anxiety, depression, and posttraumatic stress symptoms. *Journal of Contextual Behavioral Science, 5*(1), 1–6.

Beck, A. T., Kovacs, M., & Weissman, A. (1979). Assessment of suicidal intention: The scale for suicide ideation. *Journal of Consulting and Clinical Psychology, 47*(2), 343–352.

Beck, A. T., Steer, R. A., Kovacs, M., & Garrison, B. (1985). Hopelessness and eventual suicide: a 10-year prospective study of patients hospitalized with suicidal ideation. *American Journal of Psychiatry, 142*(5), 559–563.

Bishop, S. R., Lau, M., Shapiro, S., Carlson, L., Anderson, N. D., Carmody, J., Segal, Z. V., Abbey, S. … Devins, G. (2004). Mindfulness: a proposed operational definition. *Clinical Psychology: Science and Practice, 11*(3), 230–241.

Blackledge, J. T., & Ciarocchi, J. (2006). *Personal values questionnaire*. Wollongong, Australia: Department of Psychology, University of Wollongong, Australia.

Bond, F. W., Hayes, S. C., Baer, R. A., Carpenter, K. M., Guenole, N., Orcutt, H. K., … Zettle, R. D. (2011). Preliminary psychometric properties of the acceptance and action questionniare-II: A revised measure of psychological flexibility and experiential avoidance. *Behavior Therapy, 42*(4), 676–688.

Branstetter-Rost, A., Cushing, C., & Douleh, T. (2009). Personal values and pain tolerance: Does a values intervention add to acceptance? *The Journal of Pain, 10*(8), 887–892.

Brown, K. W., & Ryan, R. M. (2003). The benefits of being present: Mindfulness and its role in psychological well-being. *Journal of Personality and Social Psychology, 84*(4), 822–848.

Bryan, C. J., Ray-Sannerud, B. R., & Heron, E. A. (2015). Psychological flexibility as a dimension of resilience for posttraumatic stress disorder, depression, and risk for suicidal ideation among Air Force personnel. *Journal of Contextual Behavioral Science, 4*(4), 263–268.

Cardaciotto, L., Herbert, J. D., Forman, E. M., Moitra, E., & Farrow, V. (2008). The assessment of present-moment awareness and acceptance: The Philadelphia mindfulness scale. *Assessment, 15*(2), 204–223.

Chesin, M. S., Interian, A., Kline, A., Benjamin-Phillips, C., Latorre, M., & Stanley, B. (2016). Reviewing mindfulness-based interventions for suicidal behaviour. *Archives of Suicide Research, 20*(4), 507–527.

Chesin, M. S., & Jeglic, E. L. (2016). Factors associated with recurrent suicidal ideation among racially and ethnically diverse college students with a history of suicide attempt: The role of mindfulness. *Archives of Suicide Research, 20*(1), 29–44.

Chesin, M. S., Sonmez, C. C., Benjamin-Phillips, C. A., Beeler, B., Brodsky, B. S., & Stanley, B. (2015). Preliminary effectiveness of adjunct mindfulness-based cognitive therapy to prevent suicidal behaviour in outpatients who are at elevated suicide risk. *Mindfulness, 6*(6), 1345–1355.

Chiles, J. A., & Strosahl, K. D. (2005). *Clinical manual for assessment and treatment of suicidal patients*. Arlington, VA: American Psychiatric Publishing.

Chioqueta, A. P., & Stiles, T. C. (2007). Dimensions of the dysfunctional attitude scale (DAS-A) and the automatic thoughts questionnaire (ATQ-30) as cognitive vulnerability factors in

the development of suicide ideation. *Behavioural and Cognitive Psychotherapy, 35*(05), 579–589.

Ciarrochi, J., & Bailey, A. (2008). *A CBT-practitioner's guide to ACT: How to bridge the gap between cognitive behavioral therapy and acceptance and commitment therapy*. Oakland, CA: New Harbinger Publications Inc.

Cloitre, M. (2013, August). Skills Training in Affect and Interpersonal Regulation (STAIR). Retrieved from https://www.ptsd.va.gov/professional/continuing_ed/STAIR_online_training.asp.

Coleman, D., & Casey, J. T. (2007). Therapeutic mechanisms of suicidal ideation: The influence of changes in automatic thoughts and immature defenses. *Crisis, 28*(4), 198–203.

Cougle, J. R., Keough, M. E., Riccardi, C. J., & Sachs-Ericsson, N. (2009). Anxiety disorders and suicidality in the national comorbidity survey-replication. *Journal of Psychiatric Research, 43*(9), 825–829.

Ducasse, D., René, E., Béziat, S., Guillaume, S., Courtet, P., & Olié, E. (2014). Acceptance and Commitment Therapy for management of suicidal patients: A pilot study. *Psychotherapy and Psychosomatics, 83*(6), 374–376.

Ellis, T. E., & Rufino, K. A. (2016). Change in experiential avoidance is associated with reduced suicidal ideation over the course of psychiatric hospitalization. *Archives of Suicide Research, 20*(3), 426–437.

Forkmann, T., Wichers, M., Geschwind, N., Peeters, F., van Os, J., Mainz, V., & Collip, D. (2014). Effects of mindfulness-based cognitive therapy on self-reported suicidal ideation: Results from a randomized controlled trial in patients with residual depressive symptoms. *Comprehensive Psychiatry, 55*(8), 1883–1890.

Fresco, D. M., Moore, M. T., van Delmen, M. H. M., Segal, Z. V., Ma, S. H., Teasdale, J. D., & Williams, J.M.G. (2007). Initial psychometric properties of the experiences questionnaire: Validation of a self-report measure of decentering. *Behavior Therapy, 38*(3), 234–246.

Gillanders, D. T., Bolderston, H., Bond, F. W., Dempster, M., Flaxman, P. E., Campbell, L., … Remingotn, B. (2014). The development and validation of the cognitive fusion questionnaire. *Behavior Therapy, 45*(1), 83–101.

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation and dysregulation: Development, factor structure, and initial validation of the difficulties in emotion regulation scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41–54.

Guerreiro, D. F., Cruz, D., Frasquilho, D., Santos, J. C., Figueira, M. L., & Sampaio, D. (2013). Association between deliberate self-harm and coping in adolescent: A critical review of the last 10 years' literature. *Archives of Suicide Research, 17*(2), 91–105.

Gutierrez, P. M., Osman, A., Barrios, F. X., & Kopper, B. A. (2001). Development and initial validation of the Self-Harm Behavior Questionnaire. *Journal of Personality Assessment, 77*(3), 475–490.

Harris, R. (2009). The house of ACT. In C. Honeychurch (Ed.), *ACT made simple* (pp. 33–39). Oakland, CA: New Harbinger Publications Inc.

Hayes, S. C., Bissett, R., Roget, N., Padilla, M., Kohlenberg, B. S., Fisher, G., … Niccolls, R. (2004). The impact of acceptance and commitment training and multicultural training on the stigmatizing attitudes and professional burnout of substance abuse counselors. *Behavior Therapy, 35*(4), 821–835.

Hayes, S. C., Levin, M. E., Plumb-Vilardaga, J., Villatte, J. L., & Pistorello, J. (2013). Acceptance and Commitment Therapy and contextual behavioural science: Examining the progress of a distinctive model of behavioral and cognitive therapy. *Behavior Therapy, 44*(2), 180–198.

Hayes, S. C., Luoma, J. B., Bond, F. W., Masuda, A., & Lillis, J. (2006). Acceptance and commitment therapy: Model, processes and outcomes. *Behavior Research and Therapy, 44*(1), 1–25.

Hayes, S. C., Pistorello, J., & Biglan, A. (2008). Acceptance and commitment therapy: Model, data, and extension to the prevention of suicide. *Brazilian Journal of Behavioral and Cognitive Therapy, 10*(1), 81–102.

Hayes, S. C., Pistorello, J., & Levin, M. E. (2012a). Acceptance and commitment therapy as a unified model of behavior change. *The Counseling Psychologist, 40*(7), 976–1002.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (2012b). *Acceptance and commitment therapy: The process and practice of mindful change* (2nd ed.). New York, NY: The Guilford Press.

Hayes, S. C., Wilson, K. G., Gifford, E. V., Follette, V. M., & Strosahl, K. (1996). Experiential avoidance and behavioural disorders: A functional dimensional approach to diagnosis and treatment. *Journal of Consulting and Clinical Psychology, 64*(6), 1152–1168.

Herzberg, K. N., Sheppard, S. C., Forsyth, J. P., Credé, M., Earleywine, M., & Eifert, G. H. (2012). The Believability of Anxious Feelings and Thoughts Questionnaire (BAFT): A psychometric evaluation of cognitive fusion in a nonclinical and highly anxious community sample. *Psychological Assessment, 24*(4), 877–891.

Jain, S., Shapiro, S. L., Swanick, S., Roesch, S. C., Mills, P. J., Bell, I., & Schwartz, G. E. (2007). A randomized controlled trial of mindfulness meditation versus relaxation training: Effects on distress, positive states of mind, rumination, and distraction. *Annals of Behavioral Medicine, 33*(1), 11–21.

Josepho, S. A., & Plutchik, R. (1994). Stress, coping, and suicide risk in psychiatric in patients. *Suicide and Life Threatening Behavior, 24*(1), 48–57.

Keilp, J. G., Sackheim, H. A., Brodsky, B. S., Oquendo, M. A., Malone, K. M., & Mann, J. J. (2001). Neuropsychological dysfunction in depressed suicide attempters. *American Journal of Psychiatry, 158*(5), 735–741.

Lamis, D. A., & Dvorak, R. D. (2014). Mindfulness, nonattachment, and suicide rumination in college students: The mediating role of depressive symptoms. *Mindfulness, 5*(5), 487–496.

Linehan, M. M., & Comtois, K. (1996). *Lifetime parasuicide history*. Seattle, WA: University of Washington. Unpublished work.

Lundgren, T., Luoma, J. B., Dahl, J., Strosahl, K., & Melin, L. (2012). The bull's eye values survey: A psychometric evaluation. *Cognitive and Behavioral Practice, 19*(4), 518–526.

Luoma, J. B., & Vilatte, J. L. (2012). Mindfulness in the treatment of suicidal individuals. *Cognitive and Behavioral Practice, 19*(2), 265–276.

Marzuk, P. M., Hartwell, N., Leon, A. C., & Portera, L. (2005). Executive functioning in depressed patients with suicidal ideation. *Acta Psychiatrica Scandinavica, 112*(4), 294–301.

Miranda, R., Valderrama, J., Tsypes, A., Gadol, E., & Gallagher, M. (2013). Cognitive inflexibility and suicidal ideation: Mediating role of brooding and hopelessness. *Psychiatry Research, 210*(1), 174–181.

Mohammadkhani, P., Khanipour, H., Azadmehr, H., Mobramm, A., & Naseri, E. (2015). Trait mindfulness, reasons for living, and general symptom severity as predictors of suicide probability in males with substance abuse or dependence. *Iranian Journal of Psychiatry, 10*(1), 56–63.

Monteith, L. L., Pease, J. L., Forster, J. E., Homaifar, B. Y., & Bahraini, N. H. (2015). Values as moderators of the association between interpersonal-psychological constructs and suicidal ideation among veterans. *Archives of Suicide Research, 19*(4), 122–134.

Morrison, R., & O'Connor, R. C. (2011). A systematic review of the relationship between rumination and suicidality. *Suicide and Life Threatening Behavior, 38*(5), 523–538.

Neuringer, C., & Lettieri, D. J. (1971). Cognition, attitude, and affect in suicidal individuals. *Suicide and Life Threatening Behavior, 1*(2), 106–124.

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., … Williams, D. (2008a). Cross-national prevalence and risk factor for suicidal ideation, plans, and attempts. *British Journal of Psychiatry, 192*(2), 98–105.

Nock, M. K., Borges, G., Bromet, E. J., Cha, C. B., Kessler, R. C., & Lee, S. (2008b). Suicide and suicidal behaviour. *Epidemiologic Reviews, 30*(1), 133–154.

Nock, M. K., Holmberg, E. B., Photos, V. I., & Michel, B. D. (2007). Self-injurious thoughts and behaviours interview: Development, reliability, and validity in an adolescent sample. *Psychological Assessment, 19*(3), 309–317.

Norton, P. J., Temple, S. R., & Pettit, J. W. (2008). Suicidal ideation and anxiety disorders: Elevated risk or artifact of comorbid depression? *Journal of Behavior Therapy and Experimental Psychiatry, 39*(4), 515–525.

Perrah, M., & Wichman, H. (2010). Cognitive rigidity in suicide attempters. *Suicide and Life Threatening Behavior, 17*(3), 251–255.

Pettit, J. W., Temple, S. R., Norton, P. J., Yaroslavsky, B. S., Grover, K. E., Morgan, S. T., & Schatte, D.J. (2009). Thought suppression and suicidal ideation: Preliminary evidence in support of a robust association. *Depression and Anxiety, 26*(8), 758–763.

Plumb, J. C., Stewart, I., Dahl, J., & Lundgren, T. (2009). In search of meaning: Values in modern clinic behaviour analysis. *The Behavior Analyst, 32*(1), 85–103.

Posner, K., Brown, G. K., Stanley, B., Brent, D. A., Yershova, K. V., Oquendo, M. A., … Mann, J. J. (2011). The columbia-suicide severity rating scale: Initial validity and internal consistency findings from three multisite studies with adolescents and adults. *American Journal of Psychiatry, 168*, 1266–1277.

Salters-Pedneault, K., Tull, M. T., & Roemer, L. (2004). The role of avoidance of emotional material in the anxiety disorders. *Applied Preventive Psychology, 11*(2), 95–114.

Sandoz, E. K., & Hebert, E. R. (2015). Meaningful, reminiscent, and evocative: An initial examination of four methods of selecting idiographic values-relevant stimuli. *Journal of Contextual Behavioral Science, 4*(4), 277–280.

Serpa, G. J., Taylor, S. L., & Tillisch, K. (2014). Mindfulness-based stress reduction (MBSR) reduces anxiety, depression, and suicidal ideation in veterans. *Medical Care, 52*(12), 19–24.

Shafran, R., Thordarson, D. S., & Rachman, S. (1996). Thought action fusion in obsessive-compulsive disorder. *Journal of Anxiety Disorders, 10*(5), 379–391.

Stanley, B., & Brown, G. K. (2012). Safety planning intervention: A brief intervention to mitigate suicide risk. *Cognitive and Behavioral Practice, 19*(2), 256–264.

Strosahl, K., Robinson, P., & Gustavsson, T. (2012). *Brief interventions for radical change: Principles and practice of focused acceptance and commitment therapy*. Oakland, CA: New Harbinger Publications.

Walser, R. D., Garvert, D. W., Karlin, B. E., Trockel, M., Ryu, D. M., & Taylor, C. B. (2015). Effectiveness of acceptance and commitment therapy in treating depression and suicidal ideation in veterans. *Behaviour Research and Therapy, 74,* 25–31.

Wegner, D. M. (1994). Ironic processes of mental control. *Psychological Review, 101*(1), 34–52.

Williams, M. J. G., & Broadbent, K. (1986). Distraction by emotional stimuli: Use of a stroop task with suicide attempters. *British Journal of Clinical Psychology, 25*(2), 101–110.

Williams, M. J. G., Duggan, D. S., Crane, C., & Hepburn, S. (2011). Modes of mind in suicidal processes: The potential role of mindfulness in changing minds. In R. C. O'Connor, S. Platt, & J. Gordon (Eds.), *International handbook of suicide prevention: Research, policy, and practice* (pp. 401–418). Oxford, UK: Wiley.

Wilson, K. G., Sandoz, E. K., Kitchens, J., & Roberts, M. E. (2010). The valued living questionnaire: Defining and measuring valued action within a behavioral framework. *The Psychological Record, 60*(2), 249–272.

Wilson, K. G., Stelzer, J., Bergman, J. N., Kral, M. J., Inayatullah, M., & Elliott, C. A. (1995). Problem solving, stress, and coping in adolescent suicide attempts. *Suicide and Life Threatening Behavior, 25*(2), 241–252.

World Health Organization (WHO). (2016). "Suicide Data". Retrived June 22, 2016 from http://www.who.int/mental_health/prevention/suicide/suicideprevent/en/.

Zettle, R. D., & Hayes, S. C. (1986). Dysfunctional control by client verbal behavior: The context of reason giving. *The Analysis of Verbal Behavior, 4,* 30–38.

Chapter 27
Attachment-Based Family Therapy for Depressed and Suicidal Adolescents: Development, Research and Clinical Practice

Maliha Ibrahim, Jody Russon and Guy Diamond

Every 40 seconds, an individual takes his or her own life (Word Health Organisation (WHO), 2015). Unfortunately, a large percentage of these are adolescents. Suicide is the second leading cause of death among youth aged 10–24 (Centre for disease control (CDC), 2013). Approximately 20% of adolescents seriously consider killing themselves at some point during the ages of 12–18. Over one million of these youths attempt suicide each year and between 1600 and 2000 die by suicide (American Academy of Child & Adolescent Psychiatry (AACAP), 2001; Grunbaum et al., 2002; Hamilton & Hamilton, 2005). In addition, suicide bears vast socio-economic societal costs as a result of medical expenses, missed work, and school/college dropout (CDC, 2013). Given the high burden of suicide on sociological, economic, and community accounts, identification of effective prevention and treatment strategies for this population is warranted (CDC, 2013; Nock et al., 2008)

Unfortunately, scientists have given limited attention to developing effective treatments for youth and their families (Olfson, Blanco, Liu, Moreno, & Laje, 2006; Stanley et al., 2009). Some clinical trials have been carried out but results have been

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inconclusive and show small effect sizes (Asarnow et al., 2011; Brent, Baugher, Chen, & Chiappetta, 2009; Van Heeringen & Marusic, 2003). Research has been conducted using various clinical approaches including dialectical behaviour therapy, CBT, and multi-systemic therapy (Brent et al., 2009; Ougrin, Tranah, Leigh, Taylor, & Asarnow, 2012; Rowe et al., 2014). Unfortunately, they conclude that few treatments have enough positive data to meet the standards of being an empirically supported treatment. Furthermore, promising findings in some research studies have not been successfully replicated when carried out by independent researchers elsewhere (Hazell, 2009). There also exists widespread debate over whether medication should be used to treat suicidal ideation as it could potentially increase risk for suicidal behaviour (Hammad, Laughren, & Racoosin, 2006). Given these findings, there remains a need for studies that supplement or augment these treatments in order to increase their potency.

