Mental Health and Illness Worldwide

Series Editors:

Norman Sartorius · Ee Heok Kua

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Prabha S. Chandra · Helen Herrman

Jane Fisher · Anita Riecher-Rössler

Editors

Mental Health and Illness of Women

Springer

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Most books on mental health and illness are published for readers in North America and Europe, and not much is known about psychiatric practice, services and research in Asia, Africa, and South America. This series will include contributions of clinicians and researchers worldwide. Each volume will cover broad issues including epidemiology, cross-cultural comparison, clinical research, stigma of mental illness, cultural issues in mental healthcare, health economics, innovative services, preventive programs and health service outcome research. The volumes will find a wide readership among psychiatrists, psychologists, sociologists, health policy makers, social workers, health economists, anthropologists and philosophers. It will provide the readers a broader perspective of mental health and illness worldwide and also future research initiatives.

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Prabha S. Chandra • Helen Herrman
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Editors

Mental Health and Illness of Women

With 16 Figures and 24 Tables

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ISSN 2511-8323 ISSN 2511-8315 (electronic)
ISBN 978-981-10-2367-5 ISBN 978-981-10-2369-9 (eBook)
ISBN 978-981-10-2368-2 (print and electronic bundle)
https://doi.org/10.1007/978-981-10-2369-9

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The registered company address is: 152 Beach Road, #21-01/04 Gateway East, Singapore 189721, Singapore

Series Preface

Psychiatry lives exciting and challenging times. Advances of knowledge stemming from basic sciences and epidemiological and clinical research have provided a better understanding of the etiopathogenesis, psychopathology, and natural history of mental disorders. Improved methods of treatment have changed clinical practice and prolonged the life of people with mental illness. Economic consideration and the emphasis on human rights of people with mental illness made a profound impact on the way in which psychiatry is to be practiced.

Regrettably, however, psychiatry is not practiced in the same manner around the world. Undergraduate and postgraduate education in psychiatry varies in content and duration from country to country. Psychiatrists use different doses of medication for the same disorders. The systems of care for people with mental illnesses differ in the organization and content of their interventions. Support to scientific investigations of matters related to psychiatry fluctuates and in many countries amounts to very little.

Information about the function of psychiatric services varies in quantity and quality. The series of seven books on Mental Health and Illness Worldwide aims to help in reducing these differences and facilitate international collaboration in psychiatry. We have invited top experts from different countries to edit the volumes, and they have in turn selected authors from different parts of the world. We have also decided to approach the body of psychiatry from a public health and epidemiological perspective rather than have books dealing with different groups of diseases. The series includes books examining and presenting knowledge assembled according to social and public health variables – gender, urbanity, migratory status, age, and education. Each of the volumes has adopted a wide perspective and included chapters based on knowledge stemming from epidemiology, on results of the investigation of cultural issues, on the best of psychopathology, on the results of the investigation of biological factors, mental health care and its innovations, health economics, and experience gained in preventive programs. The volume editors have agreed to aim at producing volumes marked by the balance of information and knowledge from basic social and behavioral sciences and from clinical practice.

The seven volumes of this opus are:

1. Mental Health and Illness of the Elderly
   Editors: Helen Chiu (Hong Kong) and Ken Shulman (Canada)

2. Mental Health and Illness in the City
   Editors (Denmark): Povl Munk-Jorgensen, Niels Okkels, and Christina Kristiansen
3. Mental Health and Illness of Women
   Editors: Prabha S. Chandra (India), Helen Herrman (Australia), Jane Fisher (Australia), and Anita Riecher-Rössler (Switzerland)
4. Mental Health and Illness in the Rural World
   Editor: S. Chaturvedi (India)
5. Mental Health, Mental Illness and Migration
   Editors: Driss Moussaoui (Africa), Dinesh Bhugra (United Kingdom), and Antonio Ventriglio (Italy)
6. Mental Health and Illness of Children and Adolescents
   Editors: Eric Taylor (United Kingdom), John Wong (Singapore), Frank Verhulst (Netherlands), and Keiko Yoshida (Japan)
7. Education About Mental Health and Illness
   Editors: Marc H.M. Hermans (Belgium), Tan Chay Hoon (Singapore), and Edmond Pi (USA)

We were delighted to see that the volume editors have succeeded in recruiting outstandingly knowledgeable authors for the chapters of their books. Most of them have received worldwide recognition for their contributions in their fields of specialization, and all of them have written their texts with authority and excellent judgment concerning the materials to be included.

We believe that these series of books demonstrate the importance and value of interdisciplinary and international collaboration and that it will provide readers a global perspective of mental health and mental illness. We also hope that it will help to make our discipline more homogenous and bring its practitioners worldwide closer together in the pursuit of helping people with mental illness worldwide.

We wish to express our gratitude to Professor Prabha S. Chandra, Professor Helen Herrman, Professor Jane Fisher and Professor Anita Riecher-Rössler, the editors of this volume dealing with Mental Health and Illness of Women for their commitment and dedication which resulted in this excellent work.

January 2020

Norman Sartorius
Ee Heok Kua

Volume Preface

How do we produce a book that moves us away from traditional formats and helps us address contemporary and timeless issues in women's mental health? The concern with any book is that literature and research often date rapidly. The challenge for editors is to choose topics that are important in current discourse and practice and yet retain their relevance over time.

This book was conceptualized very aptly during an international conference on women's mental health over cups of Japanese green tea in Tokyo. We deliberately chose to go beyond the comfort zone and format of basing the chapters on different types of psychiatric disorders and decided instead to focus on social determinants on mental health and mental ill health. This led us to choose topics aligned with the Sustainable Development Goals and dealing with areas seldom discussed in classic books on women's mental health. We believe that the "personal is political" and most chapters in the book reflect the same.

The Sustainable Development Goals seek to change the course of the twenty-first century. They address key challenges related to gender such as poverty, inequality, and violence against women. The chapters in our book address one or the other of these three issues in some form.

The book has six parts: Old Problems, New Manifestations; Structural Factors and Circumstances of Daily Life; Reproductive Life; Mental Health and Physical Health; Violence; and a final part on Topical Issues in women's mental health.

It has a total of 22 chapters written by research scholars and experienced practitioners. While the chapters discuss global issues, the authors also highlight local situations and advances or legislation related to women's mental health. This gives the book a global flavor with intriguing and instructive local stories and examples.

The first part addresses three topics: women as caregivers for elderly people, suicide and suicidal behavior among women, and mental health issues among refugees and asylum seekers. With an aging population worldwide, the burden of caring often falls on women, and Amanullah and colleagues address this topic including data from indigenous communities in Canada. Lakshmi Vijayakumar and Lamech address the often ignored topic of suicide which is often considered a "male" problem. They provide emerging data about countries where women are more at risk for suicide, discuss the important topic of maternal deaths, and highlight the social determinants of suicidality among women. Schouler-Ocak focuses on an area that affects all of us and has not yet found its voice in the popular discourse of mental health, which is that of the mental health of refugees and asylum seekers.

The second part, “Structural Factors and Circumstances of Daily Life,” considers several carefully chosen questions. How does mental health interface with women’s political and economic participation? Schulze and Amering reiterate the UN Women slogan of Leave No One Behind (especially girls and women) in health policies and decision making. They highlight the importance of advocacy and the relevance of preparing for it.

The role of culture in women’s mental health is appropriately written by Kuruvilla and Jacob. South Asia and the Middle East are some regions of the world where the Gender Equity indices are among the lowest and cultural factors have a huge influence on the manifestation of mental health problems as well as accessibility to care and treatment. Angothu and colleagues discuss the meaning of recovery in women and the challenges for rehabilitation for women with mental illness. Citing an example of the role of legislation they discuss mental healthcare acts and how they can be used for better care for women with mental illnesses. Niaz and Tariq discuss the mental health of women living in conflict zones and affected by conflict. They emphasize the lack of interventions that are women focused and the need for a human rights approach to the problem.

The third part of the book has three chapters on the interface of physical and mental health. Roy and Riba discuss psycho oncology in women and the role of mental health professionals in a scenario where globally more women are now treated early, are survivors, and face challenges. They also discuss the relevant topics of palliative care and the ethics of care.

The World Health Organization has emphasized the great influence of physical health, particularly that of noncommunicable diseases (NCDs) on the quality of life of persons with mental illness. Mary Seeman discusses the relationship of physical illness and mental health and provides recommendation for holistic care. In their chapter on anxiety, depression, and medical comorbidity, Jagtap and colleagues describe the unique challenges in the assessment and management of these conditions.

Conventionally, reproductive health is given priority in any book on women’s mental health. In this part, we have chosen to focus on more practical and less discussed topics. Fisher and Hammarberg in their chapter discuss the challenges related to infertility and assisted reproduction, an area which needs much more research. Riecher-Rössler’s chapter focuses on the current evidence and research related to mental health issues in menopause. Ngyuen and Desai address the spectrum of perinatal health care in women with mental illness and discuss the need for collaborative and comprehensive care for this vulnerable population.

Fourth-wave feminism speaks strongly about the topic of privilege and how traditionally dominant social groups of women and men should acknowledge their societal privilege and use it to empower and advocate for members of marginalized groups. Women with mental illness are among the most marginalized, and the focus of our book is in keeping with this movement.

There has also been emphasis on hashtag feminism and the gathering concerns regarding sexual harassment. Keeping this in mind, a part in the book focuses on gender-based violence, including the infrequently addressed topics of sexual violence by Oberoi and Satyanarayana and violence during the perinatal period by Fisher and colleagues. A chapter by Yapp and colleagues on interventions for intimate partner violence provides much needed information on the evidence in the field and ideas for future trials on this important and globally relevant topic. Finally, we address the topic of women offenders, an area that hardly finds its place in academic discourse in women's mental health. Klier and Fernandez-Arias focus on the available research and provide insights into work done in Latin America. They note that this is a poorly researched field, especially in the global south.

The final part includes topical issues in the field. Julian and Muzik describe mother–infant dyadic interventions especially for mothers facing the impact of trauma. This chapter provides a framework for these important interventions that shape future generations and are relevant globally. Bhola and Devi discuss personality disorders in women in light of changes in diagnostic nomenclature and approaches, especially with the new DSM 5 and ICD 11, the emergence of trans-diagnostic frameworks, as well as the overlapping constructs of complex PTSD and borderline personality disorders.

Parameshwaran and Chandra critically evaluate both DSM 5 and ICD 11 with a gender lens and discuss what these new systems may mean for the practice of women's mental health. The chapter by Thibaut discusses recent advances and guidelines related to women and addiction. The final chapter in this part is in keeping with the Sex and Gender Equity in Research (SAGER) guidelines which advocate a comprehensive procedure for reporting of sex and gender information in research. Brain stimulation techniques have emerged as the new treatment modality for several psychiatric disorders. In their chapter on the topic, Sreeraj and Subramaniam discuss the differential effect of gender on the effect of brain stimulation techniques and suggestions for future research.

The field of women's mental health is growing, with a strong push toward more social, clinical, and biological research, together with advocacy for the routine provision of gender-sensitive care. We anticipate the field will grow even more in the coming years. We hope that this book will support advocacy and action for the promotion of mental health in women and girls and the prevention and treatment of mental illnesses. We trust the book has a timeless appeal and has something for everyone who is interested in women's mental health.