One area that has been overlooked is a focus on interventions that include families as one of the treatment targets. The quality of the adolescent–parent relationship might serve as both a risk and protective factor for adolescent suicidality. In regard to risk factors, extensive research indicates that adolescent suicidal ideation and attempts are more frequent in families characterized as low in cohesion and parental responsiveness and high in conflict (Brent et al., 2009). Prospective and cross-sectional studies in community and clinical samples have linked parental criticism, emotional unresponsiveness, lack of care and support, rejection and parental control to adolescent suicidal ideation and attempts (Brent et al., 2009; Kõlves, Ide, & Leo, 2010). Furthermore, at the crucial juncture of adolescent identity development, poor problem solving between adolescents and parents has been shown to exacerbate suicidal ideation and behaviour (Rudloph et al., 2000). In contrast, family protective factors include parental emotional attunement, support, and trust. These positive family factors have been associated with reduced risk for suicide (Sheeber, Davis, Leve, Hyman, & Tidesly, 2007).

Increasingly, interventions with adolescents have included families in treatment. Most involve family psycho-education or family information sessions combined with CBT and medication (Rotherram-Borus, Piacentinit, Miller, Graae, & Castro-Blanco, 1994; Asarnowet al., 2011). Few studies have actively involved families in therapy and focused on family dynamics themselves (Diamond, 2005). Building family resources and skills as well as understanding relational dynamics in therapy have found significant improvements as evidenced by reduced suicidal behaviour and with gains in social adjustment (Allen, 2009). Family-focused interventions also promote the socio-ecological model of behaviour and motivate adolescents to cope in healthier ways.

Two relational theories, Joiner's interpersonal theory and Attachment theory, help frame how parent–adolescent relationships, might be beneficial for treatment with suicidal adolescents. Joiner, Van Orden, Witte, and Rudd (2009) Interpersonal theory of suicide demonstrates that thwarted belongingness and perceived burdensomeness are strong contributors to suicidal behaviour (Orden, Lynam, Hollar, & Joiner, 2006). Thwarted belongingness is the sense that one is separate or distant from friends,

family, and social connections. Burdensomeness pertains to an individual's feeling they are an inconvenience to family and friends who would be better off without him/her. The helplessness/hopelessness felt by these adolescents cascades into other systems such as school, peers, and extended family (Beautrais, 2004).

Attachment theory also sheds light on why families might be an important target in youth suicide treatment. The importance of appropriate attachment during adolescence has been well documented (Allen, 2009; Zimmerman & Becker-Stoll, 2002). The core premise in this framework is that secure attachment relationships are marked by confidence in the caregiver's availability to provide support and protection (Bowlby, 1988; Kobak, Cassidy, Lyons-Ruth, & Ziv, 2006; Sroufe, 2005). Secure attachment enables more direct communication between adolescent and parent which fosters perspective taking, emotional regulation, and development of problem-solving skills or competencies which protect against suicidal ideation and depression (Kobak et al., 2006). The presence of secure attachment solidifies the foundation for an internal capacity to cooperatively resolve conflicts with caregivers, other adults (e.g. teachers), peers, and romantic partners. In contrast, a caretaker's unavailability and unresponsiveness leads to negative expectancies for caregiver availability and problem-solving strategies characterized by disengagement, emotional dysregulation, conflict avoidance, aggression, and withdrawal (Kobak et al., 2006). Insecure attachment has repeatedly been associated with depression and suicidality in adolescents and adults (Kobak et al., 2006).

Given the importance of family relationships in promoting health adolescent development, more treatments should consider incorporating interventions that target this domain.

Attachment-Based Family Therapy

Attachment-Based Family Therapy (ABFT) is an empirically supported psychotherapy model designed to improve family relationships in order to help adolescent's better cope with depression, suicidal ideation, and trauma. ABFT is an attachment-informed, developmental therapy that fits within the modern tradition of empirically informed family therapy practices along with Multi-systemic Therapy (MST) (Henggeler, Schoenwald, Borduin, Rowland, & Cunningham, 1998) and Multi-Dimensional Family Therapy (MDFT) (Diamond & Liddle, 1999). ABFT is an integrative model and incorporates components of several family and individual therapy approaches.

Although influenced by other theoretical approaches and family therapy traditions (Boszormenyi-Nagy & Spark, 1973; Johnson, 2004; Johnson & Greenberg, 1985; Minuchin, 1974), ABFT has its basis in attachment theory. It operates under the assumption that a child's sense of security and development depends on parental availability and protection (Bowlby, 1988; Rees, 2005; Atilli, Virmigli, & Roazzi, 2011). Although it is important in infancy, attachment is relevant throughout one's lifetime and can determine the quality of other life relationships (Zayas, Mischel,

Shoda, & Aber, 2011). In adolescents, healthy attachment promotes autonomy, self-esteem, emotional regulation, and positive peer relations. In adults, attachment style has been linked to intimacy in relationships and styles of parenting (Fonagy, 1997; Fonagy, Gergely, Jurist, & Target, 2002). The ability to communicate vulnerable emotions without fear of rejection, criticism, or threat of abandonment is the basis of healthy attachment (Bowlby, 1988; Johnson, 2004).

Ruptured attachment with parents and a negative family environment inhibit children from developing internal and interpersonal coping skills. These skills are needed to buffer against biological vulnerabilities and social stressors that can cause or exacerbate depression and struggles with suicidal ideation (Rudloph et al., 2000). Clinically, families often express underlying attachment ruptures through every day, conflictual interaction about chores, curfews, and school. These stressful interactions with parents are associated with adolescents' depression, engagement in risky behaviour, substance use, and unsafe sexual practices (Nock et al., 2008).

The underlying assumption of ABFT is that insecure attachment bonds, characterized by high conflict, harsh criticism, and/or low affective attunement, can lead to feelings of emotional neglect, abandonment, rejection, and disappointment (Bowlby, 1988). Furthermore parental psychopathology or parents' own insecure attachments can spill over into ineffective modes of parenting (Kaslow & Racusin, 1994; Sheeber et al., 2007). An equally important aspect is that attachment ruptures can be repaired (e.g. parents can become better caregivers and trust can be built or rebuilt).

The goal of ABFT is to promote security in the relationship between parent and child, target current or prior ruptures in attachment security, and develop models of successful emotional attunement (Diamond, 2005; Diamond et al., 2010). Therapists accomplish this by systematically identifying and repairing attachment ruptures, core family conflicts (e.g. physical or emotional abuse, neglect, and/or abandonment), and associated vulnerable emotions such as sadness, fear, and disappointment. Discussing these vulnerable feelings against the frame of attachment needs can create resolution, or even just recognition, of these family traumas that can help re-establish the family as a secure base. Once this secure haven is created, it can serve as a safety net that buffers against feelings of depression and suicidal ideation. Parents can once again provide support and guidance to their adolescent as he or she strives for autonomy and competency. Adolescents can then continue on a normative developmental trajectory (Diamond, Diamond, & Levy, 2014).

The Clinical Model

The treatment manual is organized around five treatment tasks (Diamond et al., 2014). The clinical model of these tasks is detailed in Table 27.1.

Table 27.1 Targets and proposed mechanisms of change

Problem state	Treatment tasks	Expected outcomes
Parent criticism/hostility	Relational reframe	Reduce blame/increase mutual respect
Low adolescent motivation	Alliance building	Bonding, identifying engagement goals, commitment to treatment
Parental stress, ineffective parenting	Parent alliance building	Promote emotional, authoritative parenting, emotional coaching
Family disengagement	Reattachment task	Rebuilding trust and dependability
Negative self-concept	Promoting competency task	Increasing autonomy

Source Diamond, Diamond, and Levy (2014)

Treatment Tasks

Repairing attachment and promoting autonomy are the overarching goals of ABFT. These goals are achieved through five specific treatment tasks. These tasks are described in detail below.

The *Relational Reframe Task* sets the foundation for treatment by shifting the family's focus from "fixing" the adolescent to improving family relationships (Siqueland, Rynn, & Diamond, 2005). The Relational Reframe is completed in one session, typically the first therapy session. After a comprehensive history has been taken, the therapist intentionally shifts the focus on to the family relationships and addresses what gets in the way of the parents being a resource for the adolescent who needs support when feeling suicidal. Working on family relationships is introduced as the first goal of therapy and family members contract to work on their relationship with the therapist.

The *Adolescent Alliance-Building Task* is conducted individually with the adolescent and typically lasts between two and four sessions. It focuses on building a therapist–adolescent bond as the therapist begins acquiring information on the context of the adolescents' life, their values, and important aspects of identity. The history of the depression is obtained and the therapist helps the adolescent articulate their suicide narrative. The therapist then shifts to understanding parent–adolescent ruptures that have inhibited trust in the relationship and have caused distress. He/she then proceeds to help adolescents identify causes of their pain and the consequences of relational ruptures. The therapist punctuates the need to discuss these ruptures with their parents. With the adolescent's agreement, the therapist prepares him or her to discuss these issues with the parents. During the *Alliance-Building Task*, the therapist serves as a secure base for the adolescent as they learn to express their personal narrative in a regulated way.

The *Parent Alliance-Building Task* occurs simultaneously with the *Adolescent Alliance-Building Task* and also lasts between two and four sessions. It involves meeting with the parents alone and begins with an exploration of the parents' current stressors. The therapist helps the parent's gain insight on how their stressors

may be affecting their parenting and their child's experience. In order to help the parent's gain empathy for the child's experience and motivate primal caregiving instincts, the therapist explores the parents' own history of attachment disappointments (Feder & Diamond, 2016). The therapist helps the parents understand how these experiences in form the parents' view of their adolescent and their parenting style. Consequently, parents become more receptive and promote communication. The therapist can then equip the parents by emotionally coaching them to convey this empathetic and sensitive caregiving to their adolescent when reunited in sessions.

The *Attachment Task* serves as a corrective attachment experience between parent and child. This task typically lasts between one and four sessions depending on the complexity and the amount of ruptures being discussed. The task begins with the adolescent disclosing previously unaddressed hurt, anger, or pain to their parents. These ruptures may include feelings or experiences involving betrayal, abuse, abandonment, neglect, or rejection. Once the parents respond empathetically and offer support, the adolescent is encouraged to deepen these painful experiences by rooting them in sadness and disappointment that contributed to their suicidality. The therapist aids the parents to be empathetic and supportive in this process. Parents often offer sincere remorse for letting their adolescent feel such pain, which helps the family reach common ground and start the process of repairing the attachment bond. Although many of these ruptures are complex and may not achieve immediate resolution, open discussion serves to create trust, diffuse tension, and improve affect regulation. The adolescent can now start to see the parents as a resource and can digest more parental authority, even becoming more sensitive to parental needs (Siqueland et al., 2005).

The final task, *Promoting Competence*, fosters the adolescent's healthy expression of self and aids in the development of autonomy. This task allows the family to address a broader range of topics on the adolescent's emerging identity now that a secure base has been established or restored. *Promoting Competence* tasks typically involve five or more sessions where parent and adolescent are encouraged to discuss topics such as social support systems, school problems, hobbies, self-esteem, relationships, sexuality, and sibling concerns. Families can also talk about identity issues such as religious beliefs and affiliations, ethnicity, gender and sexual identity. It is also a chance parents to negotiate the adolescent's responsibilities within the home, such as rules and chores.

Overview of Research

ABFT has been supported by a decade of empirical research. In this section, we will review outcome and effectiveness research. Table 27.2 provides an overview of each of these studies. The first pilot study for ABFT was conducted in 2002 and was funded by the American Foundation for Suicide Prevention (AFSP) and the National Alliance for Research in Schizophrenia and Depression (NARSAD)

Table 27.2 Details of research studies in ABFT

Study reviewed and year	Type	Major outcome measures	Reliability of measures (in-sample)	Manual adaptations/norms	Demographics
Diamond et al. (2002)	Open trial	Beck Depression Inventory (BDI), Self-Report of Family Functioning (SSRF)	α = 0.88, 0.89, 0.95 respectively	Not done	78% female & 69% low income, inter-city African American community
Diamond et al. (2010)	Randomized Control Trial (RCT)	BDI, Scale for Suicidal Ideation (SSI), Suicidal Ideation Questionnaire (SIQ)	α = 0.91, 0.93, 0.95 respectively	Not done	66% female, 74% low income, 58% African American, 28% hispanic
Diamond et al. (2007)	Fidelity process research	Therapist Behaviour Rating Scale (TBRS)	α = 0.92	n/a	Tapes of sessions from above studies
Diamond et al. (2010)	ABFT LGBQ population	SIQ, BDI, Relationship Structures Questionnaire (RSQ)	α = 0.94, 0.91 and 0.88 respectively	Adapted for sample	34% black, largely women
Diamond et al. (Unpublished manuscript)	Aftercare study with suicide attempters	BDI, RSQ, SIQ, Columbia Scale for Suicide Severity (CSSR), SIS, Relatedness Scale (RS)	α = 0.95, 0.92, 0.94, 0.85 and 0.89 respectively	Not done	52% African American, 42% white, 6% other
Israel et al. (2013)	Dissemination study in Israel clinic	BDI, Hamilton Depression Inventory (HDI), Youth Self Report (YSR), Kiddie Schedule for Affective Disorder & Schizophrenia (K-SADS)	Not reported	Adapted for the sample	Norwegian patients, middle class, 55% girls

Source Proposed by authors

Table 27.3 Studies and measures used

Study	Measures used
Pilot Diamond et al. (2002)	Beck Depression Inventory (BDI-II), Hamilton Depression Inventory (HAM-D), Self-Report of Family Functioning (SRFF), Suicidal Ideation Questionnaire (SIQ), Kiddie-Schedule for Affective Disorders and Schizophrenia (KSADS-P), Parent–Peer Attachment Inventory
Randomized control trial with treatment as usual Diamond et al. (2010)	SIQ, BDI-II, Diagnostic Inventory Scale Children (DISC)
LGBQ study Diamond et al. (2010)	RSQ-Anxiety and Avoidance, SIQ, BDI
	Reliable Change Index (RCI)
Norway dissemination study Israel et al. (2013)	HAM-D, BDI, Youth Self Report (YSR), K-SADS, Reliability Change Index (RCI), Client Satisfaction Questionnaire (CSQ), Cornell Services Index (CSI)
Aftercare study Diamond et al. (Unpublished manuscript)	BDI, Relatedness Scale (RS), RSQ, SIQ, Suicide Intent Scale (SIS), Columbia Suicide Severity Scale (C-SSRS), CSQ, CSI

Source Proposed by authors

(Diamond, Reis, Diamond, Siqueland, & Issacs, 2002). The investigators examined the efficacy of ABFT in the treatment of adolescent depression, measured by the Beck Depression Inventory (BDI-II) (Beck, Steer, & Garben, 1988). Family functioning was also measured via the Self-Report of Family Functioning (Beavers & Hampson, 2000). Adolescents were interviewed on the depression section of the Schedule for Affective Disorders and Schizophrenia (K-SADS-P) and on the Brief Symptom Inventory (BSI). Parent measures included a Child Behaviour Checklist. The sample consisted of 32 adolescents, the majority of whom were African American girls, who were randomized to either ABFT or no treatment. Treatment lasted 12 weeks and participants were assessed at baseline, mid-point (6 weeks) and end of treatment (12 weeks). They were followed up to 6 months. Participants attended an average of eight, 60–90 min sessions across the 12 weeks. The waitlist control group received 15 min monitoring phone calls to assess any deterioration as measured by the BDI (see Table 27.3).

At post-treatment, 81% of participants randomized to ABFT no longer met criteria for Major Depressive Disorder (MDD) compared to only 47% in the waitlist group who were then offered ABFT treatment (Diamond, Siqueland, & Diamond, 2003). Mixed factorial analyses of variance revealed reduced symptoms of anxiety, depression, and family conflict in the ABFT group. A 6 month follow-up with 15 of the original 16 clients randomized to ABFT found that 13 of the 15 assessed (87%) no longer met criteria for MDD. Other ABFT studies have similarly had over 80% follow-up with reduced reported symptomatology at 6 month follow-up (Diamond et al., 2010, 2012). Follow-up duration and measurement are described in detail (see Table 27.4). In this study, the developers included a culturally diverse group of

Table 27.4 Follow-up and outcomes

Study	Follow-up time points	Follow-up outcomes
Diamond et al. (2002)	Mid treatment (6 weeks), end treatment (12 weeks) and follow-up (6 months)	81% no longer classified for MDD compared to 47% on waitlist control
Diamond et al. (2010)	4, 6, 8, 12, 16 weeks (end treatment), follow-up (6 months)	Reduced levels of suicidality and depression being no longer clinically diagnosable, improved family functioning, and reduced conflict
Diamond et al. (Unpublished manuscript)	Baseline and post-treatment (12 weeks)	No significant reduction in suicidal ideation, reduced rates of depression, and improved relatedness
Diamond et al. (2012)	Baseline, 6 weeks and 12 weeks (post-treatment)	Decrease in suicidal ideation, depression, and attachment anxiety as well as avoidance
Israel et al. (2013)	Follow-up 6 months	Significant symptom reduction and reliable change index scores reported

Source Proposed by authors

male and female therapists who identified as African American, Latina, and White, both male and female. All therapists received training and weekly supervision, including regular live supervision (Diamond et al., 2002).

The next major randomized control trial examined the effects of suicidal ideation and depressive symptoms using ABFT treatment versus treatment as usual with 66 adolescents (Diamond et al., 2010). This study found reduced suicidality and depression, improved family functioning, and reduced conflict within the participants receiving ABFT (M = 5.2, 95% confidence interval [CI] 1.6–8.8) as against treatment as usual (M = 16.2, 95% CI 10.1–22.2) (Diamond et al., 2010).

A current large-scale randomized control trial, which is yet to be published, consists of a 5-year study of 129 families with a suicidal adolescent. Funded by the National Institute of Mental Health (NIMH), this study tracks families after 16 weeks of treatment, at several regular intervals with outcome measurements at baseline, 4, 8, 12, 16, 32, and 54 weeks post-treatment (Diamond et al., 2010). Within sample reliability for the populations in these studies found scores at ≥ 0.85 (Diamond et al., 2010).