January 2020

Prabha S. Chandra
Helen Herrman
Jane Fisher
Anita Riecher-Rössler

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About the Series Editors

Professor Norman Sartorius, M.D., M.A., D.P.M., Ph.D., FRC. Psych, obtained his M.D. in Zagreb (Croatia). He specialized in neurology and psychiatry and subsequently obtained a Master's Degree and a Doctorate in Psychology (Ph.D.). He carried out clinical work and research and taught at graduate and postgraduate levels at the University of Zagreb, at the Institute of Psychiatry in London, at the University of Geneva, and elsewhere. Professor Sartorius joined the World Health Organization (WHO) in 1967 and soon assumed charge of the program of epidemiology and social psychiatry. In 1977, Professor Sartorius was appointed Director of the Division of Mental Health of WHO. He was the Principal Investigator of several major international studies on schizophrenia, depression, and of mental and neurological disorders. In 1993, Professor Sartorius was elected President of the World Psychiatric Association (WPA) and served as President-elect and then President until August 1999, after which he was elected President of the European Psychiatric Association. Professor Sartorius is currently the President of the Association for the Improvement of Mental Health Programmes, and he is a member of the Geneva Prize Foundation, having been its President from 2004 to 2008. Professor Sartorius holds professorial appointments at universities in different countries including China, UK, and USA.

Professor Sartorius has published more than 400 articles in scientific journals, authored or coauthored 12 books, and edited more than 80 others. He is the coeditor of three scientific journals and is a member of editorial and advisory boards of many scientific journals. Professor Sartorius is also a corresponding member and fellow of a large number of international organizations and advisory boards. He has several honorary doctorates and is a member of academies of science and of medicine in different countries. He speaks Croatian, English, French, German, Russian, and Spanish.

Dr. Ee Heok Kua is the Tan Geok Yin Professor of Psychiatry and Neuroscience at the National University of Singapore (NUS) and Senior Consultant Psychiatrist at the National University Hospital, Singapore.

He was trained as a doctor at the University of Malaya and received postgraduate training in psychiatry at Oxford University and geriatric psychiatry at Harvard University.

A member of the World Health Organization team for the global study of dementia, he is the previous Head of the Department of Psychological Medicine and Vice Dean, Faculty of Medicine, at NUS, and the Chief Executive Officer and Medical Director at the Institute of Mental Health, Singapore.

His research interest includes depression, dementia, and alcoholism, and he has written 23 books on psychiatry, aging, and addiction. A novel he wrote, *Listening to Letter from America*, is used in a module on anthropology at Harvard University.

The former President of the Pacific-Rim College of Psychiatrists and President of the Gerontological Society of Singapore, he was Editor of the *Singapore Medical Journal* and *Asia-Pacific Psychiatry* journal.

About the Editors

Dr. Prabha S. Chandra is Professor of Psychiatry at the National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru, India. She is in charge of the perinatal psychiatry service which is the first of its kind in South Asia. She also heads the NIMHANS Centre for Well Being which is an urban community center for mental health focusing on youth and women. She is the President Elect of the International Association for Womens' Mental Health and an Executive Member of the International Marcé Society for Perinatal Mental Health. Her research interests include perinatal and reproductive psychiatry, gender-based violence, training in gender-sensitive medicine, bioethics, psycho-oncology, and palliative care.

Helen Herrman is Professor of Psychiatry at Orygen, National Centre of Excellence in Youth Mental Health, and the Centre for Youth Mental Health at the University of Melbourne, Australia.

She is President of the World Psychiatric Association (WPA) 2017–2020 and Director of the World Health Organization (WHO) Collaborating Centre in Mental Health, Melbourne.

She has received the award of Officer of the Order of Australia, and the honorary degree of Doctor of Medical Science from the University of Melbourne. She is a Practitioner Fellow of the Australian National Health and Medical Research Council and a Member of the *Lancet* Commission on Global Mental Health and Sustainable Development. She chairs a new *Lancet*-WPA Commission on depression.

In the past, as Professor and Director of Psychiatry in St.Vincent's Health Melbourne, she led the development of an integrated area mental health service under Australia's national reform of mental health care. For one year she acted as regional adviser in mental health for the WHO's Western Pacific Region, based in Manila. Her research and practice interests include community mental health care and promoting mental health. She has past and present research programs in the mental health of marginalized groups, including homeless people, prisoners, and young women and men living in out-of-home care, and leadership of the WPA's action plan 2017–2020 concerned with supporting the contribution of psychiatrists to global mental health.

Jane Fisher, an academic Clinical and Health Psychologist, is Finkel Professor of Global Public Health and Professor of Women's Health in the School of Public Health and Preventive Medicine at Monash University, Melbourne, Australia. She is Immediate Past President (2018–2020) of the International Marcé Society for Perinatal Mental Health. Jane has long-standing interests in gender-based risks for women's reproductive health and mental health and of how these can be addressed in psychologically informed clinical practices and health promotion strategies. She has been Consultant Clinical Psychologist to Masada Private Hospital's Early Parenting Centre since 1996. She has been a technical adviser to the World Health Organization in the fields of maternal mental health and early childhood development since 2005.

Anita Riecher-Rössler is Professor of Psychiatry at the University of Basel, Switzerland. She has specialized in psychiatry, psychotherapy, and psychoanalysis, as well as in consultation and liaison psychiatry and in gerontopsychiatry. In 1998, she was the first woman to be appointed to a Full Chair for psychiatry in a German-speaking country. Her research interests include schizophrenic psychoses, gender differences in mental disorders, and mental disorders in women. In the field of schizophrenic psychoses, she has mainly worked on the onset and early detection of these disorders but also on late-onset schizophrenia. In the field of women's mental health, she is particularly interested in psychoneuroendocrine and psychosocial risk factors such as violence against women and also in mental disorders during the peripartum or the menopausal transition. Her approach is a bio-psycho-social one, that is, she always seeks to consider all these aspects in the pathogenesis as well as in the therapy of mental illness. She was a Founding Member/President of interdisciplinary societies for women's mental health such as the International Association for Women's Mental Health (IAWMH) and the Interdisciplinary Society for Women's Mental Health and Gender Issues (GPGF) and Chair of the Women's Mental Health Section of the European Psychiatric Association (EPA). She is Editor-in-Chief of the *Archives of Women Mental Health*. In 2018 she was awarded the Constance Pascal-Helen Boyle Prize by the European Psychiatric Association for outstanding achievements by a woman in working to improve mental health care in Europe. She edited 32 books and 100 book chapters and published over 450 original articles (h-index 62).

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Part I

Old Problems, New Manifestations

Women as Caregivers in the Elderly

1

Shabbir Amanullah, Ahila Vithianathan, Natasha Snelgrove,
Suhaila Ghuloum, and K. S. Shivakumar

Contents

Abstract

The value of the caregiver to the elderly with a rapidly aging population is unequivocal. Caregivers are able to reduce the cost of health care for this aging generation and provide "personalized care." It is important to identify caregiver

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_1

needs that address both their positive and negative psychosocial outcomes, including personal neglect, and both perceived and actual stress. Women are often juggling multiple roles and this chapter addresses how caregiving, although rewarding, can significantly affect a female caregiver's own health and finances. This chapter explores the experiences of immigrants and indigenous peoples and reviews present interventions for coping with caregiver burnout.

Keywords
Caregiver · Stress · Burnout · Cultural factors · Women · Burden of care

Introduction

Caregiving can be, and often is, a rewarding experience for many, but it can also be a stressful experience in a woman's life. While women were traditionally seen as caretakers and gatherers in hunter and gatherer societies, they now find themselves employed full time while still facing the same cultural expectations. This includes caring for multiple family members (Dahlberg 1981). Women can sometimes find themselves caring for their parents and children at the same time, the so-called sandwich generation (Pierret 2006). Data shows that up to 80% of all care for the elderly, in particular, is provided by family, with the vast majority of this being provided by middle-aged daughters and wives (Godfrey and Warshaw 2009). Many of the studies available do not focus exclusively on the elderly but rather address caregiving and women per se, with the bulk of individuals being cared for assumed to be older or those with intellectual or other disabilities and chronic illnesses. A 1987 study (Stone 1987) showed that informal caregivers were predominantly women and above 65 years of age. While the age range has changed, the gender role has not.

Psychosocial Health Outcomes of Caregiving

Despite the enormous satisfaction that can sometimes come from caregiving, there can also be many negative health outcomes from a psychosocial perspective that need to be accounted for and can often overshadow the positive experience. Caregiving can lead to stress and anxiety about providing support for multiple individuals. Some of the consequences or "side effects" women may experience include fatigue, sleep disturbances, stress, anxiety, and depression when providing care to others (Godfrey and Warshaw 2009). One study found that eight out of ten individuals reported that caring for others worsened their own feelings of depression (Evercare and National Alliance for Caregiving 2006).

A study in Sweden studied the concept of "compulsive sensitivity" through cross-sectional analysis. This study investigated how women feel the need to respond to others' needs despite their own individual circumstances (Forrsen et al. 2005). It is because of this concept that the authors felt that women are unable to relinquish themselves from caring for others whom they felt were dependent upon them (Forrsen et al. 2005). Women were happier to care for others when they found intrinsic value in their work and were appreciated (Forrsen et al. 2005). In terms of caring for their husbands, women expressed that they wanted to take care of their husbands but simultaneously felt a sense of responsibility to be “good wives” (Forrsen et al. 2005).

In a study of American women, it was also found that women who were caregivers experienced more emotional distress and physical problems (Pavalko and Woodbury 2000). Those that provided long-term care tended to be black women with low income and education (Pavalko and Woodbury 2000). Interestingly, the authors did not find that long-term caregivers had accumulating health problems, but they did have adverse psychological outcomes (Pavalko and Woodbury 2000).

In a study of 148 African-American caregivers, role strain was measured with the Global Role Strain Scale in which questions ranged around responsibilities and how this was perceived by caregivers in terms of stress and feelings of control (Williams et al. 2003a). The average age of caregivers was 56 years old with an average of 8.7 years of care to recipients that were on average 74 years old (Williams et al. 2003a). Contrary to other articles, marriage, children, or employment had no effect on role strain. Instead, living with the care recipient ($p = 0.006$) and those who had higher limitations in activities of daily living (ADL) ($p = <0.0001$) correlated with role strain (Williams et al. 2003a). Interestingly, higher levels of cognitive impairment were associated with lower levels of role strain ($p = 0.01$) (Williams et al. 2003a). Those who were more educated also experienced more strain as a caregiver ($p = 0.04$), but overall caregivers reported moderately good health with low level of depressive symptoms (Williams et al. 2003a). African-American women in this study seemed to have lower levels of role strain compared to their Caucasian counterparts, which the authors attributed to different life circumstances and resources (Williams et al. 2003a).

Women and Caregiving: Neglecting One’s Own Health

As women take on the role of caregivers, some tend to neglect their own health when taking care of others. This can lead to acquiring various health conditions that are often not adequately treated. Barrett (2012), in his work, noted that the majority of caregivers were women with an average age of 49 years old, with half being over the age of 75. These caregivers report feeling a high level of being burdened, with a third reporting poor physical health during the care of others (Barrett 2012). Unfortunately, providing care to others sometimes meant women neglecting their own health in order to make sure the recipients weren’t left alone and uncared for. Due to their commitment as caregivers, women in the study skipped their own doctor’s appointments, often felt fatigued, and were depressed, and a minority even quit their own jobs (Barrett 2012). It can be especially stressful when the care recipient lives with the caregiver. Godfrey and Warshaw (2009) noted the trend of older women caring for their elderly parents at home, despite the consequences to their own selves. Unfortunately, this means that caregivers are providing support to their family members and elderly care recipients while also dealing with their own chronic health conditions (Godfrey and Warshaw 2009).