The outcome and process measures have been described across studies in detail. The outcome measures have rigorously integrated both parents and adolescents in assessments. Family interactions have also been assessed and coded via a parent–adolescent interaction task where conflict between parents and adolescent is monitored and patterns of communication and/or emotional expression observed (Diamond et al., 2010). This assessment is done at baseline as well as post-treatment and scored for changes in interactions. In terms of newer, more innovative assessments, there is also ongoing research being conducted on active client emotional processing in response to therapist interventions in specific sessions for suicidal adolescents and young adults (Shelef, Diamond, Diamond, &

Liddle, 2005). All therapy and assessment sessions are videotaped with the consent of participants and give deep insight into moment-by-moment elements (Diamond et al., 2003). Attachment style is also evaluated through the Adult Attachment Interview (AAI). This tool addresses intrapsychic processes over and above self-report assessments. The client satisfaction questionnaires (CSQ), adolescent service utilization, and Cornell Services Index (CSI) lend insight into feasibility and acceptance of the study from the participant's perspective.

Treatment Fidelity

Adherence in psychotherapy for families is relevant since the parent–therapist alliance has been shown to be associated with treatment retention and the quality of the adolescent therapist alliance predicts outcome (Shelef et al., 2005). The developers of ABFT have been concerned about evaluating fidelity in two important ways (Diamond, Diamond, & Hogue, 2007). Treatment fidelity comprises two related but distinct issues: adherence and differentiation. Adherence refers to whether a treatment was delivered in accordance with the essential theoretical and procedural aspects of the intervention model. Treatment differentiation, on the other hand, refers to the degree to which a treatment differs from other treatments. In the context of comparative clinical trials, adherence data provide a measure of internal validity of the treatment while differentiation data provide a measure of discriminant validity required to draw conclusions regarding the link between specific intervention models and outcome (Hogue & Dauber, 2013).

For adherence measurement in ABFT, trained observers used the Therapist Behaviour Rating Scale (TBRS, 2007) to code therapists' behaviours in 45 sessions of ABFT and 45 sessions across two other empirically based treatments, Multi-dimensional Family Therapy (MDFT) and Cognitive Behaviour Therapy (CBT). The TBRS attempted to capture ABFT therapist behaviours across five tasks, general family therapy skills and alliance-building skills.

Several items captured the essential interventions of ABFT such as the relational reframe, vulnerable emotions, addressing attachment ruptures. The measure included cognitive-behavioural interventions (e.g. cognitive monitoring, behavioural interventions), family therapy interventions (e.g. parental monitoring, coaching, in-session enactments), and common facilitative interventions (e.g. expressing interest, forming treatment goals, generating hope). Out of these 20 items, 16 items were unique to ABFT and an interclass correlation was conducted leading to coefficients 0.72–0.96. Factor analysis revealed that ABFT could be characterized to have a unique intervention focus.

To validate the instrument, ten external raters were trained for 40 h, mostly undergraduate students. Fifty videotapes of ABFT were rated twice. Inter-rater reliability was found to be 0.9 or higher (Diamond et al., 2002, 2007). The TBRS showed high reliability between ABFT items as against MDFT and CBT (Diamond et al., 1996). Currently underway is an adherence study with a combined tools

developed to evaluate the fidelity for each task of the ABFT treatment model and aspects of the control treatment NST. It checks whether the therapists applied specific ABFT interventions and whether the use of such interventions varied, as expected, according to treatment stage (i.e. early vs. late). Further more, it checks if non-specific elements of NST were also utilized in ABFT tapes. Inter-rater reliability is being established with a team of four-trained and objective coders where every fifth tape is double coded for accuracy. In all prior studies, inter-rater reliability on the adherence scale has been 0.86, 0.9, and 0.95 (Diamond et al., 2012).

ABFT with Diverse Populations

ABFT has been tested with several populations of adolescents and the efficacy is now being assessed with young adults, especially with youth from the LGB community. Studies have included families from inter-city and urban environments as well as adolescents with diverse racial and sexual identities (Diamond et al., 2012, 2002). Although the majority of adolescents participating in ABFT research have historically been African American girls, more recent research has included Latino, White, and Asian American boys and girls. In addition, most families involved in ABFT research have been socio-economically diverse, coming from backgrounds of economic hardship and deprivation, a lack of social support and resources (e.g. secure housing), and limited access to quality education or healthcare.

ABFT has also been tested to treat disorders other than depression and suicidality. For example, ABFT was used for a sample of teens diagnosed with anxiety disorders (Siquelan et al., 2005). In this study, anxious adolescents were treated with a combination of CBT and ABFT. Outcomes showed that this treatment was successful in addressing adolescent anxiety as assessed by a clinically evaluated decrease in symptoms and via self-report. In the CBT-ABFT group, 40% of participants no longer met symptoms of depression or anxiety, with 80% continuing improvement at follow-up. Further research in this area is warranted (Siqueland et al., 2005)

LGBQ Adolescents. Research indicates that LGBTQ youth are at a much higher risk for suicide then heterosexual youth (Duncan & Hatzenbuehler, 2014; King et al., 2008; Mustanski & Liu, 2013). The ABFT developers have taken a special interest in treatment development for this population. A recent study adapted the ABFT model to treat suicidal and depressed LGB adolescents and piloted the new manual on ten cases (Diamond et al., 2012).The manual was specifically adapted to suit the needs of this population and included session content on gender expression. This adaptation of ABFT also included more time with parents in order to (1) Process their emotions about their adolescent's sexual identity; (2) Understand acceptance processes; and (3) Increase awareness of subtle, yet potent, invalidating responses to their adolescents' identity (Diamond et al., 2012).

Aftercare. A small ABFT study was also conducted with 32 adolescents and their families for adolescents' post-suicide attempt from an in-patient treatment centre at the Children's Hospital of Philadelphia to assess the contribution of ABFT in the maintenance of safety prevention of future attempts (Diamond et al., Unpublished manuscript). It was observed that hospitalization often plays the role of stabilization rather than remission care. In this study, ABFT was compared with Enhanced Usual Care (EUC). It was found that ABFT-influenced moderating factors of depression and suicide such as impulse control, family conflict, and negative interactions with parents. Suicidal ideations did not reduce significantly, but less self-reported psychopathology and healthier coping was noted. Although this study was promising for the scope of ABFT with primary care and emergency facilities, further research is necessary to assess feasibility and ensure retention.

Suicide and History of Sexual Abuse. Several studies suggest that a history of sexual abuse (HSA) is an important moderator of treatment outcome among adolescents with suicide ideation (Eisenberg, Ackard, & Resinick, 2007; Klonsky, & Moyer, 2008; Joiner et al., 2007). Adolescents with a HSA are likely to have higher levels of suicide ideation and attempts than those without suicide ideation (Bergen et al., 2010; Eskin, Kaynak-Demir, & Demir, 2005). Studies show a strong association of a history of sexual trauma in childhood with the presence of suicide ideation in adolescence or adulthood (Sareen et al., 2007). Individuals with a history of childhood trauma are also two to five times more likely to attempt suicide in their lifetime. In the light of this, many studies have suggested the need for intervention approaches that target these populations (Tarrier, Taylor, & Gooding, 2008; Hammad et al., 2006).

There have been some empirical studies with suicidal adolescents who had a history of sexual abuse. Using data from a study by Brent et al. (1999), researchers found that cognitive-behavioural therapy (CBT) was more efficacious than non-directive supportive therapy in suicidal individuals (Barbe, Bridge, Birmaher, Kolko, & Brent, 2004). When looking at a sub-population of this sample with a history of abuse, they found that these differences were no longer significant when moderated by a HSA (Barbe et al., 2004). In another study, Asarnow et al. (2011) founded that in the Treatment of Selective Serotonin Reuptake Inhibitor (SSRI) Resistant Depression in Adolescents study (TORDIA), a history of sexual abuse was an important moderator in treatment, along with a few other variables.

In the absence of proven treatments for populations with a history of sexual abuse, it might be imperative to look beyond individual psychiatric factors such as adolescents' cognitions and ineffective forms of coping. A non-psychiatric factor like HSA can often go unnoticed by family therapists where families present with poor communication, high family conflict, and low cohesion. Interventions that target the family's role in processing past trauma and its influence in current manifestations of suicidal behaviour might improve the efficacy of treatment with this population (Diamond et al., 2012).

Dissemination of ABFT

Although there have been several efficacy studies in ABFT, effectiveness and dissemination studies are limited. An ABFT dissemination study with 20 depressed adolescents aged 13–17 was conducted in Norway by an investigator who was not the treatment developer (Israel & Diamond, 2013). Interestingly, implementation barriers rapidly emerged in relation to hospital administration, infrastructure development, and therapists. The clinic-referred adolescents were randomly assigned to ABFT (n = 11) or to Treatment as Usual (TAU) (n = 9). The Beck Depression Inventory (BDI) was used bi-weekly to monitor depressive symptoms, and the Hamilton Scale (HAM-D) was administered at 12-week post-treatment assessment. The project was approved by the Regional Ethics Committee (REK-III) in Norway. Feasibility was evaluated by ongoing observation and documentation of the implementation process. Acceptability was evaluated by retention of adolescents in treatment.

Adolescents in ABFT showed significantly better symptom reduction compared to adolescents in TAU with an effect size of 1.08. They also attended more therapy sessions depicting that the treatment had reasonable acceptability. While preliminary, this study suggests that Norwegian clinical staff therapists could be engaged in learning and delivering ABFT and produce promising treatment results.

Conclusion

This paper reviews the scientific development of ABFT as an evidence-based model. Research studies indicate that ABFT is an emerging model with empirical and clinical value. Across clinical trials, the sample sizes have gotten bigger and more diverse, control groups have become more rigorous, measurements have expanded, and different domains of therapy have been addressed (Diamond et al., 2010). Many new areas of research have been initiated: ABFT with eating disorders, college students, and importing the model to Mexico. Training a new research team in another culture is no doubt challenging as found in the Norwegian clinic study (Israel et al., 2013). Even so, ABFT is currently being implemented in over seven countries including Australia, Belgium, Norway, and the UK. We have trained over 3000 provides to use the model and many are now certified. Over all, ABFT is gaining attention and interest and should experience continued growth and development over the next decade.

References

Allen, J. E. (2009). Suicide prevention as a community development process: Understanding youth suicide prevention through community level outcomes. *International Journal of Circumpolar Health, 68*(3), 274–291.

American Academy of Child & Adolescent Psychiatry. (2001). *Practice guidelines for the treatment of children and adolescents* (2nd ed.). Washington, DC: American Psychological Association.

Asarnow, J. R., Porta, G., Spirito, A., Emslie, G., Clarke, G., Wagner, K. D., … Mayes, T. (2011). Suicide attempts and nonsuicidal self-injury in the treatment of resistant depression in adolescents: Findings from the TORDIA study. *Journal of the American Academy of Child & Adolescent Psychiatry, 50*(8), 772–781.

Attili, G., Vermigli, P., & Roazzi, A. (2011). Rearing styles, parents' attachment mental state, and children's social abilities: The link to peer acceptance. *Child Development Research*, *1*, 1–13.

Barbe, R., Bridge, J., Birmaher, B., Kolko, D., & Brent, D. A. (2004). Lifetime history of sexual abuse, clinical presentation, and outcome in a clinical trial for adolescent depression. *Journal of Clinical Psychiatry, 65*(1), 77–83.

Beautrais, A. L. (2004). Further suicidal behaviour among medically serious suicide attempters. *Suicide & Life-Threatening Behaviour, 34*(1), 1–11.

Beavers, R., & Hampson, R. (2000). The beavers systems model of family functioning. *Journal of Family Therapy, 22*(2), 128–143.

Beck, A., Steer, R., & Garbin, M. G. (1988). Psychometric properties of the Beck Depression Inventory: Twenty-five years of evaluation. *Clinical Psychology Review, 8*(1), 77–100.

Bergen, H., Hawton, K., Waters, K., Cooper, J., & Kapur, N. (2010). Epidemiology and trends in non-fatal self-harm in three centres in England: 2000–2007. *The British Journal of Psychiatry, 197*(6), 493–498.

Boszormenyi-Nagy, I., & Spark, G. M. (1973). *Invisible loyalties: Reciprocity in intergenerational family therapy*. Oxford: Harper & Row.

Bowlby, J. (1988). *A secure base: Parent–child attachment and healthy human development*. New York, NY: Basic Books.

Brent, D. A., Greenhill, L. L., Compton, S., Emslie, G., Wells, K., Walkup, J. T., & Turner, J. B. (2009). The Treatment of Adolescent Suicide Attempters Study (TASA): Predictors of suicidal events in an open treatment trial. *Journal of American Academy of Child & Adolescent Psychiatry, 48*(10), 987–996.

Brent, D. A., Baugher, M., Bridge, J., Chen, T., & Chiappetta, L. (1999). Age- and sex- related risk factors for adolescent suicide. *Journal of American Academy of Child & Adolescent Psychiatry, 38*(12), 1497–1505.

Center for Disease Control & Prevention. (2013). Annual report on community health status and indicators. Atlanta.

Diamond, G. S., Diamond, G. M., & Levy, S. A. (2014). *Attachment-based family therapy for depressed adolescents*. Washington, DC: American Psychological Association.

Diamond, G. M., Diamond, G. S., Levy, S., Closs, C., Ladipo, T., & Siqueland, L. (2012a). Attachment-based family therapy for suicidal lesbian, gay, and bisexual adolescents: A treatment development study and open trial with preliminary findings. *Psychotherapy, 49*(1), 62–71.

Diamond, G. S., Creed, T., Gillham, J., Gallop, R., & Hamilton, J. L. (2012b). Sexual trauma history does not moderate treatment outcome in attachment-based family therapy (ABFT) for adolescents with suicide ideation. *Journal of Family Psychology, 26*(4), 595–607.

Diamond, G. S., Wintersteen, M. B., Brown, G. K., Diamond, G. M., Gallop, R., Shelef, K., & Levy, S. (2010). Attachment-based family therapy for adolescents with suicidal ideation: A randomized controlled trial. *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(2), 122–131.

Diamond, G. M., Diamond, G. S., & Hogue, A. (2007). Attachment-based family therapy: Adherence and differentiation. *Journal of Marital and Family Therapy, 33*(2), 177–191.

Diamond, G. S. (2005). Attachment-based family therapy for depressed and anxious adolescents. In J. L. Lebow (Ed.), *Handbook of clinical family therapy* (pp. 17–41). Hoboken, NJ: John Wiley & Sons Inc.

Diamond, G. S., Siqueland, L., & Diamond, G. M. (2003). Attachment-based family therapy for depressed adolescents: Programmatic treatment development. *Clinical Child and Family Psychology Review, 6*(2), 107–127.

Diamond, G. S., Reis, B. F., Diamond, G. M., Siqueland, L., & Isaacs, L. (2002). Attachment-based family therapy for depressed adolescents: A treatment development study. *Journal of the American Academy of Child and Adolescent Psychiatry, 41*(10), 1190–1196.

Diamond, G. S., Liddle, H. A., Hogue, A., & Dakof, G. A. (1999). Alliance-building interventions with adolescents in family therapy: A process study. *Psychotherapy: Theory, Research, Practice, Training, 36*(4), 355–368.

Diamond, G., & Liddle, H. A. (1996). Resolving a therapeutic impasse between parents and adolescents in multidimensional family therapy. *Journal of Consulting and Clinical Psychology, 64*(3), 481–488.

Duncan, D. T., & Hatzenbuehler, M. L. (2014). Lesbian, gay, bisexual, and transgender hate crimes and suicidality among a population-based sample of sexual-minority adolescents in Boston. *American Journal of Public Health, 104*(2), 272–278.

Eisenberg, M. E., Ackard, D. M., & Resinick, M. D. (2007). Protective factors and suicide risk in adolescents with a history of sexual abuse. *Journal of Pediatrics, 151*(5), 482–487.

Eskin, M., Kaynak-Demir, H., & Demir, S. (2005). Same-sex sexual oorientation, childhood sexual abuse, and suicidal behaviour in university students in Turkey. *Archives of Sexual Behaviour, 34*(2), 185–195.

Feder, M., & Diamond, G. M. (2016). Parent-therapist alliance and parent attachment promoting behaviours in attachment-based family therapy for suicidal and depressed adolescents. *Journal of Family Therapy, 38*(1), 82–101.

Fonagy, P., Gergely, G., Jurist, E. L., & Target, M. (2002). *Affect regulation, mentalization, and the development of the self*. New York, NY: Other Press.

Fonagy, P., & Target, M. (1997). Attachment and reflective function: Their role in self-organization. *Development and Psychopathology, 9*(4), 679–700.

Grunbaum, J., Kann, L., Kinchen, S., Williams, B., Ross, J., Lowry, R., & Kolbe, L. (2002). Youth risk behaviour surveillance—United States, 2001. *Journal of School Health, 72*(8), 313–328.

Hamilton, N. G., & Hamilton, C. A. (2005). Competing paradigms of response to assisted suicide requests in Oregon. *The American Journal of Psychiatry, 162*(6), 1060–1065.

Hammad, T. A., Laughren, T., & Racoosin, J. (2006). Suicidality in pediatric patients treated with antidepressant drugs. *Archives of General Psychiatry, 63*(3), 332–339.

Hazell, P. (2009). Depression in children and adolescents. *BMJ Clinical Evidence, 6*(4), 103.

Henggeler, S. W., Schoenwald, S. K., Borduin, C. M., Rowland, M. D., & Cunningham, P. B. (1998). *Multisystemic treatment of antisocial behaviour in children and adolescents*. New York, NY: Guilford Press.

Hogue, A., & Dauber, S. (2013). Assessing fidelity to evidence-based practices in usual care: The example of family therapy for adolescent behaviour problems. *Evaluation and Program Planning, 37,* 21–30.

Israel, P., & Diamond, G. S. (2013). Feasibility of attachment based family therapy for depressed clinic-referred Norwegian adolescents. *Clinical Child Psychology and Psychiatry, 18*(3), 334–350.

Johnson, S. (2004). *The practice of emotionally focused couple therapy: Creating connection*. New York, NY: Brunner-Routledge.

Johnson, S. M., & Greenberg, L. S. (1985). Emotionally focused couples therapy: An outcome study. *Journal of Marital & Family Therapy, 11*(3), 313–317.

Joiner, T. J., Sachs-Ericsson, N. J., Wingate, L. R., Brown, J. S., Anestis, M. D., & Selby, E. A. (2007). Childhood physical and sexual abuse and lifetime number of suicide attempts: A persistent and theoretically important relationship. *Behaviour Research and Therapy, 45*(3), 539–547.

Joiner, T., Van Orden, K., Witte, T., & Rudd, M. (2009). *The interpersonal theory of suicide: Guidance for working with suicidal clients*. Washington, DC: American Psychological Association.