The trend for negative impacts of care on health of caregivers transcends continents. A South Korean study found that caregiving regrettably leads to increased demands for healthcare and prescription drugs for pain control, as women caregivers can find themselves lifting and carrying their parents (Do et al. 2015). This leads to amplified healthcare costs among caregivers which has a direct impact on the healthcare system that may counter any possible savings to formal healthcare costs of taking care of the elderly (Do et al. 2015).

Women and Caregiving: The Financial and Economic Consequences

Caring for families and aging parents is a global fact that straddles all cultures, religions, geographic regions, and languages. Sadly, most societies are still focused on gender roles in terms of allocation of women to taking care of their families in what defines femininity without acknowledging the burden that caregivers have to bear (Forrsen et al. 2005). Dimond (1995) also noted the impact of caregiving on the working woman, "that women have transitioned from homemakers and housewives to managing dual responsibilities by also participating in the workforce." This easily underscores the multiple roles that have been placed purely on gender stereotypes. As caregiving requirements increase, women have had to make modifications to their schedules and take leave from work to take care of their family members (Dimond 1995). This is a demanding time for women caregivers who in today's world tend to have fewer siblings to assist with the caregiving role that has been thrust upon them (Dimond 1995). There is also the financial strain that comes with caregiving, as individuals can end up paying for a variety of items such as medications and household items. Individuals can find themselves paying for prescriptions, ramps, or other modifications to the property brought about by needs to adapt the house for safety reasons or building codes or supplies to take care of their family (Family Caregiver Alliance 2003). Unfortunately, single women (this is increasingly common) who do not have a dual income are left with the sole responsibility of both providing finances and care to their children and parents.

In terms of employment, it appears that employment provides a protective effect against healthcare declines especially during the early part of caregiving (Pavalko and Woodbury 2000). One of the areas that may be playing a part here is the possible inadvertent psychological support they may receive at work from others in the same situation. Authors found that those caring for their spouses were less likely to cease employment compared to those caring for their parents (Pavalko and Woodbury 2000). Perhaps, this is due to women having extra financial support with their partner, allowing them more flexibility in work when taking care of a parent, compared to taking care of a spouse when her income may be the only source of income for the family.

A group of Canadian authors observed the variable of income as a determinant of stress. It was found that those with lower incomes spent more time (5–9 h a day) on care that was hands-on including dressing, helping with the bathroom, and feeding compared to those who made more than $25,000 (Williams et al. 2003b). Twenty-one percent of responders rated their health as poor, and those with less income were more likely to report feeling more isolated and helpless (Williams et al. 2003b). In terms of methods of coping, low-income caregivers were more likely to use unhealthy coping mechanisms such as caffeine ($p = 0.005$) and prescription medications ($p = 0.037$) to cope (Williams et al. 2003b). In contrast, those with higher incomes used socializing ($p = 0.037$) and exercise ($p = 0.085$) as methods of coping (Williams et al. 2003b). Both groups suffered from decreased leisure time (low income 94.7% and higher income 56%), with the lower income groups feeling the greatest need for outside resources (Williams et al. 2003b). With the low-income group, many barriers to seeking outside care emerged such as limitations in transportation which was expressed by 21% of responders ($p = 0.077$) (Williams et al. 2003b). This particular aspect is very important for city planners or planners per say. Access to easy transport that is disabilities friendly may be crucial in cutting down burn out and illness in caregivers but also costs to the system over all.

Positive outcomes	Negative outcomes
Feelings of respect from the individual being cared for towards the caregiver Feeling of satisfaction as a result of being a caregiver Intrinsic value in being a caregiver (Forrsen et al. 2005) Some caregivers caring for non-family members can find themselves befriending their care recipients and accepting them as family (Cuesta-Benjumea et al. 2011)	Complexity of caregiving when combined with other roles such as wife and mother- Complicated role of being a caregiver: caregivers are in a position of managing medical treatment as well as serving multiple other roles such as an interpreter, cook, or chauffeur (Liu and McDaniel 2015) Symptoms of fatigue, stress, sleep disturbance, depression, and anxiety felt by the caregiver (Godfrey and Warshaw 2009) Worsening symptoms of depression (Evercare and National Alliance for Caregiving 2006) Women neglecting their own health to fulfill their roles as caregivers (Barrett 2012) Women quitting their jobs to take on the responsibility of caregiving (Barrett 2012) Increased use of prescription drugs among women caregivers (Do et al. 2015) Financial strain of paying for services that a family member may need that is culturally appropriate (Han et al. 2008)

(*continued*)

Positive outcomes	Negative outcomes
	Overseas caregivers feel the most stressed when dealing with behavioral and physical needs of their parents and feeling that it is their responsibility to care for them (Iftekhar and Ingman 2014) Loss of free time in the caregiver (Mendez-Luck and Anthony 2015) Caregivers feeling a sense of social isolation, loss of autonomy, feelings of being under-supported (Heidenreich et al. 2014)

Cross-Cultural Strain of Caregiving

The Immigrant Perspective

Care, responsibilities, and duty to care for elderly parents can vary between cultures and across continents. Do et al. (2015) noted that in South Korea, sometimes family members who were less healthy took on the caregiving role instead of working outside the home. The authors reflect on how, in traditional Korean culture, men are the heads of the family and wives are expected to serve as caregivers both for their own parents and their in-laws. However, a shift in gender equality has resulted in more daughters taking care of their own parents (Do et al. 2015). The authors found that daughters and daughters-in-law were the primary caregivers and that functional limitations of the elderly did not correlate with the daughter-in-law's health (Do et al. 2015). Competing interests arise when a woman must care for multiple family members. The authors conclude that factors such as her birth order, husband's birth order, and proximity to the recipients of care all play a role (Do et al. 2015). This is important for us as clinicians, as it is important to ask questions about cultural aspects to ensure we have looked for potential abuse situations and also to address burnout. However, providing culturally sensitive and inclusive care will require much more work. Han et al. (2008) also conducted a study on 24 Korean-American caregivers in focus group interviews. The authors also expressed that certain ethnic groups, such as Koreans, place higher value on reciprocity and caring for family members (Han et al. 2008). There were obstacles found in accessing care in terms of language barriers, different social support networks, and caregivers struggling to find jobs to pay for their parents' care (Han et al. 2008). Other stressors include not knowing how to provide medically relevant care and that barriers to nursing care include lack of culturally appropriate care and lack of ethnic food in nursing homes (Han et al. 2008). For the caregivers, it was hard to adjust to a new country while still having to cope with pressures in the Korean community and providing care to their parents that is expected of them by their culture (Han et al. 2008). This finding, however, is unlikely to be unique to Koreans and may be found in many South Asian communities as the values seem to be a shared one with respect to caregiving. Traditionally it is the wife of the eldest son left with the responsibility of caregiving, which has been disrupted by women in the workforce (Han et al. 2008). Korean families tend to not seek out professional care such as with nursing homes and long-term living facilities. One daughter made a poignant statement about how despite having systems and facilities in place these avenues are not able to provide love to the elderly (Han et al. 2008). However, the elderly have a hard time coping with the lack of their independence, and some prefer living in nursing homes (Han et al. 2008). One elderly recipient mentioned that she would prefer to be in a nursing home so that she would not be home alone and wanted to be able to live more independently (Han et al. 2008). Despite these examples, however, it seems for the most part that in many non-Western countries and in those families that have recently immigrated informal caregiving is preferred as opposed to formal services like nursing homes.

New and different stressors can also arise from caring for elderly parents from across continents as seen in one study on Bangladeshi families. Iftekhar and Ingman (2014) took data from 21 Bangladeshi immigrant men and women living in the United States who were caring for their parents living in Bangladesh. The authors use Pearlin's (1990) stress process model to understand the stress caregivers experience, which showed that the highest amount of stress is from the behavioral problems and physical needs of the recipients (Iftekhar and Ingman 2014). This is a very important finding and should help direct care for caregivers when they are in need. Interviews were conducted through semi-structured questionnaires which demonstrated that caregivers felt indebted to their parents and felt that it was their responsibility to care for them (Iftekhar and Ingman 2014). Care was provided in many ways, whether hiring maids to care for their parents, setting up services, reminding parents to take their medications as prescribed, and encouraging them to eat properly (Iftekhar and Ingman 2014). A general theme among caregivers was guilt from moving away from their parents and fear that something would happen to their parents and they would not be able to travel to Bangladesh in time (Iftekhar and Ingman 2014). Fortunately, with the rapid advancement in technology, many avenues to reduce the feeling of distance have become available in the last decade. Emotional care can to a degree be provided over Skype, Facebook, and cheaper international calls (Iftekhar and Ingman 2014). Caregivers did not express role overload, but perhaps this is because the care is not hands-on, and stress was found to arise from arranging care and maintaining good communication with other family members where the parents lived (Iftekhar and Ingman 2014).

Cuesta-Benjumea et al. (2011) studied 17 immigrant women caregivers from Latin America who had emigrated to provide care to dependent people for more than 5 h a day. It is increasingly common for women emigrants to become caregivers to strangers to earn income (Cuesta-Benjumea et al. 2011). Many of these women had their own families at home and found themselves caring for strangers. Many coping mechanisms were employed by these women including speaking to their families on the phone, befriending their care recipients or relaxing in their own rooms, accepting them as family, etc. (Cuesta-Benjumea et al. 2011). "Turning to one's own world" was an important way of coping, an escape, and when all methods failed, they would return home. The authors believe that stress reduction could be made through providing relevant education to these caregivers, so they know how to manage caregiving in a foreign country. However, this still does not address the issue of family separation, poor living conditions, and the risks of being exploited.

Another study investigated the caregiver role between 44 US-born Mexicans and immigrant Mexicans with a mean age of 52.6 years old through interviews. The participants lived in Southern California (Mendez-Luck and Anthony 2015) and viewed caregiving as a choice and a responsibility rather than an obligation (Mendez-Luck and Anthony 2015). This is important aspect from the psychological point of view. There were stressors that were identified including loss of personal time, financial struggles, and their own physical space (Mendez-Luck and Anthony 2015). In an interesting comparison in the study, US-born Mexicans had higher incomes and were more educated and expressed stressors that surrounded giving up their own lives compared to immigrants who focused more on the loss of sleep, exhaustion, and not having a "will to do anything" (Mendez-Luck and Anthony 2015). The stress of immigration and financial difficulties are likely to create a cascade of issues that will only get more complicated with time, if not addressed earlier.

In a study of Chinese immigrants living in Australia, semi-structured interviews were conducted to assess for the stressors of caring for the elderly in a foreign country (Heidenreich et al. 2014). Negative impacts of caregiving included social isolation, loss of autonomy, feeling under-supported, and a sense of duty (Heidenreich et al. 2014). Other stressors included the emotional toil of dealing with the emotions of care recipients as they receive diagnoses of terminal illnesses that had to be translated to them (Heidenreich et al. 2014). In a separate study by Liu and McDaniel (2015), the authors investigated the toll of caring for Chinese parents with heart disease and stroke. Eighty percent of caregivers were women with 75% being married and were on average 60 years old (Liu and McDaniel 2015). Caregivers have invested time in encouraging exercise, creating healthy meal options, and ensuring levels such as cholesterol and blood sugar were being normalized or well managed under their care (Liu and McDaniel 2015). There is a concept of "filial piety" which is a part of Chinese culture and involves children helping their parents with their needs both physically and financially (Zhan 2004). Caregivers had to juggle multiple roles including being a cook, chauffeur, interpreter, and medical treatment manager (Liu and McDaniel 2015). One can argue that, in such environments, individuals may also be expected to do chores that the employer is unable to and hence further increasing the caregiver's responsibilities.

Caregivers in this group also expressed lack of facilities for ethnic minorities. It is also important to be aware that care recipients might not want to socialize with others even if placed in a group with similar individuals facing similar problems (Liu and McDaniel 2015). Caregivers had multiple sources of stress, including feelings of discrimination from lack of language fluency with health professionals, feelings of neglecting their own health, issues with insufficient home care hours, lack of family doctors and psychiatrists who speak the same language, no time to deal with their own problems, and social isolation (Liu and McDaniel 2015). Another stressor was that many rehabilitation programs had to be paid for out of pocket and alternative therapies like herbal medicine and acupuncture were not affordable (Liu and

McDaniel 2015). Caregivers described their role as exhausting and constraining and wished for appropriate long-term care options, day programs, and more help in the home (Liu and McDaniel 2015).

van Wezel et al. (2016) in a study conducted in the Netherlands studied 41 immigrants from Turkey, Morocco, and Surinamese Creole who provided care to those with dementia. Individualized and group interviews revealed that all groups believed that family care is more important than their profession and that it was a job for women which had been imposed upon them through culture and religion (van Wezel et al. 2016). All groups viewed residential care in a negative light. Turkish and Moroccan families placed value on recognition of care provided both by recipients and the broader community (van Wezel et al. 2016).

The Experience of Indigenous Women: A Canadian Perspective

Experiences of caregiving can be even more complex for Canadian Indigenous women, many of whom face experiences of physical isolation in remote communities (Crosato et al. 2007), social barriers to providing care at home (Habjan et al. 2012), and experiences of caregiving for both the young and the elderly in a post-residential school context (Kershaw and Harkey 2011).

Crosato et al. (2007) describe that geographically isolated Indigenous female caregivers understand their caregiving experiencing as situated within four concentric circles: the healers, the family, the Indigenous community, and the non-Indigenous community. Within these circles of perceived care, they explored five major values that contribute to experiences and provision of caregiving: "passing on traditions, being chosen to care, supporting the circle of healers, (re)establishing the circles of care, and accepting/refusing external resources."

Furthermore, Crosato et al. (2007) describe that (much like the experiences of women in other cultures described earlier on in this chapter) Indigenous women feel that the caregiving role falls on them based on expected, historical cultural traditions, with family lending support. However, unlike other cultural groups, most perceive that their unique care barriers are more a result of their unique position as Indigenous peoples and not related to the caregiving role itself (Crosato et al. 2007). They described a more integrated relationship with their families and community and a less integrated relationship with external caregiving supports and services that they can "open and close the door" to (p. 4). The internal community supports were touted as being highly important to the experience and perceived support of caring.

Interestingly, Indigenous women perceive their role of being chosen to care because "Aboriginal women were defined as being strong, and the ones who kept families and communities united" (Crosato et al. 2007, p. 5). The study notes, however, that this does not lessen the burden and responsibility that many women feel to fulfill that role. Although, culturally, many women noted that they felt their caring role was the one value that was still maintained from the past, before the time of colonialism and residential schools, and therefore deemed it culturally highly important. This is certainly important when devising or planning interventions as using inherent strengths only fortifies the healthcare system rather than weaken it. It requires that systems work with indigenous communities to develop effective care plans.

The non-Indigenous circle of caregivers was described as either welcomed or not welcomed in this study on the basis of whether they provided respect to the community in supporting caring, and if so, would be welcomed to assist if needed (Crosato et al. 2007).

A study by Habjan et al. (2012) further solidified these experiences, noting that in most Indigenous people (69%), both families and elderly themselves indicated a desire to allow their elders to age and die at home. However, major barriers identified included lack of family caregivers, shortage of providers and programs, and lack of culturally sensitive care. This was compounded by a feeling of disempowerment in the Indigenous communities, in that these gaps in care and policy existed, and they describe experiences of feeling marginalized and not listened to in governmental policy decisions related to elder care, leaving their communities isolated and having to fend for themselves, increasing familial and community strain (Habjan et al. 2012).

Hammond et al. (2017) further expand on the issues faced by those with cancer and their caregivers in an Indigenous setting. Informal community support is further highlighted as key; however the healthcare system writ large was perceived as having gaps in supporting the unique needs of Indigenous peoples. Again, themes of culturally safe care, addressing the impacts of colonialism on caring and on illness and addressing the highly disproportionate amount of cancer found in Indigenous populations, were highlighted as key ways to improve experiences of cancer care (Hammond et al. 2017). Furthermore, the historical and current impacts of residential schools on how women share their experiences were highlighted by most women in this study, noting that it was an expectation to keep secrets and keep silent. It was described that it should be encouraged in non-Indigenous healthcare facilities to address these experiences of trauma and secrecy in providing adequate support in caregiving and illness to Indigenous people.

Dementia care has also been explored in the literature (Jacklin et al. 2015), and this study confirms that females are the most frequent caregivers for elderly with this illness as well. The article comments that caring at home is often preferred for as long as caregivers are able, but due to changing cultures, community and family helping has decreased, placing a larger burden of care on the caregiver, and impacting the family's ability in general to provide care (Jacklin et al. 2015). It is further noted that residential school experiences and intergenerational trauma can further interfere with family desires to provide safe, competent care to an elder with dementia at home.

Furthermore, the burden of dementia may be up to 34% higher in Indigenous communities (Jacklin et al. 2015). Further challenges include lack of knowledge about dementia and its progression, local lack of culturally appropriate services to supplement informal home caregiving, and difficulties in communication particularly if the cared for elder speaks an Indigenous language as their primary language (Jacklin et al. 2015). However, the article also notes many Indigenous women can also experience feelings of love and gratitude in caregiving and often can form a closer relationship with parents, particularly if rebuilding their relationship after separation induced by previous residential school experiences (Jacklin et al. 2015). An article by Jacklin et al. (2015) highlights the large range of excellent care provided by Indigenous women and families to their elders and reinforces the need for care systems that are culturally appropriate to support the informal caregiving systems, including home care and respite care.

In summary, women carers are common in Indigenous Canadian communities and identify many challenges caring for their elderly and sick others in their communities. Major facilitators include the community and family itself, with major barriers including discrimination, social determinants of health, lack of culturally safe care, and the impacts of residential schools. Care should be taken by providers to be culturally sensitive, inquisitive, respectful, and understanding of the substantial colonial history affecting Indigenous carers when our system provides support. Language and cultural issues should be addressed by our care systems.

Interestingly, family and community are identified as major sources of support and as such, efforts should be made to ensure this support is in place for Indigenous female carers. Finally, in line with the Truth and Reconciliation Commission's recommendations, Indigenous people should be intimately involved in the co-creation of appropriate solutions with the healthcare community to support them in caregiving in their social, physical, and cultural contexts. This chapter only begins to touch on those experiences and recommendations in supporting the Indigenous female carer.

Caregivers and Abuse

Caring for the elderly can be a positive and negative experience. Dr. Chez, a physician who specializes in elder abuse, found through his research that symptoms of frustration and sadness can result from taking care of sick family members, as a result of spending an average of 19 h a week providing care, for on average 4.6 years (Chez 2012). Abusers tended to be "unofficial" caregivers, such as children and/or spouses who account for nearly three quarters of abusers (Chez 2012). Why does abuse occur? Nadien (2006) noted that the relationship between the caregiver and recipient determine if abuse will occur. Protective factors against abuse include caregivers without mental health conditions, those who feel they are capable of dealing with stress and those who are supported rather financially or socially (Nadien 2006). Abuse can present in many forms that include physical abuse such as assault, psychological threats of abandonment, and financial deprivation (Nadien 2006). The most common form of abuse is neglect followed by physical abuse (Albert and Cattell 1994). Wolf (1996) noted that physicians should be aware of the potential of abuse and inspect for bruises, burns, fractures, and overmedication leading to disorientation. Other signs that an elderly person is being abused include untreated sores, dehydration, lack of clean clothing items, and nonspecific complaints (Wolf 1996). Nadien (2006) noted that abuse is a result of those who are more dependent on others for activities of daily living and that women caregivers tend to be more verbally abusive while men are more physically abusive. However, we cannot only focus on the abuser as a perpetrator as there are factors that can lead a caregiver to easily lose their temper and feel frustrated. One must also take into account the likelihood that the elderly individual can be demanding, suffering from clinical depression, unappreciative, or even abusive themselves (Nadien 2006). One approach to dealing with these situations is to educate caregivers about rethinking how they handle their outward expressions of frustration (Nadien 2006).

Sometimes the caregivers themselves have been abused prior to taking on the caregiving role. It is important to consider the personal histories of women who are in the role of caregiving to determine how this may impact how they feel about this role. Factors such as abuse in the past can affect how a woman handles caregiving on an emotional level. A study conducted in Australia studied 8453 women to determine how many and who had a history of intimate partner violence (IPV) and how this affected their mental and physical health as caregivers compared to those without such history (Ferreira et al. 2017). Mental and physical health were measured using a subscale from the Short Form 36 (measured anxiety, depression, and emotional aspects), while depression was measured using the Centre for Epidemiological Studies Depression Scale (Ferreira et al. 2017). The authors found that in those women who had a history of intimate partner violence, as a caregiver, they were more likely to have higher scores on depression (OR 2.08) and stress (OR 2.11) compared to their counterparts (Ferreira et al. 2017). However, when reinforced by social support and optimism regarding their situation, these results were reduced by 9–21% (Ferreira et al. 2017). These are important factors to consider, as physicians need to know what to screen for in our patients to properly assess and provide the necessary resources to avoid adverse health outcomes.

Women and Caregiving: Possible Interventions

As highlighted a few times earlier, despite the burden that caregiving can pose on women caregivers, caregiving can also be seen in positive light, by providing feelings of satisfaction and respect in the caregiver. However, it is critical for this to be the case that caregiving be adequately supported, both culturally, by family and by healthcare providers.

One study looked at cognitive behavioral therapy (CBT) as an intervention for Spanish- and Chinese-speaking caregivers in Australia (Leone et al. 2013). The sessions covered how to care for people with dementia, understanding behavioral changes and changing outlooks on illness (Leone et al. 2013). The sessions also focused on how to approach relaxation, whether through breathing exercises or other techniques (Leone et al. 2013). Pre- and post-intervention, the authors used the Depression Anxiety, and Stress Scale-Short Form which assessed depression, anxiety, and stress (Leone et al. 2013). Improvements were seen in all aspects of this scale after intervention, apart from the Chinese-speaking group having no difference in the stress subscale (Leone et al. 2013). This study shows how there are potential solutions to relieving some of the stress of caregiving.