Kaslow, N., & Racusin, G. (1994). Family therapy for depression in young people. In W. M. Reynolds & H. F. Johnston (Eds.), *Handbook of depression in children & adolescents* (pp. 345–363). New York, NY: Plenum Press.

King, M., Semlyen, J., Tai, S. S., Killaspy, H., Osborn, D., Popelyuk, D., & Nazareth, I. (2008). A systematic review of mental disorder, suicide, and deliberate self harm in lesbian, gay and bisexual people. *BMC Psychiatry, 8,* 70.

Klonsky, E. D., & Moyer, A. (2008). Childhood sexual abuse and non-suicidal self-injury: meta-analysis. *The British Journal of Psychiatry, 192*(3), 166–170.

Kobak, R., Cassidy, J., Lyons-Ruth, K., & Ziv, Y. (2006). Attachment, stress and psychopathology: A developmental pathways model. In D. Cicchetti & D. J. Cohen (Eds.), *Handbook of developmental psychopathology* (pp. 333–369). Cambridge: Cambridge University Press.

Kõlves, K., Ide, N., & De Leo, D. (2010). Suicidal ideation and behaviour in the aftermath of marital separation: Gender differences. *Journal of affective disorders, 120*(1), 48–53.

Minuchin, S. (1974). *Families & family therapy*. New York: Harvard University Press.

Mustanski, B., & Liu, R. T. (2013). A longitudinal study of predictors of suicide attempts among lesbian, gay, bisexual, and transgender youth. *Archives of Sexual Behaviour, 42*(3), 437–448.

Nock, M. K., Borges, G., Bromet, E. J., Alonso, J., Angermeyer, M., Beautrais, A., … Williams, D. (2008). Cross national prevalence and risk factors for suicidal ideation, plans and attempts. British Journal of Psychiatry, *192*(2), 98–105.

Olfson, M., Blanco, C., Liu, L., Moreno, C., & Laje, G. (2006). National trends in the outpatient treatment of children and adolescents with antipsychotic drugs. *Archives of General Psychiatry, 63*(6), 679–685.

Orden, V. A., Lynam, M. E., Hollar, D., & Joiner, T. E. (2006). Perceived burdensomeness as an indicator of suicidal symptoms. *Cognitive Therapy and Research, 30*(4), 457–467.

Ougrin, D., Tranah, T., Leigh, E., Taylor, L., & Asarnow, J. R. (2012). Practitioner review: Self-harm in adolescents. *Journal of Child Psychology and Psychiatry, 53*(4), 337–350.

Rees, C. A. (2005). Thinking about children's attachments. *Archives of disease in childhood, 90* (10), 1058–1065.

Rotheram-Borus, M. J., Piacentini, J., Miller, S., Graae, F., & Castro-Blanco, D. (1994). Brief cognitive-behavioral treatment for adolescent suicide attempters and their families. *Journal of the American Academy of Child & Adolescent Psychiatry, 33*(4), 508–517.

Rowe, S. L., French, R. S., Henderson, C., Ougrin, D., Slade, M., & Moran, P. (2014). Help-seeking behaviour and adolescent self-harm: A systematic review. *Australian and New Zealand Journal of Psychiatry, 48*(12), 1083–1095.

Rudloph, K. D., Hammen, C., Burge, D., Lindberg, N., Herzberg, D., & Daley, S. E. (2000). Toward an interpersonal life-stress model of depression: The developmental context of stress generation. *Development and Psychopathology, 12*(2), 215–234.

Sareen, J., Cox, B. J., Afifi, T. O., Stein, M. B., Belik, S., Meadows, G., & Asmundson, G. G. (2007). Combat and peacekeeping operations in relation to prevalence of mental disorders and perceived need for mental health care: Findings from a large representative sample of military personnel. *Archives of General Psychiatry, 64*(7), 843–852.

Sheeber, L. B., Davis, B., Leve, C., Hyman, H., & Tildesley, E. (2007). Adolescents' relationships with their mothers and fathers: Associations with depressive disorder and subdiagnostic symptomatology. *Journal of Abnormal Psychology, 116*(1), 144–154.

Shelef, K., Diamond, G. M., Diamond, G. S., & Liddle, H. A. (2005). Adolescent and parent alliance and treatment outcome in multidimensional family therapy. *Journal of Consulting and Clinical Psychology, 73*(4), 689–698.

Siqueland, L., Rynn, M., & Diamond, G. S. (2005). Cognitive behavioural and attachment-based family therapy for anxious adolescents: Phase I and II studies. *Journal of Anxiety Disorders, 19*(4), 361–381.

Sroufe, A. (2005). Attachment and development: A prospective, longitudinal study from birth to adulthood. *Attachment & Human Development, 7*(4), 349–367.

Stanley, B., Brown, G., Brent, D. A, Wells, K., Poling, K., Kennard, B. D., … Hughes, J. (2009). Cognitive behaviour therapy for suicide prevention (CBT-SP): Treatment model, feasibility and acceptability. *Journal of the American Academy of Child Psychiatry, 48*(10), 1005–1013.

Tarrier, N., Taylor, K., & Gooding, P. (2008). Cognitive-behavioural interventions to reduce suicide behaviour: A systematic review and meta-analysis. *Behaviour Modification, 32*(1), 77–108.

Van Heeringen, C., & Marusic, A. (2003). Understanding the suicidal brain. *The British Journal of Psychiatry, 183*(4), 282–284.

World Health Organization. (2015). *World health statistics*. Geneva: World Health Organization.

Zayas, V., Mischel, W., Shoda, Y., & Aber, J. L. (2011). Roots of adult attachment: Maternal caregiving at 18 months predicts adult peer and partner attachment. *Social Psychological and Personality Science, 2*(3), 289–297.

Zimmerman, P., & Becker-Stoll, F. (2002). Stability of attachment representations during adolescence: The influence of ego-identity status. *Journal of Adolescence, 25*(1), 107–124.

Chapter 28
Addressing Suicides in Special Operations Forces: Enhancing Resilience in a Unique Population

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With the growing personnel demands and unpredictable nature of modern warfare since 11 September 2001, The US Special Operations Command (USSOCOM) has steadily increased its numbers of service members (Hoffman, 2006; Pendleton et al., 2015; Rzepka, 2015). From 2001 to 2014, US SOF deployments more than doubled (Pendleton et al., 2015). This high demand has also led to multiple and prolonged training cycles and deployments becoming more common for SOF (Rzepka, 2015). While some have insisted that SOF are highly resilient (United States Army, 2012), attention from the military and from researchers is now beginning to highlight the impact of the chronic high emotional and physical strain that is placed on these elite forces (United States Army, 2012). From 2012 to 2015, the USSOCOM experienced an alarming increase in the rate of suicide within Special Operations Forces personnel (The United States Congress, 2015). Data indicates that 49 Special Operators committed suicide from 2011 to 2014 (Shanker & Oppel, 2014). This number may appear small, the fact that it represents a change from previous years warrants concern.

Furthermore, as of 2015, there were approximately 70,000 SOF in the USA across branches, including active duty and reserve (Feickert, 2015). This number would be expected to account for a little over 3% of the US armed forces (including active duty and reserve unit numbers; The United States Department of Defense, 2016). Due to the relatively small size of the US Special Forces community, death

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of even a small number of SOF service members due to suicides has a high negative impact. Adding to the tragedy that already surrounds loss of life, training Special Operations Personnel requires investment of a high financial cost from the military (United States Government Accountability Office, 2015). Admiral William H. McRaven, Commander of USSOCOM, insists that if SOCOM is to be successful in war, its personnel and their families must be better-supported (United States Army, 2012). The subsequent review will examine the potential utility of resilience-based approaches for addressing the problem of suicide in the US SOF. To facilitate understanding of the particular challenges associated with developing interventions for this population, the unique history, training, and service requirements of the US SOF will be presented in the subsequent section.

History of the US Special Operations Forces

Since its inception in 1952, the SOF has served in a variety of roles and has been an evolving entity with a unique but elusive identity (Prados, 2015). The conceptual roots of the US Special Forces' tactical activities can be traced as far back as Colonial New England when specially organized rangers were trained in the principles of irregular warfare. The contemporary US SOF, however, originated during World War II (Prados, 2015; Schemmer & Carney, 2003). This use of SOF capabilities set the stage for the era of counterinsurgency and the special warfare doctrine (McClintock, 1992). In understanding this historical context, the activities of Special Forces can be considered a direct product of various specially trained military units whose unique skill sets yielded critical outcomes in wartime operations throughout World War II (WWII; Schemmer & Carney, 2003). Events considered particularly pertinent to the history of the US Special Forces are examined subsequently.

Faced with ominous threats of war, President Franklin D. Roosevelt created the Office of the Coordinator of Information (OCI) in 1941, a division dedicated to executing "psychological warfare" (Prados, 2015). The OCI quickly became the US government's primary military agency for propaganda-related activities during the war. At the time, this strategy represented the province of psychological warfare and became a popular conventional wartime technique. The OCI incorporated covert information gathering and persuasion operations with special intelligence, sabotage, subversion, and guerrilla activities. The latter three activities eventually became known as "special operations" (Prados, 2015).

Furthermore, the events of WWII shaped the scope of SOF missions that were at the time subsumed under the dictates of special operations irregular warfare (Prados, 2015). Many of the components of these early SOF missions remain relevant today. The basic approach to irregular warfare during WWII was characterized by resistance movements and insurgency aimed at counteracting an occupying enemy as well as aiding indigenous "partisan" forces with their roles in the same efforts (Prados, 2015). Additionally, in 1941 Colonel Donovan, drawing from

his familiarity with the British military system, created a second organization to operate alongside the OCI. He deemed this group the Office of Strategic Services (OSS). The OSS was loosely modelled after Britain's paramilitary branch, the Special Operations Executive (SOE), whose allied efforts and "unorthodox" operations secured successful reconnaissance-type missions throughout Europe, as well as North Africa, Burma, and Norway (Prados, 2015). In 1942, the OSS command was designated responsibility for organizing and carrying out all guerrilla activities in German-occupied territories. Despite the indispensable presence of these specialized activities in the early years of the war, President Harry S. Truman disbanded the OSS in 1945 in response to scepticism within the military and from officers of conventional forces doubting the immediacy of the need to invest in these unconventional wartime activities (McClintock, 1992). As a consequence, the OSS was repurposed into a general intelligence service, which led to the creation of the Central Intelligence Agency (CIA) later that year. Despite this change, the use of unique teams of personnel in the US military was far from over.

Due to mounting tensions early in the Cold War era, President Truman established the Psychological Strategy Board, which, like the OCI, was responsible for creating and articulating propaganda wartime plans (Fredriksen, 2011). Led by Robert McClure, who became the major general of this entity and the ensuing Psychological Warfare Center in 1944, the division sought to foment resistance to the Soviet Union. This was done through covert warfare and specialized preparation during times of peace (Fredriksen, 2011). Later, in conjunction with officers who had led resistance efforts with the OSS in WWII as well as with Colonel Aaron Bank, a top veteran of the OSS, General McClure formed the official Tenth Special Forces Group in June of 1952 (Fredriksen, 2011). Furthermore, in 1987, following a failed attempt to rescue American hostages in Iran, Congress passed legislation creating the US Special Operations Command (USSOCOM). The commander of SOCOM was henceforth tasked with the responsibility of recruiting, organizing, training, and equipping the SOF members in preparation for both present and future conflicts (Council on Foreign Relations, 2013; Pendleton et al., 2015). Despite various restructuring, the SOF has largely maintained the organizational structure established at this time through the present day.

Despite their unique and valuable role in throughout US military history and their evolution towards becoming one of today's US military's most vital assets, the role and legitimacy of SOF have been insufficiently understood by the wider military community and general public (Sarkesian & Connor, 2006). Furthermore, because the goals of the SOF organization may be seen as conflicting with the missions of the other branches within the US Armed Forces, the SOF have been described as holding "precarious value" outside of the special operations forces community (Turnley, 2008, p. 14). This viewpoint along with the aforementioned fact that SOF comprises only 3% of total military positions gives way to potential problems faced by these service members (US Government Accountability Office, 2015). Namely, SOF has been historically overlooked, limiting the development of programmes customized specifically to benefit this group.

Unique Training Requirements and Expectations

The USSOCOM is comprised of agile, creative, and mature warriors. To achieve this elite personnel base, unique and advanced training and high skill levels are prerequisites for joining SOF (Council on Foreign Relations, 2013; Schemmer & Carney, 2003). Membership in the SOF requires completing extensive training and meeting demands of exceptional performance. To successfully complete all phases of the selection protocol and entrance requirements, soldiers must undergo six rounds of training, beginning with a qualification course known as "Q Course". This initial process takes place over at least 1 year and up to 2 years to impart the essential skills (Prados, 2015). The selection process and subsequent training is performed at the John F. Kennedy Special Warfare Center and School in Fort Bragg, Georgia. There, candidates complete exercises simulating various types of guerrilla activities and prisoner rescues (Prados, 2015). After passing the Q course, SOF trainees must achieve mastery in tactical techniques, free form parachuting, rapid response strategies, and language proficiency, which incorporate knowledge of and acculturation factors for the anticipated regions of operations (McClintock, 1992; Prados, 2015). According to David Goldfein, the Director of the Joint Chiefs of Staff, special operations core activities in the field include:

> direct action, special reconnaissance, countering weapons of mass destruction, counterterrorism, unconventional warfare, foreign internal defense, security force assistance, hostage rescue and recovery, counterinsurgency, foreign humanitarian assistance, military information support operations, and civil affairs operations. (United States Special Operations Command, 2014a, p. x)

The rigorous SOF training process is characterized by a high attrition rate, and only one-third of applicants remain in the programme at the end of the training period (Turnley, 2008). USSOCOM's service members must be prepared to endure extreme levels of physically and psychologically demanding stressors that are not experienced by other branches of the military (Bartone, Roland, Picano, & Williams, 2008). In addition to requiring superior physical strength, SOF soldiers must be self-sufficient, cognitively adaptable (Hartmann & Grønnerød, 2009), and able to tolerate high levels of ambiguity (Kilcullen, Mael, Goodwin, & Zazanis, 1999) and improvisation (U.S. Special Operations Command, 2014a). The members of the SOF are necessarily typically far more experienced individuals than those in other branches of the military and are often specialized in many different areas of military skill (Schemmer & Carney, 2003).

Unique Demands on US Special Forces

In a post-9/11-security era characterized by a widening array of conflicts for the US military to manage, the SOF now find themselves at the forefront in US global security strategy (United States Special Operations Command, 2014b). To

counteract diverse and ever-changing threats around the world, particularly in the present-day involvements with Operation Enduring Freedom (OEF) and Operation Iraqi Freedom (OIF) in the Middle East, the USA will likely become increasingly reliant on the SOF to carry out irregular warfare missions (Council on Foreign Relations, 2013). Moreover, a 2003 report concluded that SOF's responsibilities represent a set of demands not feasible for conventional military forces (Pendleton et al., 2015).

Unlike service members of other branches whose roles entail more straightforward combat missions, the USSOCOM's forces possesses integrative and interdependent partnership functions within the organization that allow it to carry out diverse missions (United States Special Operations Command, 2014a). The SOF are expected to operate in small units in sensitive, extreme, and at times, isolated environments, leaving a minimal footprint as evidence (Prados, 2015). Additionally, SOF personnel possess exceptional knowledge and leadership qualities including "cultural and regional awareness" (Pendleton et al., 2015, p.9) rendering them capable of establishing trusted relationships with indigenous forces and civilians, in order to optimize the success of foreign operations while reducing the size of conflicts (Pendleton et al., 2015; Prados, 2015). With the Obama administration recently signalling a shift in national defence priorities towards use of innovative and small-footprint operations, SOF emerge as particularly suited to meet these needs (Bennett, 2012). Today, SOF are increasingly called upon to carry out missions of unconventional warfare and cooperative security (Prados, 2015). This increasing demand has come at a high price.

Impact of Prolonged Psychological and Physical Strain

Research indicates that, due to rigorous selection criteria, SOF soldiers possess relatively high levels of hardiness, a hallmark feature of resilience, compared to the average citizen or conventional soldier (Bartone et al., 2008). Nevertheless, continuous exposure to extreme and chronic stress from uncontrollable events has been linked to increased psychological and physiological reactivity (Checkley, 1996). These effects are, in several civilian population-based studies, linked to increased likelihood of developing depression and of dying by suicide (Checkley, 1996; Feskanich et al., 2002; Gilmartin, 2002; Matheson et al., 2006).

Studies have linked exposure to chronic stress among military personnel deployed to Iraq and Afghanistan with mental health problems such as posttraumatic stress disorder (PTSD), depression, anxiety, substance abuse, and suicide (Bonanno et al., 2012; Castro & Kintzle, 2014; Hoge et al., 2004; Prigerson, Maciejewski, & Rosenheck, 2001). It follows, then, that the chronic stress from uncontrollable events experienced over prolonged, frequent deployments may, over time, continue to test coping skills, ultimately rendering SOF vulnerable to mental health problems and suicide (Strobel, 2014; United States Army, 2012). Thus, upon review of the unique history of and demands placed on the US Special Forces, it

becomes clear that these individuals warrant special consideration in the literature addressing interventions for the aforementioned rise in suicides.

Enhancing Resilience as Suicide Prevention

Positive Psychology

In considering suicide prevention approaches for SOF, positive psychology's emphasis on building strength and resilience offers a potentially promising approach. In 1998, Martin Seligman, often referred to as the father of positive psychology, cultivated the idea of a scientific study of peoples' strengths (Seligman, 1990). Instead of focusing research on the reasons people become mentally ill— or want to die—Seligman advocated for flipping the question entirely. Seligman's central query entailed finding out what factors lead people to feel that their lives are worth living (Seligman, 1990). Leading up to the dissemination of this argument, Seligman came to understand through the course of his research on learned helplessness that optimism and other positive emotions support people in their efforts to persevere through times of adversity and struggle (Seligman, 1990).

Charting a new course in the field of psychology, Seligman and Csiksgentmihalyi (2000) set the agenda for the next century of mental health focusing on the cultivation of these capacities as a primary, if not foundational, means of mental illness prevention. As a domain of study, positive psychology theory focuses on human emotions and virtues such as joy, courage, strength, and resilience (Seligman, 1990). These virtues are believed to buffer against stress, trauma, and adversity. As a scope of practice, the application of this theory entails creating interventions aimed at improving well-being and facilitating human flourishing (Pawelski, 2003). Advocates of positive psychology propose that, instead of focusing solely on problems, weaknesses, and pathologies, practitioners and policy makers stand to benefit more from orienting focus towards identifying, cultivating, and studying aspects of human life that enable a person to grow and thrive despite experiences of adversity (Campbell-Sills, Cohan, & Stein, 2006). It follows that, for a population such as SOF that inevitably faces extreme and prolonged physical and psychological strain, an intervention which increases the ability to thrive despite such circumstances may be ideal.