Interventions to prevent burnout and caregiver strain
Cognitive-based therapy (CBT) for caregivers
Requesting support from family members and siblings in sharing the workload (Godfrey and Warshaw 2009)
Physicians providing preprinted resources, providing information regarding support groups, and providing access to existing resources available in the community (Godfrey and Warshaw 2009)
Options for increased vacations and/or sick leave in providing support to caregivers (Pavalko and Woodbury 2000)
Facilities targeted toward ethnic minorities that provide culturally competent care (Liu and McDaniel 2015)
Support toward alternative therapies that are affordable (e.g., acupuncture, herbal medicine) (Liu and McDaniel 2015)
More long-term care options
Formal caregiving options from home and the ability to connect with a nurse over the phone
Relevant education to caregivers, especially when caregiving is in a foreign country (Cuesta-Bunjumea et al. 2011)

Godfrey and Warshaw (2009) note that steps can be taken to identify those in need of help. The authors suggest women asking other family members and siblings for help even for a brief relief of workload. The authors also suggest individuals to seek out community programs and support networks that are in place. Physicians should provide options to patients regarding social workers who can help in the community and preprinted resources (Godfrey and Warshaw 2009). Although nursing homes can provide adequate care, many families do not prefer this to be part of care (Godfrey and Warshaw 2009). Therefore, care needs to be provided that is both culturally appropriate and accessible, both to support informal caregiving as well as to support women if the transition to formal caregiving is necessary. There should be resources such as information and counseling on caring for loved ones and support groups in place for an individual to best cope with these demands, which have increased being able to provide caregiving for longer with deceased stress levels (Family Caregiver Alliance 2003). Some authors have suggested vacations and options for sick leave in providing support to caregivers (Pavalko and Woodbury 2000). Home-based options need to be made more prevalent especially services such as nursing, information by phone, and video instructions.

Conclusion

In the twenty-first century with increasing longevity, caregiving will in the coming years pose significant challenges to both healthcare and social services. The economic burden will be enormous, and it is unlikely that any nation's healthcare system will be in a position to bear the costs independently. In essence, recognizing the enormous role women play and developing a mechanism by which they are recognized and compensated may be a way forward. The informal role played by women helps reduce the burden on healthcare systems worldwide, but this needs to be quantified.

More research is required, and focussed studies are needed to understand the growing area and also address the complexity of caregiving and the adequacy of input for recipients.

A trend that will or may become attractive will be "outsourcing" care and even placements for those with dementia by taking advantage of the differences in currency strengths with the likelihood that people may leave their home country to access such care.

It is critical that social and legislative discourse begins to reflect the substantial service that women provide informally. Supports and recognition should also be put in place, both formal and informal. As healthcare providers, we need to be sensitive to the ongoing cultural context to maximize benefit to patients and their caregivers while reducing risk. Furthermore, as women continue to work full time and provide care to others, understanding and supporting a cultural shift to a caregiving model where women are not solely relied on other family members, including male family members, and where culturally appropriate formal supports are put in place should be aspired to.

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Refugees and Asylum Seekers

2

M. Schouler-Ocak

Contents

Abstract

According to the UNHCR, in the year 2018, more than 68.5 million people live in external or internal situation of displacement. The reasons are different and complex, including political, logistic, economic, and social factors. Women and girls make up around 50% of any refugee, internally displaced, or stateless people. It is highly likely that the stress factors before, during, and after migration will contribute to the development of psychiatric disorders in vulnerable individuals. In some cases, the onset of illness may occur soon after migration, whereas in other cases, mental health problems may develop over time as one result of the impact of social factors and changes related to the host society. Additionally, post-migration factors have a high impact on the development of psychiatric disorders. Therefore, healthcare services should prepare themselves to serve this group of refugee, asylum seeker, and ethnic minority patients in a better way. Furthermore, in all these issues, gender-specific factors also have to be taken into consideration. Individual, psychological resources, social support, a successful acculturation

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_2

processes, cultural variations, and time since relocation are statistically significant protective factors against the development of common mental disorders among refugees, asylum seekers, and ethnic minorities.

Keywords
Refugees and asylum seekers · Mental health · Gender · Social support · Cultural competence

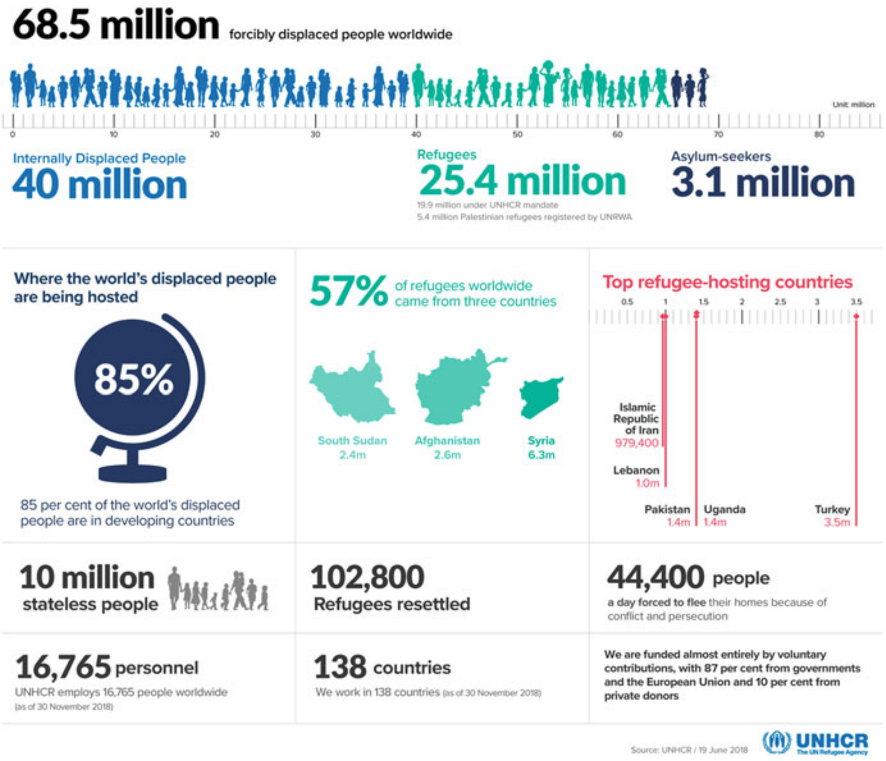
Introduction

"People who move across borders in search of protection, but who may not fulfil the strict criteria laid down by the 1951 UN Convention. Asylum seeker describes someone who has applied for protection as a refugee and is awaiting the determination of his or her status. Refugee is the term used to describe a person who has already been granted protection. Asylum seekers can become refugees if the local immigration or refugee authority deems them as fitting the international UN definition of refugee" (UNESCO 2019).

According to the UNCHR (2015), "refugees include individuals recognised under the 1951 Convention relating to the Status of Refugees; its 1967 Protocol; the 1969 OAU Convention Governing the Specific Aspects of Refugee Problems in Africa; those recognised in accordance with the UNHCR Statutes; individuals granted complementary forms of protection; or those enjoying temporary protection. The refugees' population also includes people in a refugee – like situation" (UNHCR 2015, p. 56). Additionally, according to the UNCHR, "asylum seekers are individuals who have sought international protection and whose claims for refugee status have not yet been determined, irrespective of when they may have been lodged" (47, p. 56). An asylum seeker has to demonstrate that his or her fear of persecution in his or her home country is well-founded. When people flee their own country and seek sanctuary in another country, they apply for asylum – the right to be recognized as a refugee and receive legal protection and material assistance. A refugee has a well-founded fear of persecution for reasons of race, religion, nationality, political opinion, or membership in a particular social group. Most likely, they cannot return home or are afraid to do so. War and ethnic, tribal, and religious violence are leading causes of refugees fleeing their countries (UNHCR 2019a).

Statistical Data

The UNHCR reported that 2018 more than 68.5 million people around the world have been forced from home as forcibly displaced people (UNHCR 2018). Eighty-five percent of them were being hosted in developing countries, and only 15% were able to be hosted in developed countries, e.g., in Europe and North America. According to UNHCR (2018), among forcibly displaced people around 25.4 million were refugees, over half of whom were under the age of 18 years. Only 3.1 million were asylum seekers. Fifty-seven percent of the refugees worldwide were from three countries: South Sudan 2.4 million, Afghanistan 2.4 million, and Syria 6.3 million. Top refugee-hosting countries were Turkey, Uganda, Pakistan, Lebanon, and Islamic Republic of Iran. Around 40 million of the forcibly displaced people worldwide were internally displaced. Additionally, the UNHCR reported that 10 million stateless people were estimated who have been denied a nationality and access to basic rights such as education, healthcare, employment, and freedom of movement. Furthermore, it was pointed out that nearly one person was forcibly displaced every 2 s as a result of conflict or persecution worldwide. Summing up, 1 in every 110 people globally is either an asylum seeker, internally displaced, or a refugee (UNHCR 2018).



Additionally, according to UNHCR, women and girls make up around 50% of any refugee, internally displaced, or stateless population, and those who are unaccompanied, pregnant, head of households, disabled, or elderly are especially vulnerable. Furthermore, according to UNHCR, in some societies, women and girls face discrimination and violence every day, simply because of their gender (UNHCR 2019b).

Mental Health of Refugees and Asylum Seekers

Immigration is politically controversial, and the need for continued immigration to Europe is still poorly recognized. Nevertheless, immigrants make up a growing share of European populations (Rechel et al. 2013). Bhugra et al. (2014) emphasized that refugees and asylum seekers constitute one of the groups at the highest risk of developing mental disorders and are among the most vulnerable groups in society. From a public mental health perspective, epidemiological evidence showed that exposure to extreme stressors, including major losses and potentially traumatic events such as torture and war exposure, are disproportionately experienced by refugees and asylum seekers before and during displacement (Bogic et al. 2012), Priebe et al. (2016). In addition, post-displacement traumatic events (Miller et al. 2006), perceived stigma, and discrimination as well as resettlement stress are important impacts for mental health (Miller and Rasmussen 2010). In various publications, it was emphasized that refugees and asylum seekers have been shown to experience higher prevalence rates of a range of disorders, including common mental disorders (e.g., depression, anxiety, somatoform disorders), severe mental disorders (e.g., psychosis), substance use disorders, and disorders specifically tied to stress, in comparison with the general population (Nosè et al. 2017; Fazel et al. 2005; Bogic et al. 2015, Winkler et al. 2018). Interestingly, the best-studied mental health outcome in refugees remains post-traumatic stress disorder (PTSD), despite the range of mental disorders of relevance to conflict-affected populations. According to several authors, PTSD is ten times more likely in refugees and asylum seekers compared to host populations (Fazel et al. 2005; Bogic et al. 2015). In a systematic review, Fazel et al. (2005) found that refugees who resettle in certain Western countries are around ten times more likely to have post-traumatic stress disorder than age-matched general populations in the same countries (USA, Australia, Canada, Italy, New Zealand, Norway, and UK). According to the authors, tens of thousands of refugees and former refugees who have resettled in Western countries are likely to have post-traumatic stress disorder worldwide (Fazel et al. 2005). A study in Switzerland aimed to describe, compare, and predict mental health outcomes among different migrant groups and native residents (Heeren et al. 2014). The authors found a high psychiatric morbidity in the group of asylum seekers, refugees, and illegal migrants. Significant percentages of asylum seekers (54.0%) and refugees (41.4%) fulfilled criteria of PTSD. The results showed clinically relevant symptoms of anxiety and depression by asylum seekers (84.6% and 63.1%, respectively) and illegal migrants (both 47.6%) (Heeren et al. 2014).

Pre-migration, during the migration, and after the migration, they have frequently been subjected to physical, sexual, and/or psychological violence and traumatic bereavement due to war, social or political instability, or socioeconomic, familial, or administrative conflicts. Therefore, the proportion of traumatized people with a serious mental disorder is very high, and the healthcare systems of the receiving countries are not prepared for this specific group of traumatized immigrants (Bhugra et al. 2014; Schouler-Ocak et al. 2019). The published rates of post-traumatic disorders are often high, lying between at anything from 3% to 86% among refugees and asylum seekers who have experienced physical and sexual violence, torture, loss of family members, and persecution (Bhugra et al. 2014). The very large range is partly due to differences in methodology and study populations. Lindert et al. (2009) reported that the rates of common mental disorders (CMD) are twice as high in refugee populations in comparison with economic migrants (40% vs. 21%).