Resilience as Suicide Prevention for the Military

Traditionally, suicide literature has focused on the risk factors that bring about suicidal ideations and behaviours. These aspects include past history of suicide attempts (Kessler, Borges, & Walters, 1999), substance abuse (Tondo et al., 1999),

and exposure to trauma (Johnson, Wood, Gooding, Taylor, & Tarrier, 2011; Pompili et al., 2011). In recent years, however, research has focused increasing attention on the role of protective factors in mitigating and preventing suicide (Johnson et al., 2011). While this area of study remains in its infancy, these studies have expanded in recent years, with the slow pace being due in part to the difficulty in defining resilience as a unitary construct (Liu, Fairweather-Schmidt, Roberts, Burns, & Anstey, 2014). Some theorists insist that resilience reflects the capacity to recover from a disruption in normative states or functioning (Bonanno, 2004; Masten, Cutuli, Herbers, & Reed, 2009). The American Psychological Association (APA) has consolidated various conceptualizations and defined resilience as "the process of adapting well in the face of adversity, trauma, tragedy, threats, or significant sources of stress" (APA, 2015, p. 1). The authors of the present chapter adopt this latter comprehensive definition of the term.

To optimize adaptability to maintain effectiveness, resilience-based interventions commonly address multiple domains of functioning (Masten et al., 2009). At the individual level, these approaches aim to enhance emotion regulation and problem solving skills. At the relationship level, these interventions foster supportive interpersonal attachments to loved ones. The environmental level of resilience-based interventions focuses on the contexts in which the individual is situated. Consistent with the dynamic and interdependent nature of these levels of functioning, the most effective interventions and programmes target all three of these levels (Luthar, Cicchetti, & Becker, 2000). Research also indicates that individuals are capable of acquiring and building resilience skills, and settings can be organized in a manner that promotes resilience (Stewart, Sun, Patterson, Lemerie, & Hardie, 2004).

Despite the limited amount of available research on the relationship between resilience and suicide, a handful of studies have linked low resilience with increased risk of suicide. In one cross-sectional study, low resilience was found to be associated with rises in suicidal behaviours among Australian adults (Liu et al., 2014). In another study, low resilience was found among substance-dependent patients who had attempted suicide (Roy, Sarchiapone, & Carli, 2007). Resilience in these two studies was operationalized as the ability to utilize internal and external resources to successfully deal with adversity, and resilience was measured with the Connor–Davidson Resilience Scale (Connor & Davidson, 2003). Additionally, results from a review paper of this topic suggest that positivity in the attributional style, hopefulness, and agency represent the strongest resilience factors (Johnson et al., 2011). Mounting evidence supports the notion that resilience is a moderating influence, significantly impacting the strength of the relationship between risk and suicidal behaviours (Johnson et al., 2011).

Research supports the importance of enhancing resilience for elite military personnel (Picano & Roland, 2012). Utilizing the notion of elements of a life worth living from positive psychology offers a powerful and proactive approach to this enterprise and a pertinent contrast to an emphasis on the life-ending elements of suicide (Seligman, 1998). A focus on building resilience has been identified as a promising strategy for addressing the recent suicide problem among the US SOF

(Wood, 2016). Aside from positive psychology's emphasis on strengths in the face of adversity, this approach for SOF also holds appeal due to its potentially decreased likelihood of facing stigma as compared to approaches that explicitly deem themselves suicide prevention programmes. This may lead to increased engagement by these elite service members. In support of this notion is research indicating that perceived fears of being judged by others for seeking psychological treatment tend to become internalized as negative attitudes towards seeking treatment (Kulesza, Pederson, Corrigan, & Marshall, 2015). These negative attitudes in turn represent significant and insidious barriers to mental health care within the military (Kulesza et al., 2015). A resilience-based approach, which proactively focuses on building strengths, capacities, and resourcefulness, may mitigate the impact of perceived and expressed stigma (Dean & McNeil, 2012). Further, through the inherent emphasis on community, social support, constructive health-promoting and help-seeking behaviours, resilience-based efforts can avoid the use of stigmatizing language such as "suicide prevention" (Dean & McNeil, 2012). Thus, from a resilience-based standpoint, seeking mental health care, like seeking medical care for physical wounds, can be promoted as a strategy for maintaining and enhancing performance and overall health (Dean & McNeil, 2012; McCalman et al., 2016). For SOF members, who are said to adhere more strongly to the ideal of warrior culture than those in other military branches, this factor may hold particular relevance (Brim, 2013).

Military-Specific Risk and Protective Factors for Suicide

Recent research has identified a number of risk factors for suicide in the military. Using data from the Army Study to Assess Risk and Resilience in Service members (STARRS), Nock et al. (2014) evaluated the prevalence and correlates of military suicides. General risk factors identified included female gender, lower military rank, and history of previous deployment (Nock et al., 2014). Clinical risk factors included the following pre-enlistment conditions: panic disorder, PTSD, depression, and intermittent explosive disorder (Nock et al., 2014). Because SOF have traditionally been considered more resilient than other branches, research into suicide has tended to focus on other military populations, leaving the SOF without an empirically supported set of targetable risk factors (Shanker & Oppel, 2014). The absence of research on suicide risk factors in a SOF population provides additional support for strategies focusing on other aspects, as in the present discourse on resilience.

Compounding the burden of the above risk factors, findings from the literature suggest that stigma related to mental health affects the rate of treatment seeking and coping styles of members of the military (Ramchand et al., 2014). Stigma in the military has been described in the literature as negative perceptions about seeking help for mental health issues that stem from dominant cultural attitudes and that lead to social distancing and loss of opportunity for treatment (Acosta, Becker,

Cerully, Fisher, & Martin, 2014; Ramchand et al., 2014). Further, stigma has been identified as one of the most insidious barriers to mental health treatment and has been highlighted as a potential risk factor for suicide (Acosta et al., 2014; Ramchand et al., 2014). As such, reducing stigma has been defined as an "aspirational goal" in the National Action Alliance for Suicide Prevention's Research Prioritization (2014) Task Force.

In the light of this finding, the Office of the Assistant Secretary of Defense for Health Affairs, in conjunction with the Department of Defense (DOD), tasked the RAND National Defense Research Institute in 2014 with assessing the DOD's approach to stigma reduction among all branches of the military (Institute of Medicine, 2014). In their report, the institute identified and proposed programme implementations and policy changes towards the goal of reducing stigma, including implementation of education and stress management training programmes. These researchers also recommended the implementation of education and training programmes that teach soldiers skills such as cognitive restructuring (Institute of Medicine, 2014). Lastly, the institute proposed the implementation of psychoeducation to help service members better regulate and accept their thoughts, feelings, and sensations. Examples of fostering resilience will be examined below as a potentially applicable direction for programmes aiming to support SOF (Institute of Medicine, 2014). Despite these efforts, additional innovative strategies are needed to counter the negative impact of stigma. Thus, a resilience-based approach may offer a viable solution as an option due to its lack of need for the stigmatizing labels of suicide and mental illness.

Existing Military Resilience Efforts

In response to the high rate of PTSD and suicides among the military, the DOD launched a concerted effort to develop mental health prevention programmes, with a recent focus on enhancing resilience pertaining to fortifying fitness and mitigate adverse reactions to stress (Department of Defense, 2011). Nearly every military service branch has developed and implemented training, services, and programmes intended to foster mental resilience and mitigate adverse consequences of exposure to stress (Department of Defense, 2011). Two such programmes have been empirically evaluated: Comprehensive Soldier Fitness and Airman Resilience Training.

Comprehensive Soldier Fitness

Developed in partnership with Martin Seligman, the Comprehensive Soldier Fitness (CSF) programme is founded on the principles of positive psychology (Brown, 2015; Cornum, Matthews, & Seligman, 2011). CSF endeavours to increase

resilience and decrease the incidence of mental health problems across the entire army. This aim requires a wide-reaching scope, to impact an estimated 1.1 million service members (Cornum et al., 2011). In 2012, the programme expanded its goal to include support for families of members. In accordance with this added objective, this programme is now called the Comprehensive Soldier and Family Fitness (CSF2) programme (Steenkamp, Nash, & Litz, 2013). The CSF2 model comprises the three following components: Comprehensive Resilience Models (CRMs), the Master Resilience Trainers (MRT) Programme, and use of the Global Assessment Tool (GAT). CRMs are skill-building training videos. CSF2 employs a series of CRMs covering social, emotional, and spiritual domains. CRMs also provide practical exercises. The second CSF2 component is the MRT programme, which trains military personnel to then conduct formal resilience training to other, more experienced soldiers who in turn provide resilience and performance enhancement training to fellow soldiers and their families (Reivich, Seligman, & McBride, 2011). This training trainers model aims to increase access to the large number of personnel within the army. Lastly, the GAT, 105-item measure of mental health outcomes, was employed by CSF2 to evaluate programme effectiveness (Harms, Herian, Krasikova, Vanhove, & Lester, 2013).

According to results produced by the Army's Research Facilitation Team, the CSF has fallen short of its goals, and there appears to be little evidence of its overall efficacy in improving resilience. There is evidence that the MRT component has had a modest impact on psychological fitness outcomes; a comparison of a control group and treatment group revealed a small effect size (partial eta squared valued of 0.002 or smaller; Harms et al., 2013). In the face of these lacklustre results, the methodological validity of this study has also been challenged (Krueger, 2011). Perhaps one of the greatest limitations of the programme is that it lacks standardized metrics by which to evaluate the programme's outcomes. The GAT questionnaire has been subject to criticism because it has not been formally validated in a military sample (Krueger, 2011). Steenkamp et al. (2013) have also lamented the fact that there is a lack of data transparency. The complete GAT assessment and the content of the CRMs have not been made available for the academic research community, which would provide valuable information about how to make programme-level improvements. For example, it remains unknown if changes to the format of the trainings or adding additional domains for targeting resilience could improve outcomes.

Airman Resilience Training

Like the Army, the Air Force has also been interested in bolstering resilience among its service members. The Airman Resilience Training (ART) resilience-based psychoeducational programme aims to provide military airmen with tools to improve their abilities to cope with stress (Gonzalez, Singh, Schell, & Weineck, 2014). The RAND Corporation utilized a qualitative case study approach to gauge

the usefulness of the programme to participants. After analysing narrative data from semi-structured interview protocols, these researchers concluded that the ART has not been successful in achieving its aims (Gonzalez et al., 2014). The participants reported feeling disengaged from the material. ART used a PowerPoint format with content deemed vague and disconnected. The delivery method of the programme's information was cited in qualitative responses as the primary source of ineffectiveness, and participants called instead for interactive exercises (Gonzalez et al., 2014). Further, some of the participants interviewed reported that the information failed to take into account the diversity of their experiences. Participants also expressed a desire for human interaction over computer-based exercises for the training delivery format. Despite the mostly negative response to the ART, some participants expressed appreciation certain aspects of the content including the encouragement to engage in help-seeking behaviours and a list of mental health resources. Thus, it is possible that a resilience-based programme with a more effective and engaging delivery modality may prove more impactful.

Other Resilience-Based Programmes

Organizations outside of the US military have also turned to resilience-based efforts as a means to decrease strain on their personnel. Before reviewing efforts specific to the US SOF, the efforts undertaken for Law Enforcement personnel will be examined. Law Enforcement are commonly placed in situations of high physical and psychological strain and commonly face threats to their lives, which may render their experience somewhat analogous to that of the military's Special Forces. Such information may provide additional perspective to the potential utility of supporting resilience in SOF.

Law Enforcement

Resilience-focused models have been implemented with police officers. One research team developed and tested a trauma resilience programme designed to prepare officers to respond optimally to stressful experiences in the field and to attenuate critical trauma-induced fear reactions (Arnetz, Arble, Backman, Lynch, & Lublin, 2013). The intervention, which also included imagery and skills training, resulted in significantly lower rates of negative mood, as well as improved physiological stress indicators. These signs of decreased reactivity included heart rate reactivity and cortisol levels (Arnetz et al., 2013).

In another study, Andersen et al. (2015) tested the feasibility and efficacy of a resilience enhancement programme designed to reduce the stress responses of Finnish Special Police Forces (akin to the US Special Weapons and Tactics [SWAT]) officers. The design of sessions was based off Arnetz et al. (2013) protocol discussed above.

Resilience trainings were led by experienced facilitators and were held for 60-min daily over a 5-day period. The psychophysiological intervention trainings consisted of brief psychoeducation followed by a presentation of a scenario with instructions to imagine themselves embedded in the incident while engaging in controlled breathing exercises. Quantitative and qualitative data collection methods yielded positive results. These researchers found that participants were able to significantly decrease their stress responses; officers also reported feeling that this programme would improve their ability to deal with stress and perform under high-risk conditions. While it is unclear from the study to what extent targeting the stress response resulted in positive outcomes in the long term, this study demonstrates the relative potential for success of a more experiential and engaging model when compared to that of the above attempts within the military.

Efforts to Promote Resilience Within US Special Operations Forces

Available information on interventions within the SOF population itself is sparse. Two programmes, the Wounded Warrior Care Coalition and the Preservation of the Force and Family Programme, warrant mention. It is important to note that, while these interventions represent a step in the direction of developing strategies targeted to the unique SOF population, no formal outcome evaluation has been conducted for either approach.

Wounded Warrior Care Coalition

To support the needs of SOF members from a holistic approach, the USSOCOM implemented a wounded warrior care support programme in 2005 called the Care Coalition (Garamone, 2015). The aim of this service is to help SOF member's transition back to civilian life after injury or illness. Senior members of the SOF can train to become "liaison officers" and provide support immediately after a service member is injured, for the injured person and the family. Training is also available for "Advocate" positions, which consist of managing the long-term affairs of service members in their transition into veteran status. Collaborating with businesses and academic programmes across the country, the Care Coalition facilitates in the hiring process of SOF into a diverse array of positions. While this programme does not explicitly focus on resilience in its model, it serves to highlight the importance of utilizing members already in SOF to foster engagement from the close-knit community.

The Preservation of the Force and Family Programme

A recent and ongoing effort to address the psychological strain on SOF members through increasing resilience entails the US Preservation of the Force and Family (POTFF) programme (USSOCOM, n.d.). POTFF arose touting several central aims. First, POTFF addresses the problems faced by SOF forces through a holistic approach as opposed to an explicitly targeted suicide prevention programme. Second, the POTFF programme's goal is to increase resilience among the service members. Third, this method aspires to keep its SOF individuals ready (psychologically and physically) for deployment and to perform effectively when that time comes. Finally, POTFF is broad in scope, supporting SOF members in each group within the USSOCOM, entailing army, air force, navy, marines, and joint special operations command (USSOCOM, n.d.).

Preservation of the Force and Family Programme is structured to target four domains of "performance" in increasing resilience (USSOCOM, n.d.). First, POTFF aims to improve physical well-being, such as through exercise. This aspect is also noted as the "human" domain (USSOCOM, n.d.). Second, the psychological domain addresses potential mental health problems. Third, the social domain entails improving support for the SOF members' family as well as the broader SOF community (USSOCOM, n.d.). In understanding the importance of this domain, it is pertinent to consider that SOF is often characterized by close-knit "battalion families" in which support is provided between families of SOF when the service members are on deployment (Rzepka, 2015). POTFF enhances family support through holding events with activities to bring families together. Further, Rzepka (2015) highlights the importance of the SOF members knowing that their families are well taken care as a protective factor against stress while on deployment. Finally, the spiritual performance category within POTFF comprises enhancing a SOF member's sense of religious belonging or otherwise deeper meaning and purpose (USSOCOM, n.d.). To address this complex combination of domains, this programme's effort entails employing specialists such as psychologists, physical therapists, social workers (USSOCOM, n.d.).

Addressing Psychological Strain: The Importance of Confidentiality

One major challenge in developing strategies to help SOF members is the need to counterresistance to help-seeking that may occur for troubled service members. A personal communication with Ben Patty, Former Member of the Federal Bureau of Investigations (FBI) SWAT team, provides a description of an exemplar effort to address psychological strain in another elite group of individuals. According to Patty, the FBI implemented a protocol in which officers involved with a shooting would subsequently be required to speak with a psychologist or psychiatrist.

Further, the FBI addressed potential resistance to seeking help through recruiting an outside private consulting firm offering confidential services. Thus, FBI agents could speak with a mental health professional about any psychological problems without concern that something they say may impact their careers or social connections. While internal providers may be mandated to report certain information to a superior within the organization, external providers are bound by the Health Insurance Portability and Accountability Act of 1996 (HIPAA) and Ethics Code provisions that provide a safeguard for the help seeker's confidentiality (American Psychological Association, 2002; Patty Personal Communication, 2016). As the FBI's SWAT members represent an elite force somewhat analogous to SOF, this example suggests that the above programmes aiming to help SOF must incorporate strategies to maintain the SOF members' confidence that their confidentiality will be upheld.

Limitations

Several key limitations emerged upon review of the above strategies. First, results are varied with respect to the impact of resilience-focused efforts on mental health problems and suicide rates. Rigorous evaluation of outcomes of resilience enhancement research is needed. Additionally, much of the available research on resilience-based programmes exists within populations different from the US SOF. Moreover, the information that is available regarding resilience with SOF specifically lacks rigorous empirical evaluation of outcomes. Thus, it is impossible to infer at this point whether or not resilience-based programmes truly benefit SOF in the long term, such as through any influence on suicide rates. Further, some insist that resilience and rehabilitative efforts will not be enough due to the long and unpredictable deployments faced by SOF service members (United States Army, 2012).

Future Directions

The problem of suicide in the US Special Forces is a relatively new crisis that has emerged during the past decade. The SOF community has become increasingly aware of the need for solutions to the impact of strain on SOF and their families (Rzepka, 2015). At this time, well-researched interventions or preventative programmes for use with this unique group of individuals are not established. Existing research on resilience-based the CSF and ART interventions within the military indicates that a simplistic, one-size-fits-all approach may not a vital strategy and that this finding must inform the development of future iterations of these interventions and resilience strategies among military and other populations. These results further suggest that programmes aiming to improve resilience through providing information to service members must create content that is both

comprehensive and multidisciplinary. Presentations must be tailored to the specific needs, challenges, and diversity of the intended audience. Lastly, future programmes should apply reliable, valid, and consistent outcome measures to evaluate the effectiveness of these delivery systems.

Further, additional efforts from within the military are warranted. Sources state that key areas that must be addressed for improving the situation of SOF are twofold: First, the US military must increase predictability in SOF deployments where possible, such as mandating minimum time for sleep. Second, there is a need to address high deployment length and frequency that is required of SOF service members (Pendleton et al., 2015; United States Army, 2012). The challenge lies in determining the best way to accomplish these aims. One avenue that is suggested for the military in examining means for relieving some of the strain from these deployments on SOF members is to evaluate whether other, conventional military service members may be able to assume some of the responsibilities currently ascribed solely under the scope of SOF capabilities (Pendleton et al., 2015). Thus, additional research is required to explore what additional factors must be added to resilience-focused efforts to maximize support for the service members of USSOCOM.

The evidence to support the utility of resilience programmes is inconclusive and has been challenged by underwhelming results so far; nonetheless, this domain of research warrants further study. Examples of successful programmes in other populations will be discussed below. The available information on the POTFF programme shows that current efforts are aiming towards a holistic approach to decreasing psychological and physical strain. Further, information from the FBI's efforts highlights the importance of maintaining confidentiality, such as through involving outside consultants when working with an elite group of personnel.

References

Acosta, J. D., Becker, A., Cerully, J. L., Fisher, M. P., Martin, L. T., Vardavas, R., … Schell, T. L. (2014). *Mental health stigma in the military.* Santa Monica, California: Rand Corporation. Retrieved from http://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR426/RAND_RR426.pdf.

American Psychological Association. (2002). *Ethical Principles of Psychologists and Code of Conduct.* Retrieved from http://www.apa.org/ethics/code/index.aspx?item=1.

American Psychological Association (2015). *The road to resilience*. APA Help Center. Retrieved from http://www.apa.org/helpcenter/road-resilience.aspx.

Andersen, J. P., Papazoglou, K., Koskelainen, M., Nyman, M., Gustafsberg, H., & Arnetz, B. B. (2015). Applying resilience promotion training among special forces police officers. *SAGE Open, 5*(2), 1–8.

Arnetz, B. B., Arble, E., Backman, L., Lynch, A., & Lublin, A. (2013). Assessment of a prevention program for work-related stress among urban police officers. *International Archives of Occupational and Environmental Health, 86*(1), 79–88.

Bartone, P., Roland, R., Picano, J., & Williams, T. (2008). Psychological hardiness predicts success in U.S. Army special forces candidates. *International Journal of Selection and Assessment, 16*(1), 78–81.

Bennett, J. (2012, January 24). Obama administration quietly altering military's global presence. *U.S. News.* Retrieved from http://www.usnews.com/news/articles/2012/01/24/obama-administration-quietly-altering-militarys-global-presence.

Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist, 59*(1), 20–28.

Bonanno, G. A., Mancini, A. D., Horton, J. L., Powell, T. M., LeardMann, C. A., Boyko, E.J., … Smith, T. C. (2012). Trajectories of trauma symptoms and resilience in deployed U.S. military service members: prospective cohort study. *The British Journal of Psychiatry: The Journal of Mental Science*, *200*(4), 317–323.

Brim, W. (2013). *Staff perspective: The history of the new military culture course*. [Web blog post]. Retrieved from http://deploymentpsych.org/blog/staff-perspective-history-new-military-culture-course.

Brown, N. (2015). *A critical examination of the U.S. Army's Comprehensive Soldier Fitness program*. The Winnower. Retrieved from https://thewinnower.com/papers/49-a-critical-examination-of-the-u-s-army-s-comprehensive-soldier-fitness-program.

Campbell-Sills, L., Cohan, S. L., & Stein, M. B. (2006). Relationship of resilience to personality, coping, and psychiatric symptoms in young adults. *Behaviour Research and Therapy, 44*(4), 585–599.

Castro, C. A., & Kintzle, S. (2014). Suicides in the military: The post-modern combat veteran and the Hemingway effect. *Current Psychiatry Reports, 16*(8), 460.

Checkley, S. (1996). The neuroendocrinology of depression and chronic stress. *British Medical Bulletin, 52*(3), 597–617.

Connor, K. M., & Davidson, J. R. (2003). Development of a new resilience scale: The Connor-Davidson Resilience Scale (CD-RISC). *Depression and Anxiety, 18*(2), 76–82.

Cornum, R., Matthews, M., & Seligman, M. (2011). Comprehensive soldier fitness: Building resilience in a challenging institutional context. *American Psychologist, 66*(1), 4–9.

Council on Foreign Relations. (2013). *The future of U.S. Special Operations Forces*. (Council on Foreign Relations Report No. 66). New York, NY: Robinson, L.

Dean, P., & McNeil, J. (2012). Breaking the stigma of behavioural healthcare. *Special Warfare, 25* (2), 7.

Department of Defense. (2011). *Maintenance of psychological health in military operation*. DODI 6490.05. Washington, DC.

Feickert, A. (2015). U.S. Special Operations Forces (SOF): Background and Issues for Congress. *Congressional Research Service*. Retrieved from https://www.fas.org/sgp/crs/natsec/RS21048.pdf.

Feskanich, D., Hastrup, J. L., Marshall, J. R., Colditz, G. A., Stampfer, M. J., Willett, W. C., & Kawachi, I. (2002). Stress and suicide in the Nurse's Health Study. *Journal of Epidemiology and Community Health, 56*(2), 95–98.

Fredriksen, J.C. (2011). *Fighting elites: A history of U.S. Special Forces.* Santa Barbara, CA: ABC-CLIO.

Garamone, J. (2015). *DOD News, Defense Media Activity.* Care coalition supports wounded, ill special ops troops. Retrieved from http://www.defense.gov/News-Article-View/Article/604112/care-coalition-supports-wounded-ill-special-ops-troops.

Gilmartin, K. M. (2002). *Emotional survival for law enforcement: A guide for officers and their families*. Tucson, AZ: E-S Press.

Gonzalez, G., Singh, R., Schell, T. L., Weineck, R.M., & Rand Corporation. (2014). An evaluation of the implementation and perceived utility of the Airman Resilience Training program. *RAND Health Quarterly, 4(2).*

Harms, P. D., Herian, M. N., Krasikova, D. V., Vanhove, A., & Lester, P. B. (2013). *The Comprehensive Soldier and Family Fitness program evaluation report #4*: *Evaluation of*

resilience training and mental and behavioural health outcomes. Retrieved from http://csf2.army.mil/supportdocs/TR4.pdf.

Hartmann, E., & Grønnerød, C. (2009). Rorschach variables and Big Five scales as predictors of military training completion: A replication study of the selection of candidates to the naval special forces in Norway. *Journal of Personality Assessment, 91*(3), 254–264.

Hoffman, F. G. (2006). Complex irregular warfare: The next revolution in military affairs. *Orbis, 50*(3), 395–411.

Hoge, C. W., Castro, C. A., Messer, S. C., McGurk, D., Cotting, D. I., & Koffman, R. L. (2004). Combat duty in Iraq and Afghanistan, mental health problems, and barriers to care. *New England Journal of Medicine, 351*(1), 13–22.

Institute of Medicine. (2014). Committee on the assessment of ongoing efforts in the treatment of posttraumatic stress disorder; *Board on the health of select populations; Institute of Medicine. Treatment for posttraumatic stress disorder in military and veteran populations: Final assessment*. Washington, DC: National Academies Press (US). Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK224875.

Johnson, J., Wood, A. M., Gooding, P., Taylor, P. J., & Tarrier, N. (2011). Resilience to suicidality: The buffering hypothesis. *Clinical Psychology Review, 31*(4), 563–591.

Kessler, R. C., Borges, G., & Walters, E. E. (1999). Prevalence of and risk factors for lifetime suicide attempts in the National Comorbidity Survey. *Archives of General Psychiatry, 56*(7), 617–626.

Kilcullen, R. N., Mael, F. A., Goodwin, G. F., & Zazanis, M. M. (1999). Predicting U.S. Army Special Forces field performance. *Human Performance in Extreme Environments, 4,* 53–63.

Krueger, J. I. (2011). Shock without awe. *American Psychologist, 66*(7), 642–643.

Kulesza, M., Pedersen, E., Corrigan, P., & Marshall, G. (2015). Help-seeking stigma and mental health treatment seeking among young adult veterans. *Military Behavioural Health, 3*(4), 230–239.

Liu, D. W., Fairweather-Schmidt, A. K., Roberts, R. M., Burns, R., & Anstey, K. J. (2014). Does resilience predict suicidality? A lifespan analysis. *Archives of Suicide Research, 18*(4), 453–464.

Luthar, S. S., Cicchetti, D., & Becker, B. (2000). The construct of resilience: A critical evaluation and guidelines for future work. *Child Development, 71*(3), 543–562.

Masten, A. S., Cutuli, J. J., Herbers, J. E., & Reed, M. G. J. (2009). Resilience in development. In C. R. Snyder & S. J. Lopez (Eds.), *Oxford handbook of positive psychology* (2nd ed., pp. 117–131). New York: Oxford University Press.

Matheson, F. I., Moineddin, R., Dunn, J. R., Creatore, M. I., Gozdyra, P., & Glazier, R. H. (2006). Urban neighborhoods, chronic stress, gender and depression. *Social Science and Medicine, 63* (10), 2604–2616.

McCalman, J., Bainbridge, R., Russo, S., Rutherford, K., Tsey, K., Wenitong, M., … Jacups, S. (2016). Psycho-social resilience, vulnerability and suicide prevention: Impact evaluation of a mentoring approach to modify suicide risk for remote Indigenous Australian students at boarding school. *BMC Public Health*, *16*(1).

McClintock, M. (1992). *Instruments of Statecraft: U.S. Guerrilla Warfare, Counterinsurgency, and Counter-Terrorism,* 1940–1990. New York, NY: Pantheon Books.

Nock, M. K., Stein, M. B., Heeringa, S. G., Ursona, R., Colpe, L. J., Fullerton, C. S., … Kessler, R. (2014). Prevalence and correlates of suicidal behaviour among soldiers: Results from the army study to assess risk and resilience in service members (Army STARRS). *JAMA Psychiatry*, *71*(5), 514–522.

Patty, B. (personal communication, May 17, 2016).

Pawelski, J. O. (2003). William James, positive psychology, and healthy-mindedness. *The Journal of Speculative Philosophy (New Series), 17*(1), 53–67.

Pendleton, J., Ullengren, M., Barnes, T., Carr, T., Grant, C., Lundsford, T., … Silver, M. (2015). Special operations forces: Opportunities exist to improve transparency of funding and assess potential to lessen some deployments. *Government Accountability Office Washington D. C.* Retrieved from http://oai.dtic.mil/oai/oai?verb=getRecord&metadataPrefix=html&identifier=ADA621551.

Picano, J., & Roland, R. R. (2012). Assessing psychological suitability for high-risk military jobs. In J. H. Laurence & M. D. Matthews (Eds.), *The Oxford handbook of military psychology* (pp. 148–157). New York, NY: Oxford University Press.

Pompili, M., Innamorati, M., Szanto, K., Di Vittorio, C., Conwell, Y., Lester, D., … Amore, M. (2011). Life events as precipitants of suicide attempts among first-time suicide attempters, repeaters, and non-attempters. *Psychiatry Research, 186*(2–3), 300–305.

Prados, J. (2015). *The US special forces: What everyone needs to know?*. Oxford, UK: Oxford University Press.

Prigerson, H. G., Maciejewski, P. K., & Rosenheck, R. A. (2001). Combat trauma: Trauma with highest risk of delayed onset and unresolved posttraumatic stress disorder symptoms, unemployment, and abuse among men. *The Journal of Nervous and Mental Disease, 189*(2), 99–108.

Ramchand, R., Eberhart, N. K., Guo, C. Pedersen, E. R., Savitsky, T. D., Tanielian, T., & Voorhies, P. (2014). Developing a research strategy for suicide prevention in the Department of Defense: Status of current research, prioritizing areas of need, and recommendations for moving forward. Santa Monica, CA: RAND Corporation. Retrieved from http://www.rand.org/pubs/research_reports/RR559.html.

Reivich, K. J., Seligman, M. E., & McBride, S. (2011). Master resilience training in the U. S. Army. *American Psychologist, 66*(1), 25–34.

Roy, A., Sarchiapone, M., & Carli, V. (2007). Low resilience in suicide attempters. *Archives of Suicide Research, 11*(3), 265–269.

Rzepka, R. L. (2015). *Humans not hardware: Families key to special forces success*. Retrieved from https://www.army.mil/article/154603/Humans_Not_Hardware__Families_Key_to_Special_Forces_Success/.

Sarkesian, S., & Connor, R. (2006). *The US military profession into the 21st century: War, peace and politics*. Abingdon, UK: Routledge.

Schemmer, B. F., & Carney, J. T. (2003). *U.S. Special Operations Forces*. Fairfield, CT: Hugh Lauter Levin Associates.

Seligman, M. E. P. (1990). *Learned optimism*. New York, NY: Knopf.

Seligman, M. E. P (1998). *The President's address from the 1998 APA Annual Report.* Retrieved from http://www.ppc.sas.upenn.edu/aparep98.htm.

Seligman, M. E. P., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist, 55*(1), 5–14.

Shanker, T. & Oppel, R. A. War's elite tough guys, hesitant to seek healing. *The New York Times,* p. A1. Retrieved from http://www.nytimes.com/2014/06/06/us/politics/wars-elite-tough-guys-hesitant-to-seek-healing.html?_r=0. Accessed 6 June 2016.

Steenkamp, M. M., Nash, W. P., & Litz, B. T. (2013). Post-traumatic stress disorder: Review of the comprehensive soldier fitness program. *American Journal of Preventive Medicine, 44*(5), 507–512.

Stewart, D., Sun, J., Patterson, C., Lemerie, K., & Hardie, M. (2004). Promoting and building resilience in primary school communities: Evidence from a comprehensive 'health promoting school' Approach. *International Journal of Mental Health Promotion, 6*(3), 26–33.

Strobel, W. (2014). U.S. Special forces struggle with record suicides: Admiral. Retrieved from http://www.reuters.com/article/us-usa-military-suicides-idUSBREA3G2EK20140417.

The United States Congress (2015). Committee Reports 113th Congress (2013–2014): House Report 113-473. Retrieved from http://thomas.loc.gov/cgi-bin/cpquery/?&dbname=cp113&sid=cp113HLTLZ&refer=&r_n=hr473.113&item=&&&sel=TOC_119947&.

The United States Department of Defense. (2016). "Department of Defense Releases Fiscal Year 2017 President's Budget Proposal". Retrieved from http://www.defense.gov/News/News-Releases/News-Release-View/Article/652687/department-of-defense-DOD-releases-fiscal-year-2017-presidents-budget-proposal.

Tondo, L., Baldessarini, R. J., Hennen, J., Minnai, G. P., Salis, P., Scamonatti, L., … Mannu, P. (1999). Suicide attempts in major affective disorder patients with comorbid substance use disorders. *Journal of Clinical Psychiatry, 60* (suppl 2), 63–69.

Turnley, J. (2008). *Retaining a precarious value as Special Operations go mainstream*. MacDill Air Force Base, Florida: Joint Special Operations University.

United States Army. (2012). Q&A with Admiral William H. McRaven. *Special Warfare.* Retrieved from http://www.soc.mil/swcs/SWmag/archive/SW2502/SW2502QAAdmiral-WilliamMcRaven.html.

United States Government Accountability Office. (2015). Special Operations Forces: Opportunities exist to improve transparency of funding and access potential to lessen some deployments. Retrieved from http://www.gao.gov/assets/680/671462.pdf.

United States Special Operations Command. (2014a). Joint publication—JP 3–05, Special Operations. Retrieved from http://www.dtic.mil/doctrine/new_pubs/jp3_05.pdf.

United States Special Operations Command. (2014b). ARSOF Operating Concept 2022. Retrieved from http://www.soc.mil/Assorted%20Pages/ARSOF%20Operating%20Concept%202014.pdf.

United States Special Operations Command. (n.d.). Director's Emphasis. Retrieved from http://www.socom.mil/POTFF/Shared%20Documents/POTFF_DirectorsEmphasis.aspx.

U.S. Government Accountability Office. (2015). *Opportunities exist to improve transparency of funding and assess potential to lessen some deployments (GAO-15-571)*. Washington, D.C: U. S. G.P.O.

Wood, D. (2016). These elite troops spent 15 years at war. This program tries to prepare their minds and bodies for the next 15. *Huffington Post.* Retrieved from http://www.huffingtonpost.com/entry/special-forces-preservation-force-family_us_5710180ae4b0018f9cb991d0.

Chapter 29
Innovations in Military and Veteran Suicide Prevention

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Historical Significance of the US Military Suicide Epidemic

Suicide distress within the military is not a novel concern. Beginning in the nineteenth century, studies were carried out in order to establish the reasons for suicide completion (Braswell & Kushner, 2012). A major finding was the correlation between psychopathology and the destruction of social bonds. Initially, reactionary programming from this finding focused on program enhancement for the general public on social and psychological issues. During this time, it was assumed that service members maintained social bonds upon coming home to their families, thereby leaving them underserved. Changes in psychological considerations within the US military became intertwined during World Wars I and II with the integration of contracted psychologists working for the armed forces as the demand for psychological services increased (Seligman & Fowler, 2011). Fast-paced psychological screening for recruits became important for the fast growing force (Cardona & Ritchie, 2007).

Since World War II, modern testing practices have primarily concentrated on gross mental health issues, global functioning, intelligence, and vocational aptitude (Segal1, 2004). Military screening procedures have been historically proven as

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effective tools in determining deficiencies in domains such as psychosis and low intellect (Jones, Hyams, & Wessely, 2003). Measures that predict positive leadership styles, retention, susceptibility to mental illness and suicide attempts, and vulnerability under stressful situations are still under consideration.

Concern over suicide awareness and prevention in the armed forces community has gained greater attention in the past several years. The recent wars in Afghanistan and Iraq have highlighted differences between those serving in the Vietnam-era, to those that are completely volunteer, older at time of enlistment, and more diverse (Kang et al., 2015). When deployed, service members are leaving their families more often and for longer periods of time. No longer can we assume that pre-screening measures predict the influence that trauma, injury, event exposure, and other life experiences can have on the military member or veteran over time (Bruce, 2010).