Laban et al. (2004) pointed out that the risk of PTSD and CMD in asylum groups increases with the length of time the person is in a waiting position after their application for asylum. Furthermore, Porter and Haslam (2005) reported in a meta-analysis that refugees had worse outcome if they were older, better educated, and female and had a higher socioeconomic status and rural residence prior to displacement. Laban et al. (2008) documented unemployment, absence of family support, and complicated asylum processes as other risk factors. As compared with the general population, refugees have been shown to experience considerably higher levels of psychological distress and higher levels of social distress in different domains (i.e., demographic, economic, neighborhood, environmental events, and social and cultural domains) (Lund et al. 2018). These findings are not consistent across studies (Turrini et al. 2017). In comparison with the general population, psychosis has also been shown to be more frequent in people exposed to trauma and displacement (Close et al. 2016; Dapunt et al. 2017). According to Bourque et al. (2011), data from studies on risk for psychosis showed that stress factors in the post-migratory stage over all have more impact on mental health than those in the pre-migratory stage. Giacco et al. (2018) pointed out that exposure to traumatic events before or during migration may explain high rates of PTSD. Additionally, the authors underlined that, in the first years of resettlement, only post-traumatic stress disorder (PTSD) rates are clearly higher in refugees than in host countries' populations. Five years after resettlement rates of depressive and anxiety disorders are also increased. In this line, Mladovsky et al. (2012) pointed out that a lack of familiarity with rights, entitlements, gaps in health literacy, social exclusion, and direct and indirect discrimination are risk factors for bad mental health outcomes of immigrants.

Social Support, Social Conflict, and Mental Health Service Use

Guruge et al. (2015) reported that the literature is limited about the role of social conflict and reciprocity within informal social networks, which play an important role in shaping the access and use of mental health services among refugee, asylum seeker, and ethnic minority patients. It has been also underlined that refugees, asylum seekers, and ethnic minorities are more likely to underutilize the sources of social support. The main reasons are unawareness of these services or inability to access them (Bhugra et al. 2014), transportation problems or mobility issues (Stewart et al. 2011), and a lack of culturally safe (Lai and Surood 2010) as well as linguistically appropriate services (Schouler-Ocak et al. 2015). Furthermore, staff may be faced with significant language difficulties, negative stereotypes, and expectations of treatment that cannot be fulfilled. Additionally, stigma, which plays an important role, is associated with seeking help, particularly for mental health issues (Küey 2015). In this context, intercultural and institutional barriers – as described under cultural competence below in more detail – should be underlined (Schouler-Ocak et al. 2015). Moreover, De Jong and van Ommeren (2005) used the term "interculturalization" and defined it as the adaptation of mental health services to suit patients from different cultures. Therefore, they developed a model to promote and assess interculturalization of mental healthcare services in Western multicultural societies. According to them, changes are necessary in four contexts:

1. The relationships between the refugee, asylum seeker and ethnic minority patients, and the healthcare workers and the treatment team
2. The organizational adaptations required in the treatment context of the mental health care facility
3. The relationships between the mental health facility and the ethnic communities
4. The relationships between the mental healthcare system, other facilities, and society at large (De Jong and van Ommeren 2005)

This model can help to negotiate the barriers mentioned above and increase the usage of the healthcare services.

Access of Mental Healthcare

Refugee and asylum seeker patients often have difficulties in the new host society. As Kluge et al. (2012) reported, immigrants and refugees, especially those who are newly settled, often have poor knowledge about how the healthcare system works, what help they can obtain, or how to communicate their suffering and need for help in an understandable way. The aim of the study of Winkler et al. (2018) was to assess asylum seekers' views on their legal situations, asylum procedures and living conditions, and the relationship of these factors toward psychological stress. The authors found that according to psychological test criteria, 74.6% of the respondents indicated symptoms of mental disorders. Significant correlations between insecure residency status and these symptoms were not found. Interestingly, the respondents with higher symptom load took less advantage of support, participated less in measures designed to assist integration, and described more difficulties in their hearing. Additionally, the authors pointed out that only 11.6% of the asylum seekers with mental illness indicating symptoms were under psychiatric treatment. Thus, Winkler et al. (2018) found a big gap between the proportion with high symptom burden and the proportion of treatment required.

Therefore, Schouler-Ocak et al. (2015) recommended that it is necessary for all mental health professionals to be sensitive to cultural and contextual aspects of communication. Therein, cultural sensitivity and culturally competent services are some of the key concepts in mental healthcare services for refugee, asylum seeker, and ethnic minority patient (Schouler-Ocak et al. 2015).

Fenta et al. (2007) reported that in cases of psychiatric illness, the first consultation that takes place is often more of a general medical consultation rather than a consultation with trained psychiatric/psychological professionals. Only in case of emergency will the costs be covered by health insurances. This difficulty in accessing healthcare often contributes to the further exacerbation of existing mental disorders (Laban et al. 2004). Access to the healthcare system significantly impeded by language and cultural communication problems. Qualified language and cultural mediators are not widely available. Moreover, they not regularly asked to attend (Kluge et al. 2012). This can lead to misunderstandings, misdiagnosis, and incorrect treatment, with serious consequences for the afflicted. Language barrier represents one of the main barriers to access to the healthcare system for people who do not speak the local language; indeed, language is the main working tool of psychiatry and psychotherapy, without which successful communication is impossible (Schouler-Ocak 2015).

According to Rechel et al. (2012), there is less data about mental health services for refugees and asylum seekers, which makes it difficult to monitor and improve their health. The authors underlined that one of the most fundamental barriers for refugees and asylum seekers in accessing health services is inadequate legal entitlement. Pace (2011) pointed out that where entitlement exists, mechanisms for ensuring them were well-known and respected in practice. Karl-Trummer (2010) reported that the problems are greatest for asylum seekers and undocumented migrants. By 2009, only 11 European countries had established national policies to improve migrant health that go beyond migrants' statutory or legal entitlement to care (Mladovsky et al. 2012). In this context, evidence suggests that poor social integration and difficulties in accessing care contribute to higher rates of mental disorders in the long-term (Giacco et al. 2018).

According to Priebe et al. (2016), challenges for the Member States of the WHO European Region are to facilitate the social integration of refugees, asylum seekers, and irregular migrants within the host countries and to adopt good practices that improve access to and outcomes of mental healthcare. The authors underlined also that strategies for implementing policies to achieve this include providing resources for social integration programs, outreach services, appropriate information, and staff training; promoting organizational flexibility to provide the best possible coordination between services; routine data collection on service use and outcomes of this use; and the formal evaluation of implemented initiatives (Priebe et al. 2016).

Mental Health of Female Refugees and Asylum Seekers

According to UNHCR (2019b), in some societies, women and girls face discrimination and violence every day, simply because of their gender. An ordinary task like collecting water or going to the toilet can put them at risk of rape or abuse.

Therefore, while fleeing and living as a refugee can be traumatic events for everyone, gender differences can significantly affect the experience. Women and men as well as girls and boys embody different roles within their societies of origin and assigned different roles. Women are more frequently less educated than men in their countries of origin and more frequently tend to family and care duties rather than working outside of the home (Breslau 2002). According to Freedman (2016), women are also more vulnerable to all forms of violence in their home countries and during flight leading to physical abuse and psychological traumatization. Stempel et al. (2016) reported that the gendered expectations toward their roles might be questioned once they reach their country of destination, where gender roles could strikingly differ leading to conflict and self-questioning.

The Female Refugee Study was the largest study to date documenting the specific situation of refugee women arriving in Germany during the years 2015–2016 (Jesuthasan et al. 2018), in which they reported a multitude of reasons for flight and experienced traumas in their home countries and during the journey. The reasons for fleeing were mostly war, terror, and fear for one's life or the life of family members, demonstrating a high degree of stressors and a perceived unavoidability of migration in many cases (Jesuthasan et al. 2018). In this study, about 25% of the women reported personally witnessing unnatural death or killing of a family member or close friend. Gender-specific reasons for fleeing primarily are expressed by women from Afghanistan and Somalia, who most frequently mentioned fear of forced marriage and honor killings (Jesuthasan et al. 2018). Furthermore, women of all countries of origin expressed fear of sexual violence as reason for fleeing, yet fear of genital mutilation was mentioned by 10% of the women from Somalia, which was surprisingly low in comparison with the widely spread practice of female genital mutilation (FGM) in the region (Mitike and Deressa 2009). The study did not address whether FGM is a taboo topic or not considered a relevant reason for fleeing due to either social acceptance or resignation (Johnson-Agbakwu et al. 2014). According to the Jesuthasan et al. (2018), 12% of the women reported sexual contacts as minors. The authors pointed out that this might reflect a high incidence of child marriages but could also include experiences of sexual coercion. In fact, having had sexual contacts as a minor negatively correlated with self-satisfaction in the sample. According to Kessler et al. (1995), there is a negative impact of non-consensual sexual actions, especially in minors, on self-respect and self-image as described before. This could be at the root of the observations of Jesuthasan et al. (2018). Prevalence of PTSD is elevated among women and the previously married. The traumas most commonly associated with PTSD are combat exposure and witnessing among men and rape and sexual molestation among women (Kessler et al. 1995).

Additionally, according to Jesuthasan et al. (2018), refugee women experience multiple traumatic experiences before and/or during their journey, some of which are gender-specific. These experiences affect the quality of life in their current country of residence and have an impact on the integration process. Early investigations would be able to identify rapidly women at higher risk and to improve healthcare for somatic and mental illness.

The most important aspects are summarized in the following tables:

Cultural Competence

Working with refugee, asylum seeker, and ethnic minority patients requires cultural competence of the mental health staff, so that mental health workers should be familiar with the patient's cultural context as well as their own cultural values and prejudices (Bhugra et al. 2011). Thus, cultural competence should be a main issue in the daily work of mental health workers (Bhugra et al. 2014; Schouler-Ocak et al. 2015), because cultural competence is one of the concepts used with the ambition of grasping the need of knowledge, skills, and efforts to work with culture and context

Table 1 Gender-specific risk factors for psychosocial distress among women refugees and asylum seekers

Discrimination and violence every day, simply because of their gender and risk of rape or abuse	UNHCR 2019b
Women are more frequently less educated; women more frequently tend to family and care duties	Breslau 2002
Gender roles could strikingly differ leading to conflict and self-questioning	Stempel et al. 2016
High degree of stressors and a perceived unavoidability of migration	Jesuthasan et al. 2018
Fear of forced marriage and honor killings	
Child marriages	
Sexual coercion	
Refugee women experience multiple traumatic experiences before and/or during their journey, some of which are gender-specific	
Fear of sexual violence	Mitike and Deressa 2009
Fear of genital mutilation	
Sexual contacts as minors, negatively correlated with self-satisfaction	Jesuthasan et al. 2018; Kessler et al. 1995
Non-consensual sexual actions, especially in minors, negative impact on self-respect and self-image	
Violation of human rights and in some cases a crime against humanity	UNHCR 2003
Sexual violence	
Emotional-psychological violence	
Physical violence	
Harmful cultural practices and socioeconomic violence	
Sexual- and gender-based violence may have significant consequences on sexual, reproductive, physical, and psychological health	Hynes and Lopes 2000; Tavara 2006