A Call for Change: Trends in Recent Suicide Data

In 2012, the Department of Veterans Affairs (VA) released a preliminary study on suicide data collected from 1999 to 2010. Data found that consistently, 18–22 Veterans had been committing suicide daily during this timeframe (Kemp & Bossarte, 2012a). This study suggested a positive trend in suicide prevention as the data exposed was becoming less correlational to the growing overall national suicide trends. While the national average suicide rate is increasing, the number of suicides within the veteran population is staying the same, thereby implying a downward trend for veterans (Kemp & Bossarte, 2012a). Alternately, the phenomenon "healthy soldier effect" (p. 99) that was coined in earlier wars to describe the difference in suicide rates between veterans and the overall civilian population (Kang et al., 2015). Before recent wars in Iraq and Afghanistan, this concept was based on the assumption that recently separated active duty military members were healthier than the general public based on initial entry requirements and access to care during and after military service. The increase in recent numbers is inconsistent with this effect (Kang et al., 2015).

Limitations of this VA 1999–2010 study are significant. The data used were not extensive in that only; data from 21 states were collected excluding California and Texas; two heavily veteran-populated states (Kemp & Bossarte, 2012a). Using 2009 VA profiling data, 26.1% of male and 23.1% of female veterans use the VA for health-connected concerns in general ("Profile of Veterans," 2011). The lack of data may contribute to even lower levels of reporting in this VA study. Additionally, this leaves a large gap in determining how physical and behavioural health services are provided for close to 75% of veterans. Finally, data from Special Operations Commands do not release their suicide data although the media implies that there are growing numbers of suicide rates within this elite military population. Based on these limiting factors, the initial numbers released by the VA may be a gross underestimation of the current suicide epidemic within the armed forces community.

Active and reserve components do not yet have a streamlined suicide tracking system that captures succinct data between all branches. The following information is a proximate glance of current suicide trends. Since 2006, Navy suicide data on its active and reserve members has fluctuated with a record high of 68 sailors committing suicide in 2014 (Navy Suicide Data, 2016). Further, running statistics show that in the month of April 2016, four active component and one reserve component sailor have completed suicide.

Based on quarterly Department of Defense (DoD) reports, there is a significant amount of suicide completion within each active military branch. During the second quarter of 2015 (the latest data available), trends show stabilization or growth in suicide completions between second quarters in 2013, 2014, and 2015 (Franklin, 2015). Air Force active duty suicide completions increased from 14 airmen in 2013 to 17 in 2015. Active Duty Army suicide completions grew from 27 in 2013 to 28 in 2015 and Navy active duty increased from 7 sailors to 14. Active duty Navy hospital corpsmen attached to Marine combat units remained stable at 12 for both 2013 and 2015s second quarters. Overall, Active Component suicide rates increased from 254 to 273 service members from 2013 to 2014 (Franklin, 2015).

Reserve components of these branches showed somewhat different results. Army reservist suicide increased from 11 to 16 soldiers in 2013 and 2015 and the Air National Guard increased from 2 to 5 personnel (Franklin, 2015). The Army National Guard showed a moderate decrease in suicide from 38 to 22 soldiers. All other reserve components showed stability or decrease in numbers that ranged from 2 to 5 service members each year. The overall reserve component (including the National Guard) decreased from 220 service members in 2013 to 170 in 2014. These raw numbers do not take into account the ratio of population of service members in each branch to suicide completion.

The DoD Suicide Event Report (DoDSER, 2016) summarized that 269 active component and 169 Reserve and National Guard members committed suicide in 2014. Both the Quarterly Report as well as the DoDSER are inconsistent in overall numbers of suicide reported despite being found on the same website. This highlights the potential need for a more systematized tracking method within the armed forces, even within the DoD.

Generally, males have been found to have higher suicide rates than females in a ratio of 3:1 (Lambert & Fowler, 1997). With a generally large population of men in the service, data could naturally be skewed towards a higher suicide prevalence. In addition, men of older age (especially veterans) are more prone to suicide risk and increased depressed moods (Kaplan, McFarland, Huguet, & Valenstein, 2012; Kemp & Bossarte, 2012a; Lambert & Fowler, 1997). In the 1999–2010 VA study, a majority of suicides recorded were men 50 years of age and older (Kemp & Bossarte, 2012a). According to the 2013(a) Department of Defense (DoD) demographics profile, 25.8% of military members are over the age of 41. This may be an important consideration when thinking about service-connected active and reserve men enrolled in VA benefits. As discussed above, only close to 25% of veterans are service-connected to the VA (Kemp & Bossarte, 2012a). There seems to be a gap in provisions for currently serving military members over 41 years old that are at higher

risk for suicide. Further, high-risk physical or mental illness as well poor social networks and access to firearms could be confounding variables (Lambert & Fowler, 1997; Kaplan, McFarland, Huguet, & Valenstein, 2012).

Nock et al. (2013) highlighted potential explanations for the difficulties in detecting, forecasting, and ultimately preventing these growing suicide rates within the military. They found that factors such as stigma and impetus to conceal suicidal thoughts and feelings were among the main reasons found. DeViva et al. (2016) found a significant correlation among veterans from Operations Enduring Freedom (OEF), Iraqi Freedom (OIF), and New Dawn (OND) reporting greater views of mental health care were more likely to seek mental health treatment.

In addition to these risk factors, Milliken, Auchterlonie, and Hoge (2007) found that reservists may have additional layers of threat. Primarily, once returning home from deployment, most service members lose their health insurance. They also saw that stressors such as the lack of civilian occupation and loss of social support provided by their comrades while deployed may leave the service member with less energy to seek help.

Aims to Correct: Institutional Level Suicidal Prevention/Intervention Programs

In 2013(b), a DoD Instruction (DoDi) issued standards for limiting stigma placed on service members that showed signs of distress. Command-directed behavioural health evaluations were instituted for all branches, including the Coast Guard, and charge commanders the ability to refer a subordinate for further assessment and treatment if deemed necessary, to a mental health care provider. Training at the command level would allow a unit commander to make appropriate recommendations for further action. If he or she deems the service member fit for duty, this DoDi gives instructions on provisions for documentation for these non-emergent incidents. The commander may also non-mandatorily suggest treatment for his subordinate under this instruction. Prior to this DoD is being published however, all branches of service had already implemented plans of action to promote a safe environment for service members to receive the help and resources they need. This shows a lag between all branches of service and the DoD in recognizing and implementing action to address the increased problem of suicide.

In 2009, the Chief of Naval Operations ordered all members within the chain of command and support elements (to include military treatment facilities, counsellors, the Fleet and Family Support Center, medical personnel, chaplains, and civilian staff) to take an active role in suicide prevention training, intervention, response, and reporting for active and reserve service members, as well as Navy civilian employees (Department of the Navy DoN, 2009). Commanding Officers (COs) were given instructions on training their service members once a year on suicide prevention as

well as glossaries of related suicide terms and other resources to identify and report those in need of assistance. Further guidance was issued under the Operational Stress Control (OSC) Program in 2015 as a way to fundamentally build resilience and stress education at the sailor and unit level (DoN, 2015).

Similarly, the Air Force has similar programming for suicide prevention. The Air Force Suicide Prevention Program (AFSPP) emphasizes leadership involvement, specifically with respect to the role of the commander in contacting local resources for a wingman in need of mental health services (Department of the Air Force DoAF, 2014). Initial suicide prevention face-to-face training as well as continuing annual computer or face-to-face Total Force Awareness Training teaches airmen how to detect and assist those in need of urgent behavioural health care. It also teaches healthy protective factors and promotes help-seeking behaviour.

Marine corps order 1720.2 (2012) outlined a detailed Marine Corps Suicide Prevention Program that was tasked from the commandant to all levels of the Marine Corps. Along with key considerations for training and follow-up at the commander levels, new key concepts are addressed. A core component of this message is to encourage peer-to-peer mentorship at all levels. Also, the reintegration of the marine is enforced as one that is thoughtful and stress-limiting.

The Army component's current regulation focuses its attention on the Army Suicide Prevention Program (ASPP) for both Active and Reserve soldiers. This commander's program actions five overarching strategies that involve several levels of "gatekeepers" in order to manage and implement this program. These strategies include soldier development of life coping skills, creating a positive command climate, training, monitoring, and integrating gatekeepers (chaplains, chaplains' assistants, program counsellors, Army Suicide and Family Advocacy Program workers, Army Emergency Relief counsellors, emergency room staff, and Medical and Dental health care professionals), program monitoring and assessment (Department of the Army (DoA), 2015).

The state-funded Army National Guard faces funding issues that will be in place through the year 2020 while they also try to combat this suicide epidemic (Rynders, Sokolowski, & Williams, 2013). Even with financial strains and fewer opportunities for intervention to prevent and combat suicide when compared to the Army Active and Reserve components, the Army National Guard has succeeded in initial suicide prevention programming. Since 2009, each state is afforded one Director of Psychological Health to assist Guardsmen and women in emergency situations as well as to advise state leadership on issues related to the soldiers in their prospective states.

The Ask, Care, Escort (ACE) model was developed in 2012 as annual training for all Active duty, Reserve, and National Guard Army soldiers. Like the programs in other components above, ACE identifies risk factors and warning signs, as well as provides resources for individuals in a brief class (DoA, 2012). Once soldiers develop into leadership positions, they are required to take Ask, Care, Escort-Suicide Intervention (ACE-SI) training which is a one-time class that promotes peer-mentorship and identification of at-risk soldiers. Finally, Applied Suicide Intervention Skills Training (ASIST) teaches intervention skills to

specifically identified leaders and acts as a gatekeeper at the unit level. These trained individuals are taught how to identify suicidal soldiers and direct them to appropriate chaplains or other mental health resources.

Chaplains play a large and crucial role in the ASIST program function as they are trained to mentor ASIST delegates and work closely once an at-risk soldier is referred (Comprehensive Soldier and Family Fitness, 2010). There is some empirical evidence showing that the military has a somewhat successful collaborative model that makes chaplains a first-line service provider to at-risk service members although it is vague on whether stateside versus deployed environment numbers of reports are skewed (Besterman-Dahan, Gibbons, Barnett, & Hickling, 2012). In the light of chaplain success within military units, deficits in using chaplains and other mental health care professionals have been found to be limited and lacked solid unified effort with military decision-makers in program implementation (Comprehensive Soldier and Family Fitness, 2010).

The Army's Comprehensive Soldier and Family Fitness Training Center (CSF2-TC) is an additional program build to promote resilience using a five-dimension model (DoA, 2014). These programs emphasize the soldier's physical, emotional, social, spiritual, and family strengths. The first program established was the Global Assessment Tool (GAT) which is used as an online annual self-report assessment that measures each strength dimension and provides individualized feedback and suggested training materials (Peterson, Park, & Castro, 2011; Lester, McBride, & Cornum, 2013; Cornu, Matthews, & Seligman, 2011).

Master Resiliency Training (MRT) is the second program focused on training leaders to train their units on resilience skills using a sports psychology method of instruction (DoA, 2014). Depending on the level of training the leader completes, coursework is taught in classroom-style, small group format at the unit. Aggregated data is collected as part of the third program in order to assess and further develop CSF2-TC strategies.

All members of the military are afforded the benefits of online resources. Give an Hour is a non-profit organization that organizes mental health professional volunteers to provide free services to military personnel involved in OEF and OIF missions and their families ("Give an Hour," 2016). Military One Source is an online tool that offers behavioural health, financial, legal, family, and employment information to all service members ("Military One Source," 2016). Reserve soldiers are afforded up to 12 sessions face-to-face with civilian mental health providers. Other counselling services provided include telephonic, video, peer-to-peer, and online counselling. Vets4Warriors is another website for all service members that focuses on peer-to-peer support ("Vets4Warriors," 2016). Peers are available for USA and international calling with confidential 24-h-per-day availability with professional mental health resources for those in crisis.

The VA has also implemented several programs in response to the high numbers of veteran suicides. One program included with the systemization of suicide attempt data collection and reporting in 2008 (Kemp & Bossarte, 2012b). The data from this program found over 46,000 suicide attempts between the years 2008 and 2012. At

the same time, the VA issued a safety plan treatment manual for VA mental health clinicians that assist in the evaluation, treatment, and prevention of suicidal patients (Stanley & Brown, 2008). This program describes coordinating instructions for the development of a safety plan, assisting the veteran with coping strategy identification and establishing support systems, provisions of resources, and reducing the use of lethal means via access limitation.

The Support and Family Education (SAFE) Program was developed in order for families to receive psychoeducation around living with veterans diagnosed with mental illness and PTSD (Sherman, 2008). It is an 18-session program completed at the VA that stresses psychoeducation around mental illness, communication, self-care, problem-solving, rights and responsibilities, and stigma. Sherman (2003) found that in the first 3 years of the program, there was a significant satisfaction with the education and support provided by the workshops. Additionally, the Veteran's crisis line was developed in 2007 to support veterans in crisis along with their family and friends on a 24-h basis ("Veteran's Crisis Line," 2016). Since its induction, over 2.2 million calls and 51,000 texts have been answered by the call centre with emergency responders being dispatched over 58,000 for those in severe crisis. Local VA programs have also endorsed gun safety lock programs that provide veterans with gun locks to protect themselves and their families, but little evidence of program effectiveness has been found. There is little outside data to support whether these programs are positively contributing to suicide prevention.

Predicted Trends in Programming

Trends in programming are offering more prevention strategies in each branch of active and reserve commands. Peer-to-peer counselling and promoting positive command climates have been addressed more recently both in research and by command order. Community resources should focus more on enhancing current care and consider any barriers to care that may be present (McCarthy et al., 2015). Also, the follow-up with the service member after initial visit(s) and re-evaluation of treatment should be considered for a more longitudinal and further suicide preventative strategy. In regard to veteran populations, age-related programs should be developed as well as more effective programs to reduce highly lethal means of suicide (Kaplan, McFarland, Huguet, & Valenstein, 2012).

Influence of Social Programs

The progress that has been made by DoD and the VA to reduce suicide and risk through proactive prevention and training will hopefully help in the battle against the loss of veterans. Experts in working with suicidal patients have identified a number of risk and protective factors that contribute to the complex act of suicide.

Some of these risk factors include hopelessness, isolation from friends and family, and lack of sense of purpose in life or reason for living (Bongar & Sullivan, 2013). Many military members and veterans experience these risk factors, especially following deployment or leaving active duty (Pietrzak et al., 2010; Wounded Warrior Project, 2015). For example, only 52% of veterans recently surveyed reported their life has clear goals and purpose (Wounded Warrior Project, 2015). Alternatively, strong protective factors in the prevention of suicide within veterans include social support, specifically support from others with whom they share like experiences, and a strong sense of accomplishment or purpose (Pietrzak et al., 2010). Most mental health care providers are aware of these risk and protective factors but may find it difficult to develop the protective factors through treatment alone. This is where programs outside the well-publicized systematic interventions can play a significant role in suicide prevention.

In the USA, there are hundreds of private and non-profit organizations with the primary mission of helping military and veterans in need. The organizations that warrant a closer look in helping prevent suicide are those that develop the protective factors of social support and simultaneously provide a sense of purpose. A couple examples of this are Team Rubicon and The Mission Continues.

Team Rubicon is a Non-Government Organization (NGO), non-profit agency that was founded in 2010 by two US Marines in response to the devastating earthquake in Haiti (Wood, 2011). The initial mission of Team Rubicon was to use veteran military skills to respond to disasters worldwide, often going into places other organizations could or would not go due to perceived danger. However, following the suicide of one of its original members the founders realized they were doing more than providing aid as rapid responders in disaster around world, but rather they were providing veterans an opportunity to connect with others and develop a sense of purpose. Their mission evolved into a veteran service organization that uses disaster response to provide veterans with a sense of purpose (Wood, 2011). Since 2010, Team Rubicon has established and mobilized a network of 25,000 veterans in disaster response missions (Torres, 2015).

Team Rubicon (2014) found that 98% of the members surveyed believed their service with Team Rubicon was meaningful, and 71% had a more positive outlook to the future as a result of their participation. Additionally, 78% of veterans stated they had developed stronger relationships through Team Rubicon as compared to other post-military service activities (Team Rubicon, 2014). Nearly, three quarters of the veterans involved with Team Rubicon believe the relationships they have developed through their service in Team Rubicon is as strong or stronger than those they developed while on active duty.

Pietrzak et al. (2010) found veterans who perceived a greater sense of purpose and control were less likely to report suicidal ideation. In terms of developing stronger protective factors against suicide Team Rubicon has demonstrated its model of teamwork and unit mission to be successful with veterans. Another organization that has veteran service and sense of accomplishment as one of its goals is The Mission Continues.

The Mission Continues is a private organization founded by a military veteran out of St. Louis, MI that has branches throughout the USA. The Mission Continues connects post-9/11 veterans with non-profit groups in their local communities such as Habitat for Humanity or the Red Cross (Torres, 2015; The Mission, 2016). The Mission has over 4500 volunteers that are organized into service platoons, which are smaller groups of volunteers within their community. This organization feature further provides veterans with a sense of belonging and structure that at-risk veterans are lacking. The requirement of being a post-9/11 veterans allows for the common bond with other veterans who have served in the same time of war. This built in stipulation provides veterans an established way to find others who are their same age that perhaps visiting the VA or other veteran organizations do not have. Talking with another Post-9/11 veterans was found to be one of the most effective mental health resources for veterans (Wounded Warrior Project, 2015).

Additionally, a unique part of The Mission Continues is the emphasis on mentoring within the community. There are many documented benefits of being a mentor including a sense of satisfaction and fulfilment received from fostering the development and making positive impactful connection with others (Ragins & Scandura, 1999; Lafleur & White, 2010). The Mission Continues is a uniquely organized veteran volunteer service that develops a sense of accomplishment and meaning as well as socially connecting veterans with peers who shared similar experiences.

Team Rubicon and The Mission Continues are just a couple of the many local and national programs that get veterans together to accomplish a mission. For many reasons, the psychosocial aspect of military and veteran mental health was minimized. Now, we are finding that veterans experience a stronger need for purpose and accomplishment, especially following deployment or leaving active duty. In conjunction with the clinical standards of care for at-risk veterans, getting them involved in these types of organizations can provide an opportunity to develop proactive factors that therapy and medication alone have not been able to do.