Table 2 Women who are at risk

Women, especially the impoverished and those living in shelters, in remote areas, or in detention centers	Wenzel et al. 2004
Adolescent girls, particularly if they live alone or with only one parent and are of low socioeconomic status	Tavara 2006
Displaced and refugee communities	Hynes and Lopes 2000; UNHCR 2003; Ward and Vann 2002
People with heightened risk perception and people who were personally victimized or witnessed sexual- and gender-based violence during childhood are prone to subsequent victimization or perpetration of SGBV themselves	Browm et al. 2005
Refugees, homeless, or impoverished people and young men are often victimized by strangers, persons in authority, and those assigned to their protection	Hynes and Lopes 2000

Table 3 Aspects of gender- and culture-sensitive interventions for women refugees and asylum seekers

Specific health promotion and violence prevention interventions are urgently needed to correct the unequal health conditions in refugee and asylum seeker population	Keygnaert et al. 2012
At an individual level, behavioral change, sensitization to sexual- and gender-based violence and its risk and protective factors, and the enhancement of objective and subjective social status are of major importance	
At the interpersonal level, it is paramount to empower our research population to build social networks that improve social capital and enhance the exchange of transferable knowledge and skills through social learning, the creation of social support, and community resilience	
At the organizational level, it is crucial that healthcare and other services are made accessible to everyone, regardless of residence status	
At the societal level, structural changes in asylum policies to enable everyone to enjoy and fulfil their human rights are urgently required	
The participation of refugees and asylum seekers in all these levels is crucial	Keygnaert et al. 2012
Prevention of gender- and culture-sensitive interventions should be based on culturally competent interventions, empowerment, the enhancement of structural elements	Bhuyan and Senturia 2005
The adoption of comprehensive prevention approaches in which community resilience is integrated	Krieger et al. 2002
Culture-specific intervention tailored to the target group reaches the target group	Schouler-Ocak et al. 2014
Interventions should be gender-sensitive	

in clinical care. Alternative concepts are cultural sensitivity, humility, and responsiveness (Bhugra et al. 2014; Schouler-Ocak et al. 2019). Additionally, mental health workers should also be aware of their own cultural biases and knowledge on the use of interpreters or culture brokers, culturally different family structures, the effects of discrimination, exclusion, unemployment, intergenerational differences in acculturation, different explanations of illness, symptom presentations and treatment expectations, and idioms of distress (Bhugra et al. 2014). In this line, they should also be knowledgeable of training in the use of cultural mediation, culture brokers, or other models, including interpreters, working with family members or relatives. Furthermore, they should be trained in intercultural psychotherapy, including issues of transference and countertransference and somatization (Qureshi and Collazos 2011). In this line, Schouler-Ocak et al. (2019) underlined that there have to be knowledge on how the professional's own cultural background and limitations could influence working relationships with and the effectiveness of treatment they provide for refugee, asylum seeker, and ethnic minority patients. Therefore, cultural competence should be a part implemented at both the individual and clinical level as well as at the institutional level (Schouler-Ocak et al. 2015). A growing number of publications emphasized that cultural competence requires knowledge, skills, and attitudes, which can improve the effectiveness of psychiatric treatment. It is precisely for this reason that it provides a comprehensive response to the mental healthcare needs of refugee, asylum seeker, and ethnic minority patients. In this context, cultural knowledge means cognitive cultural competence, which is known as "knowledge" about the various ways in which culture, immigration status, and race influence psychosocial development, psychopathology, and therapeutic transactions (Bhugra et al. 2011), so that mental health workers should be mindful of the risks of stereotyping (Bhugra et al. 2014; Schouler-Ocak et al. 2015). Working with refugee, asylum seeker, and ethnic minority patients requires cultural skills and technical competence, which are essential in applying the knowledge in the clinical context. The main skills are the intercultural communication, the capacity to develop a therapeutic relationship with a culturally different patient, and the ability to adapt diagnosis and treatment in response to cultural differences between the psychiatrist and the patient (Schouler-Ocak et al. 2015). According to the authors, these skills explore the awareness of differences and similarities between cultures and their role in the expression and explanation of mental distress. Lie et al. (2011) reported that cultural attitudes and beliefs, which include personal prejudices, will be affected by knowledge and will impact behaviors. Therefore, intercultural work requires mental health workers to challenge their own perceptions of "reality"; to explore their own cultural identity, prejudices, and biases; and to be willing to adapt and to distinct cultural practices (Schouler-Ocak et al. 2015). Additionally, it should be emphasized that cultural competence is not an end product, a kind of technical expertise that confers on the individual a resolved accreditation which will enable them to work with patients from all cultures (Kirmayer 2012). Bhugra et al. (2011) and Qureshi et al. (2008) described cultural competence as an ongoing process of learning by training.

Recommendations to policy makers, service providers, and clinicians are offered in the WPA guidance on mental health and mental healthcare in migrants (Bhugra et al. 2011), the EPA guidance on mental healthcare of migrants (Bhugra et al. 2014), and the EPA guidance on cultural competence (Schouler-Ocak et al. 2015).

Conclusion

According to UNHCR (2018), millions of refugees, asylum seekers, and ethnic minorities live somewhere other than their regions of origin. More than 68 million people are currently in the process of fleeing their homes, and the number of refugees, asylum seekers, and ethnic minorities will continue to rise. Therefore, worldwide, healthcare systems have to be prepared for this very heterogeneous population. In this context, it should be taken into consideration that both concepts of health and disease and expectations about treatment depend on cultural background, including their traditional values, personal experiences, and social worlds, which are in a constant state of flux (Bhugra et al. 2011, 2014; Kirmayer 2012). Discussed factors as placing a burden on the health of refugee, asylum seeker, and ethnic minority patients include social exclusion, low education, low economic status, and low ethnic density. They are associated with a higher risk of developing certain disorders (Veling et al. 2014).

The very heterogeneous group referred to here is growing dramatically, and the developed countries are likely to receive increasing numbers of them. Among this population the proportion of people with a serious mental disorder such as PTSD is high. Therefore, healthcare services should prepare themselves to serve this group of refugee, asylum seeker, and ethnic minority patients in a better way. According to Lewis-Fernandez et al. (2016), in order to achieve this, on an individual level, the Cultural Formulation Interview (CFI) can usefully be employed during a mental health assessment to obtain information about the impact of culture on key aspects of a patient's clinical presentation and care. The key aspects include also their concepts of health and disease and expectations of treatment as well as stress factors. Additionally, training could profit greatly from the inclusion of teaching on the factors influencing the clinical assessment, treatment, and cultural integration of refugee, asylum seeker, and ethnic minority patients. In this line, cultural competence training for all professional staff and the regular use of language and culture mediators could be very helpful in minimizing some of the key barriers to service access and use, as well as in reducing undertreatment and inappropriate treatment. Furthermore, in all these issues, gender-specific factors have to be taken into consideration. On the one hand, it is well-known that social support, social conflicts, social exclusion, a lack of familiarity with rights, entitlements, gaps in health literacy, and direct and indirect discrimination are risk factors for poor mental health outcomes. On the other hand, individual psychological resources, social support, successful acculturation processes, cultural variations, and time since relocation are identified as statistically significant protective factors against the development of common mental disorders among refugees, asylum seekers, ethnic minorities, men, and women (Guruge et al. 2015).

Cross-References

- ▶ Challenges in Women's Mental Health: Care in Conflict and Post-Conflict Situations
- ▶ Culture and Women's Mental Health

▶ Mental Health Consequences of Sexual Assault
▶ Suicide and Suicidal Behavior in Women

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Suicide and Suicidal Behavior in Women

3

Lakshmi Vijayakumar and Neha Lamech

Contents

Abstract

Suicide is the leading cause of mortality for young women between 15 and 19 years of age. Globally, suicide mortality rate is higher among men; however, in some Asian countries, it is higher in women. The suicide rate among women from low- and

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and
Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_3

middle-income countries is 8.7 as compared to 5.7 among women in high-income countries. Globally, attempted suicide is higher in women than in men. Mental disorders like depression and schizophrenia are identified with suicidal behavior in both men and women. Eating disorders are correlated with a higher risk of suicide in women. Sociocultural factors like intimate partner violence, childhood abuse, and pregnancy-related factors have been associated with suicides among women. Being married appears to be less of a protective factor for women in Asia. Traditional and cultural systems that deny women autonomy have also been shown to increase suicidal behavior among them. There is an absence of targeted suicide prevention strategies for women. The issue of women and suicide has been neglected by policymakers, health, and community. For suicide prevention to be effective, the status of women in society needs to be systematically enhanced through empowerment programs focusing on education and employment. Interventions must be multifaceted and designed to nest within existing platforms of social, educational, and health services. Reducing suicide in women should be a global public health priority.

Keywords
Suicide · Women · Self harm

Introduction

Globally suicide is the second leading cause of death among people aged 15–29 (WHO 2014). Every year approximately 800,000 individuals die by suicide. In addition, it has been estimated that 10–20 million persons attempt suicide and 50–120 million are deeply affected by the suicide or attempted suicide of a close relative or someone they know. Suicide as a phenomenon has been characterized as a multi-determined event. That is to say that numerous factors, namely, biological, psychological, cultural, historical, and societal, determine and impact a person's decision to attempt suicide (Patel et al. 2016). Studies estimate that suicide will account for 2.4 of the global burden of disease by 2020. These staggering numbers make suicide a leading public health problem.

Magnitude of the Problem

Suicide is the leading cause of mortality for young women between 15 and 19 years of age. The rate of suicide among males is 18/100,000 and among females, 11/100,000 (WHO 2014). Universally, suicide mortality is higher among men. However, there are countries where the rate of mortality among women is higher (Table 1). The rate of attempted suicide is higher among women, the world over. The phenomena of women and suicide have been underrepresented, as more women attempt suicide compared to men; however, more men die from suicide than women do. Therefore, to have a clear understanding of the impact of suicide, morbidity must

Table 1 Women suicides more than men

	All ages		15–29 years	
Countries	Female	Male	Female	Male
	Rate	Rate	Rate	Rate
Afghanistan	4.4	3.7	9.8	5.1
Bangladesh	7.6	5.6	10.8	5.5
China	10.1	7.4	5.9	2.7
Indonesia	4.2	3.1	–	–
Iraq	1.5	0.8	2.0	0.7
Pakistan	8.1	6.8	12	6.3
Democratic Republic of Korea	–	–	37	29.6
India	–	–	36.1	34.9

Data sourced from WHO's "Preventing Suicide: A Global Imperative"

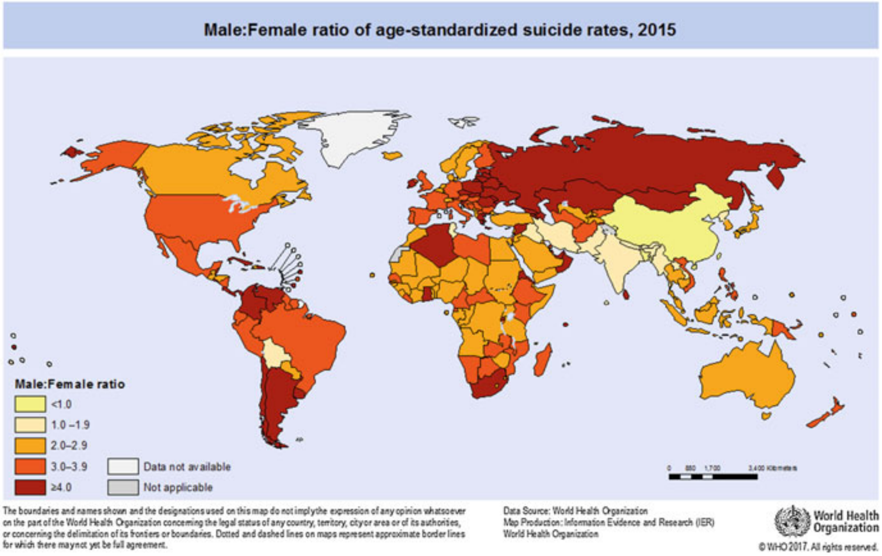

Fig. 1 Male-to-female ratio of age-standardized suicide rates, 2015

also be considered. When mortality and morbidity data are combined, it is evident that the burden of suicide falls disproportionately on women (Vijayakumar 2017). The issue of women and suicide has been neglected by policy makers and governments and in public health programs, and there is a lack of literature examining the specific nature of suicide in women.