Shame, stigma, and discrimination are major reasons why people with mental health problems avoid seeking treatment, regardless of their race or ethnicity (DHHS/PHS, 2001). This is particularly salient within the military and veteran population. Despite the 75% of veterans surveyed report sleep problems, 72% that report somatic symptoms, and the nearly 70% that report depression, only half of those veterans seek services to treat their mental health (Wounded Warrior Project, 2015). Historically, there is shame associated with admitting weakness, especially mental weakness within the military. Efforts have been made through the DoD and VA to reduce this shame and stigma associated with “mental weakness”, but it is still very present. Recent studies still find these issues present, nearly a quarter of veterans and military members feel they would be treated differently if they sought help, even from superior officers or within their chain of command (Greden et al., 2010; Wounded Warrior project, 2015). The idea that everyone has an essential role in the mission and if you fail at your role, you are failing everyone around you and potentially the mission itself is embedded in every new recruit during basic training. For many veterans admitting they have a problem, even after leaving active duty, is

violating a basic tenant of military life. This is just one example of many culturally based types of stigma military and veterans are influenced by. This may also be a reason that previous studies find association between suicide and stigma (Sudak, Maxim, & Carpenter, 2008).

As previously stated, the DoD and VA are taking great efforts to decrease the stigma around mental health at a systematic level. These efforts are having minimal effects. What has been shown to have better effects is working at a lower level with peer-to-peer programs and interventions. In 2012, the VA started hiring veterans to help seek out other veterans who were reluctant to seek help (Grenden et al., 2010). Peer-to-peer programs have been successful in decreasing suicidal ideations and suicide. In prison populations, where there is a distinct cultural variant to suicide, a peer-to-peer program reduced completed suicides in a 3-year time frame (Hall & Gabor, 2004). In other peer-to-peer programs, high-risk individuals were more likely to seek professional help and trust providers (Wayman et al., 2010). Additionally, peer-to-peer programs have been seen to lower the number of suicide attempts and increase knowledge about depression and suicide (Aseltine & DeMartino, 2004). Because the military is essentially a minority culture with a stance of "Us versus Them" in regards to civilians, it makes sense that peer-to-peer programs would help veterans at risk where systematic interventions have not.

There are many peer-to-peer programs aimed at helping veterans in need such as the Wounded Warrior Project (WWP) and Warrior2Warrior (W2W). The WWP is an internationally known organization that has helped thousands of veterans recover from physically debilitating injuries that they accorded in the line of duty, but they are also involved in helping veterans recover from mental health issues. One of the programs within WWP is Peer Support. The goal of the Peer Support program is to help veterans develop relationships with other veterans further along in their recovery (Wounded Warrior Project, 2015). Much like a Sponsor's role in Alcoholics Anonymous (AA), the Peer Support program gives veterans in recovery another resource to reach out to, specifically a resource that has been where they are and has come from the same military culture.

Warrior2Warrior is another peer-to-peer program that specifically targets Special Forces veterans and their family, where mental health stigma and shame is a main reason to not seek services. This program is a peer-to-peer mentorship program as well as a training program that emphasizes building resiliency. This organization is unique in its dedication to helping veterans in immediate crisis. By visiting their website, a veteran can directly connect with a peer mentor and speak with confidentiality about current issues and where to get help. This program is beneficial for veterans and active duty military members that have concerns about privacy and finding someone who understands their individual experiences and struggles.

Military Suicide Through a Cultural Lens

At the end of 2014, close to 1.4 million people were serving in the US military (US Defense Manpower Data Center DMDC, 2015) and there are nearly 22 million veterans in the U.S population (VA, 2014). The military is seen to have its own culture and its service members gain a unique sense of belonging and purpose. Military culture and a sense of belonging are important to veterans, and often clinicians working with veterans are advised to keep in mind that many veterans feel a sense of belonging to a separate and different class of American, which can be very important to their self-image, values, health behaviours, and coping styles (Hsu & Ketchen, 2013).

Being a member of the military becomes a strong part of an active duty or veteran's identity. It is well documented that cohesion and a strong sense of belonging has an effect on active duty veteran's sense of well-being (Brooks, 2005). Within a large group such as the military that is composed of Americans from around the country, it is expected to see a variety of different people. The military is a unique culture due to its ability to take multiple cultures and intersections of cultural identity and, generally speaking, strip those differences away through basic training to develop a highly diverse group with the same core values and goals. Some of those values, core beliefs, and goals that are beneficial in completing the mission get in the way in combating mental health and illness.

If we begin to think of the military as a culture, we must also look that the cultural basis of their problems and how to properly assess these problems and risk. Chu, Goldblum, Floyd, and Bongar (2010) developed a cultural model of suicide that identified the importance of other aspects of suicide such as expression, experience, risk factors, or protective factors. Difference within a culture on their view of suicide and risk cause a problem for clinicians using case formulation developed from the normalized white western culture. For example, asking a veteran about hyper vigilance tendencies and if they are comfortable in a crowd, common PTSD screen questions may not provide a provider with the proper information. Veterans are trained to be vigilant, it is a skill required while on active duty, so they may present positively with PTSD symptoms when in context hyper vigilance is not abnormal behaviour.

Additionally, methods of inquiry about risk that decrease potential of stigma or embarrassment may elicit a more accurate picture of risk for persons prone to hiding suicidal ideation (Chu et al., 2010). In the past, if a veteran acknowledged having suicidal ideations, they were immediately removed from their job, unit, and place of belonging to receive the help they needed. Although the big picture of the service member getting help is what is important, by removing a service member from their job is likely removing their protective factors against actual suicide. This is just one possible reason veterans are reluctant to be forthcoming in their risk severity. It is imperative that clinicians and health care providers are culturally competent when working military members and veterans, especially when assessing and treating for risk.

Conclusion

Suicide is a multifaceted complex event that plagues our country. It unfortunately plagues our veterans at an alarming rate. Our understanding of this tragic event is evolving. It is unknown if science will ever be able to identify a single one trait or biological marker that will be the cause of suicide. But continuing to tackle each contributing effect will be beneficial. Military and veterans suicide poses a complicated problem because the risk factors that most veterans possess are often directly associated with their sacrifices serving their country. Both the DoD and the VA are continually working to improve accessibility, services, and proactive prevention. Outside the DoD and VA, the resources that provide additional protective factors should not be minimized. Getting veterans involved in a structured organization to instill a sense of purpose while simultaneously developing social support and connections is ideal. The use of peer-to-peer mentoring programs can help veterans and active duty military members further develop personal connections and understanding. Lastly, taking a deeper look at military and veterans with a cultural lens may be the answer to more appropriate and accurate risk assessment and treatment.

References

Aseltine, R. J., & DeMartino, R. (2004). An outcome evaluation of the SOS Suicide Prevention Program. *American Journal of Public Health, 94*(3), 446–451.

Besterman-Dahan, K., Gibbons, S. W., Barnett, S. D., & Hickling, E. J. (2012). The role of military chaplains in mental health care of the deployed service member. *Military Medicine, 177*(9), 1028–1033.

Bongar, B., & Sullivan, G. (2013). *The suicidal patient: Clinical and legal standards of care*. Washington, D.C.: American Psychological Association.

Braswell, H., & Kushner, H. I. (2012). Suicide, social integration, and masculinity in the U.S. military. *Social Science and Medicine, 74*(4), 530–536.

Brooks, T. A. (2005). Ethnic identification level and mental health in a military environment. *Dissertation Abstracts International Section A, 67*(1-A), 103.

Bruce, M. L. (2010). Suicide risk and prevention in veteran populations Bruce Suicide in veteran populations. *Annals of the New York Academy of Sciences, 1208*(1), 98–103.

Cardona, R. A., & Ritchie, E. C. (2007). U.S. Military enlisted accession mental health screening: History and current practice. *Military Medicine, 172*(1), 31–35.

Chu, J. P., Goldblum, P., Floyd, R., & Bongar, B. (2010). A cultural theory and model of suicide. *Applied and Preventive Psychology, 14*(1–4), 25–40.

Comprehensive Soldier and Family Fitness. (2010). *Army health promotion risk reduction report 2010.* Retrieved from http://csf.2.army.mil/downloads/HP-RR-SPReport2010.pdf.

Cornum, R., Matthews, M. D., & Seligman, M. P. (2011). Comprehensive soldier fitness: Building resilience in a challenging institutional context. *American Psychologist, 66*(1), 4–9.

Department of Defense. (2013a) *2013 Demographics profile of the military community.* Retrieved from http://www.militaryonesource.com.

Department of Defense. (2013b). *Mental health evaluations of members of the military services (DoD Instruction 6490.04)*. Washington, DC: Author.

Department of Navy suicide data. (2016). Retrieved from http://www.public.navy.mil/bupersnpc/support/21st_Century_Sailor/suicide_prevention/Pages/Statistics.aspx.

Department of the Air Force. (2014). *Suicide prevention program (AFI90-505)*. Washington, DC: Author.

Department of the Army. (2012). *Army suicide prevention program: Annual guidance on suicide prevention training (ALARACT 079-12)*. Washington, DC: Author.

Department of the Army. (2014). *Comprehensive soldier and family fitness (Army Regulation 350-53)*. Washington, DC: Author.

Department of the Army. (2015). *Army health promotion (Army Regulation 600-63)*. Washington, DC: Author.

Department of the Navy. (2009). *Suicide prevention program (OPNAV Instruction 1720.4A)*. Washington, DC: Author.

Department of the Navy. (2012). *Marine corps suicide prevention program (MCO 1720.2)*. Washington, DC: Author.

Department of the Navy. (2015). *Operational stress control program (OPNAV Instruction 6520.1)*. Washington, DC: Author.

DeViva, J. C., Sheerin, C. M., Southwick, S. M., Roy, A. M., Pietrzak, R. H., & Harpaz-Rotem, I. (2016). Correlates of VA mental health treatment utilization among OEF/OIF/OND veterans: Resilience, stigma, social support, personality, and beliefs about treatment. *Psychological Trauma: Theory, Research, Practice, and Policy, 8*(3), 310–318.

Franklin, K. (2015). *Department of Defense quarterly suicide report calendar 2015 2nd quarter*. Retrieved from Defense Suicide Prevention Office website: http://www.dspo.mil/Portals/113/Documents/DoD%20Quarterly%20Suicide%20Report%20CY2015%20Q2.pdf.

Give an hour: General information. (n.d.). Retrieved from https://www.giveanhour.org/AboutUs.aspx.

Greden, J. F., Valenstein, M., Spinner, J., Blow, A., Gorman, L. A., Dalack, G. W., … Kees, M. (2010). Buddy-to-Buddy, a citizen soldier peer support program to counteract stigma, PTSD, depression, and suicide Greden et al. Buddy-to-Buddy for citizen soldiers support. *Annals of The New York Academy of Sciences*, *1208*(1), 90–97.

Hall, B., & Gabor, P. (2004). Peer Suicide Prevention in a Prison. *Crisis: The Journal of Crisis Intervention and Suicide Prevention, 25*(1), 19–26.

Hsu, J., & Ketchen, B. R. (2013). Working with veterans, social class, and counseling: Understanding the veteran population and implications for treatment. In W. Ming Liu (Ed.), *The Oxford handbook of social class in counseling* (pp. 164–184). New York, NY: Oxford University Press.

Jones, E., Hyams, K. C., & Wessely, S. (2003). Screening for vulnerability to psychological disorders in the military: An historical survey. *Journal of Medical Screening, 10*(1), 40–46.

Kang, H. K., Bullman, T. A., Smolenski, D. J., Skopp, N. A., Gahm, G. A., & Reger, M. A. (2015). Suicide risk among 1.3 million veterans who were on active duty during the Iraq and Afghanistan wars. *Annals of Epidemiology, 25*(2), 96–100.

Kaplan, M. S., McFarland, B. H., Huguet, N., & Valenstein, M. (2012). Suicide risk and precipitating circumstances among young, middle-aged, and older male veterans. *American Journal of Public Health, 102*(S1), 131–137.

Kemp, J. & Bossarte, R. (2012a). *Suicide data report 2012*. Retrieved from Department of Veterans Affairs Mental Health Services Suicide Prevention Program website: http://www.va.gov/opa/docs/suicide-data-report-2012-final.pdf.

Kemp, J., & Bossarte, R. M. (2012b). Surveillance of suicide and suicide attempts among veterans: Addressing a national imperative. *American Journal of Public Health, 102*(Suppl 1), e4–e5.

Lafleur, A. K., & White, B. J. (2010). Appreciating mentorship: the benefits of being a mentor. *Professional Case Management, 15*(6), 305–311.

Lambert, M. T., & Fowler, D. R. (1997). Suicide risk factors among veterans: Risk management in the changing culture of the Department of Veterans Affairs. *Journal of Mental Health Administration, 24*(3), 350–358.

Lester, P. B., McBride, S., & Cornum, R. L. (2013). Comprehensive soldier fitness: Underscoring the facts, dismantling the fiction. In R. R. Sinclair, T. W. Britt, R. R. Sinclair, & T. W. Britt (Eds.), *Building psychological resilience in military personnel: Theory and practice* (pp. 193–220). Washington, DC: American Psychological Association.

McCarthy, J. F., Blow, F. C., Ignacio, R. V., Ilgen, M. A., Austin, K. L., & Valenstein, M. (2012). Suicide among patients in the veterans affairs health system: Rural-urban differences in rates, risks, and methods. *American Journal of Public Health, 102*(S1), S111–S117.

Military One Source: Confidential Help. (2016). Retrieved from http://www.militaryonesource.mil/confidential-help/specialty-consultation?content_id=286144.

Milliken, C. S., Auchterlonie, J. L., & Hoge, C. W. (2007). Longitudinal assessment of mental health problems among active and reserve component soldiers returning from the Iraq war. *JAMA, 298*(18), 2141–2148.

National Center for Telehealth & Technology, Defense Centers of Excellence for Psychological Health & Traumatic Brain Injury. (2016). *DoDSER Department of Defense suicide event report calendar year 2014 annual report.* Retrieved from http://www.dspo.mil/Portals/113/Documents/CY%202014%20DoDSER%20Annual%20Report%20-%20Final.pdf.

Nock, M. K., Deming, C. A., Fullerton, C. S., Gilman, S. E., Goldenberg, M., Kessler, R. C., … Ursano, R. J. (2013). Suicide among soldiers: A review of psychosocial risk and protective factors. *Psychiatry, 76*(2), 97–125.

Peterson, C., Park, N., & Castro, C. A. (2011). Assessment for the U.S. Army Comprehensive Soldier Fitness program: The Global Assessment Tool. *American Psychologist, 66*(1), 10–18.

Pietrzak, R. H., Goldstein, M. B., Malley, J. C., Rivers, A. J., Johnson, D. C., & Southwick, S. M. (2010). Risk and protective factors associated with suicidal ideation in veterans of operations Enduring Freedom and Iraqi Freedom. *Journal of Affective Disorders, 123*(1–3), 102–107.

Ragins, B. R., & Scandura, T. A. (1999). Burden or blessing? Expected costs and benefits of being a mentor. *Journal of Organizational Behavior, 20*(4), 493–509.

Rynders, T., Sokolowski, J., & Williams, T. (2013). *Suicide prevention in the army National Guard: Modeling effective strategies.* Retrieved from U.S. Army War College website: www.dtic.mil/cgi-bin/GetTRDoc?AD=ADA592978.

Segall, D.O. (2004). Development and evaluation of the 1997 ASVAB score scale *(Technical report no. 2004–002).* Seaside, CA: Defense Manpower Data Center.

Seligman, M. P., & Fowler, R. D. (2011). Comprehensive Soldier Fitness and the future of psychology. *American Psychologist, 66*(1), 82–86.

Sherman, M. D. (2003). The SAFE program: A family psychoeducational curriculum developed in a Veterans Affairs medical center. *Professional Psychology: Research and Practice, 34*(1), 42–48.

Sherman, M. D. (2008). Support and family education: Mental health facts for families. Retrieved May 22, 2016, from http://www.ouhsc.edu/safeprogram/.

Stanley, B., & Brown, G. K. (2008). The safety plan treatment manual to reduce suicide risk: Veteran version. Washington, DC: United States Department of Veterans Affairs. Retrieved from http://www.mentalhealth.va.gov/docs/va_safety_planning_manual.pdf.

Substance Abuse and Mental Health Services Administration (DHHS/PHS), R. S. (DHHS/PHS), Rockville, MD. Center for Mental Health Services. (2001). *Mental Health: Culture, race, and ethnicity. A Supplement to "Mental Health: A Report of the Surgeon General."*. Retrieved from http://www.ncbi.nlm.nih.gov/books/NBK44243/.

Sudak, H., Maxim, K., & Carpenter, M. (2008). Suicide and stigma: A review of the literature and personal reflections. *Academic Psychiatry, 32*(2), 136–142.

Team Rubicon (2014). *2014 Annual Report.* Retrieved from Team Rubicon website: http://www.teamrubiconusa.org/wp-content/uploads/2016/03/2014_Annual_Report_24p_Mar2016.pdf.

The Mission Continues. (2016). *What we do.* Retrieved from The Mission Continues website: https://www.missioncontinues.org/.

Torres, J. (2015). Just what the doctor ordered. Philanthropy, *87,* 38–44.

U.S. Defense Manpower Data Center. (2015). *Active Duty Military Strength by Service*. *DoD Personnel, Workforce Reports & Publications*. Retrieved from https://www.dmdc.osd.mil/appj/dwp/dwp_reports.jsp.

U.S. Department of Veterans Affairs. (2011). Profile of veterans: 2009 Data from the American Community Survey Retrieved from National Center for Veterans Analysis and Statistics http://www.va.gov/vetdata/docs/specialreports/profile_of_veterans_2009_final.pdf.

U.S. Department of Veterans Affairs. (2014). *Veteran population projection model 2014*. Retrieved from the VA http://www.va.gov/vetdata/docs/Demographics/New_Vetpop_Model/VetPop2014_ExSum_093014_Final.pdf.

Veterans Crisis Line. (n.d.). Retrieved from https://www.veteranscrisisline.net/.

Vets 4 warriors: Unique features. (2015). Retrieved from http://www.vets4warriors.com/unique-features/index.html.

Wood, J. (2011, December) *Jake Wood: A new mission for veterans—disaster relief* [Video file]. Retrieved from http://www.ted.com/talks/jake_wood_a_new_mission_for_veterans_disaster_relief.

Wounded Warrior Project (2015). *2015 wounded warrior project survey: Report of findings.* Retrieved from Wounded Warrior Project https://www.woundedwarriorproject.org/media/2118/2015_wwp_alumni_survey_full_report.pdf.

Wyman, P. A., Brown, C. H., LoMurray, M., Schmeelk-Cone, K., Petrova, M., Yu, Q., … Wang, W. (2010). An outcome evaluation of the Sources of Strength suicide prevention program delivered by adolescent peer leaders in high schools. *American Journal of Public Health*, *100* (9), 1653–1661.