Suicide-related global mortality data estimated regional- and country-level rates through weighted averages based on the population in each country. This revealed gender differences between low- and high-income countries. The male-to-female ratio of suicides in the world is highlighted in Fig. 1 from the WHO's report, "Preventing Suicides: A Global Imperative" (2014). Rates of suicide among men in HICs are higher at 19.9, when compared to their LMIC counterparts at 13.7. This trend is reversed in women, where rates of suicide are higher in women from LMIC, i.e., 8.7, as compared to only 5.7 among women in HICs (Vijayakumar et al. 2016). As a result, there is a considerably lower male-to-female ratio of suicide rates in LMICs, when compared to HICs. The male-to-female ratio on average annual suicide rates in high-income countries was 3.49 as compared to 1.57 in low-income countries. Table 2 from Disease Control Priorities provides a breakdown of male and female rates for medium and high HDI countries within each region. A closer look at the country-wise breakdown of these numbers reveals that the gender ratio among WHO low-income regions for the Southeast Asia region (1.55) and the Western Pacific (0.91) is lower than the average of other countries in the region. The data reveals that the highest number of suicide-related deaths in women occurs in Asia. Suicides among females in LMIC comprise 43% of all suicides and in HICs, 22% (Vijayakumar et al. 2016).

Sociodemographic Factors

Age

The general trend is that rates of suicide increase with age. Globally, rates are low in age groups less than 15 years and are high in the 70 years and over group. There are a few exceptions in studies, which have found unique suicide trends among women. A study from Korea found that increasing risk of suicide increased as age decreases and that girls 13 years of age are at the highest risk (Kang et al. 2015). The suicide rate by gender varies across age groups in different WHO regions. Rates are higher in men in all regions, except for the Eastern Mediterranean and Western Pacific regions, where suicide rates are comparable between men and women (Vijayakumar et al. 2016).

In LMIC, 63% of all suicides occur in age groups 15–49 years. Southeast Asia has a high rate of suicide in young women, which is not the case in other regions (Vijayakumar et al. 2016). Verbal autopsy studies from rural India have shown that the rate of suicide in young women exceeds that found in young men and can be as high as 162/100,000 in women and 96/100,000 in men (Joseph et al. 2003) (Gajalakshmi and Peto 2007).

Globally, the rate of attempted suicide is higher in women than in men (Vijayakumar 2017). A study from China found the lifetime prevalence of attempted suicide in women was approximately 2.2 times the rates in men (Cao et al. 2015b). A study conducted in Hanoi, Taipei, and Shanghai found that adolescents aged 15–19 reported higher rates of suicidal ideation and attempt when compared to adolescents aged 20–24 (Blum et al. 2012).

Methods

Gender differences have been found in the methods chosen to die by suicide. Generally men tend to choose more violent methods, like shooting, hanging, etc.,

Table 2 Estimated incidence and characteristics of suicide in HICs and LMICs, based on WHO Global Health Estimates

Region	Number of suicides in 2012 (thousands)	Global suicides (%)	Age-adjusted suicide rate in 2012 (per 100,000)			M:F ratio	Mean age of suicide	All deaths due to suicide (%)	Rank of suicide as a cause of death in 2012			Change in number of suicides from 2000 to 2012 (%)	Change in age-adjusted suicide rate from 2000 to 2012		
			Male + female	Male	Female				Male + female	Male	Female		Male + female	Male	Female
Global[a]	804	100.0	11.4	15.0	8.0	1.87	44.1	1.44	15	13	22	–9.0	–26.3	–22.8	–32.2
HICs[a]	197	24.5	12.7	19.9	5.7	3.49	50.4	1.69	11	9	21	–2.9	–14.3	–17.5	–4.5
LMICs[a]	607	75.5	11.2	13.7	8.7	1.57	42.0	1.37	17	17	21	–10.8	–29.7	–24.2	–36.7
LMICs in six WHO regions															
Africa	61	7.6	10.0	14.4	5.8	2.47	37.6	0.66	24	27	37	38.0	1.5	2.0	0.7
Americas	35	4.3	6.1	9.8	2.7	3.61	40.4	1.02	22	15	33	17.5	–6.8	–7.0	–6.3
Eastern Mediterranean	30	3.7	6.4	7.5	5.2	1.45	39.7	0.77	27	27	26	32.0	–1.2	3.9	–7.2
Europe	35	4.3	12.0	20.0	4.9	4.08	45.3	1.35	11	8	22	–30.3	–37.9	–38.3	–37.2
Southeast Asia	314	39.1	17.7	21.6	13.9	1.55	36.7	2.28	11	11	12	9.5	–10.8	–5.7	–17.4
Western Pacific	131	16.3	7.5	7.2	7.9	0.91	57.0	1.16	13	16	11	–46.6	–57.7	–55.9	–59.1

HICs high-income countries, *LMICS* low- and middle-income countries, *WHO* World Health Organization

[a] Global figures, overall HIC figures, and overall LMIC figures include data for three territories that are not member states: Puerto Rico, Taiwan, and China are included with HICs; the West Bank and Gaza are included with LMICs. The figures for LMICs in the six WHO regions only included WHO member states.

Sourced from Disease Control Priorities DCP3 when compared to women who, globally, have been found to die most often from self-poisoning (Denning and Cox 2000). Women from high-income countries were frequently found to use over-the-counter medications, which have low lethality but lead to high rates of hospital admissions (Huguet et al. 2015). However, in low-income countries, particularly those in Asia, self-poisoning using pesticides was the common method among women, with up to 30% of deaths (Gunnell et al. 2007).

Significant cultural differences can be found in the choice of method. Countries in the Middle East, Sri Lanka, and India have recorded high rates of self-immolation by women as a means of self-harm and suicide. Suicide by burning is a rare condition in the developed countries (0.06–1% of all suicides), and it is more frequent in developing communities (40.3% of all suicides) (Ahmadi 2007). In Iran, studies found that 70–88% of self-immolation suicides are by women (Ahmadi et al. 2008). In India, around 64% of suicides by self-immolation are by women (NCRB 2015). In the Hindu religion, which is the predominant religion in India, fire has been a symbol of purification. Practices of sati (widow burning) and jauhar (mass immolation to prevent capture) were prevalent in the country until they were banned (Vijayakumar 2004). Further easy access to kerosene/paraffin in the households has been cited as the reason why self-immolation is the most commonly used method by women in these regions.

Studies have also examined if differences between mortality rates between men and women are reflective of suicidal intent and do not pertain to choice of method alone. A study from Copenhagen found that there was no relation between suicide intention and choice of method, even though intention was found to be higher among males (Gunnell et al. 2007). In the case of women from rural and low-income countries, even though intention might be low, the use of lethal pesticides results in high suicide rates in these areas (Banerjee et al. 2009). Large data gaps exist in providing information on methods of suicide in LMIC, which impede understanding the problem and consequently developing interventions.

Protective and Risk Factors

In suicidology, there are many risk and protective factors that arise during the life course. These factors may differ between men and women and are important to understand, in order to develop appropriate interventions. It will also be important, while creating programs, to keep in mind the influences of culture and society on these factors and not to neglect the interaction between various factors. This section will discuss the various risk and protective factors that have been identified in women who have died by suicide or attempted suicide.

Clinical Risk Factors

Mental disorders in women, who die by suicide, have been an overlooked area by research and clinical services. Majority of the studies on suicidal women have focused on the sociocultural and interpersonal factors rather than on mental disorders. Clinical risk factors for suicide among men and women are largely the same. The relationship between mental health disorders and suicide and attempted suicide is very strong. Disease Control Priorities have estimated that 60% of deaths resulting from suicide can be reattributed to mental and substance use disorders (Patel et al. 2016).

Kaplan et al. (2016) in a 20-year follow-up study found that maximum suicidality was in the early years (4–5 years) following index hospitalization, and suicidal behavior generally declined after that. The female schizophrenia patients and the female bipolar patients were exceptions to this, and their risk was high even after the initial years (Kaplan et al. 2016). Male suicidal activity was triggered more by psychotic symptoms, while female suicidal activity seems triggered more by affective symptoms. It is evident that the role of mental disorder differs significantly between men and women, and further research is needed to formulate effective intervention.

The first and, probably, one of the few psychological autopsy studies of suicide in women was by Asgard (1990) in Stockholm. She used the definition and criteria of the Lifetime Version of the Schedule for Affective Disorders and Schizophrenia (SADS). At ages 59 and over, 65% of women were depressed, while only 36% at ages under 30 were found to have depression. 63% had made a prior suicide attempt and 71% had received psychiatric treatment (Åsgård 1990). In a recent psychological autopsy in Japanese women, Kodaka (2017) et al. found no difference in the presence of MDD and schizophrenia between the sexes. The overall prevalence of mental disorders was significantly higher at 96.4% in females, while it was only 87% in males.

Depression poses the highest risk and contributes toward suicidal behavior in men and women. In a community cohort study in Goa, Maselko and Patel (2008) followed 2494 women aged 18–50 for 12 months and found that 37% of women, who had attempted suicide, had a common mental disorder (OR 8.75, 95% Confidence Interval (CI) 2.88). In a cohort of 50,692 Norvegians, Bjerkeset et al. (2008) found that suicide risk in comorbid anxiety and depression was twofold higher in men (OR 7.4, CI 3.1–17.5) than in women (OR 2.9, CI 0.8–10.6). History of psychiatric admissions had a stronger impact on increasing suicide risk among females (OR 146, CI 87.63–243.25) than among males (OR 51.96, CI 33.62–80.31) (Qin et al. 2000). Oquendo et al. (2007) studied a cohort of 314 patients with major depressive disorder (MDD) and found that the risk factors for men were a family history of suicide, comorbid substance abuse, and early separation. For women, the risk factors were a previous suicide attempt, the lethality of the attempt, and less number of reasons for living. It is well known that a person who has attempted suicide is at greater risk of future suicide attempts. Further persons who have a history of multiple attempts are more at risk (Ho Choi et al. 2013).

Eating disorders were found to significantly raise the risk of suicidal behavior in females (Kodaka et al. 2017). Women with anorexia are estimated to have a 50-fold increased risk of suicide, and suicide is the second leading cause of death in those with anorexia. Both bulimia and anorexia are linked with increased risk of suicide attempt, with suicide attempts reported in up to 20% of patients with anorexia and up to 35% of those with bulimia (Bulik et al. 1999).

In a prospective study of 28,905 Japanese women aged 40–59 followed from 1990 to 2012, 78 women died by suicide. Women with a high total/level of cholesterol had a significantly higher suicide rate H.R.1. 90 (95% CI 1.13, B.19) than those with normal cholesterol. The association was specifically found in women with body mass index of <25 kg/m^2 but not in overweight or obese women. No difference in cholesterol was found in suicides among men (Svensson et al. 2017).

Alcohol and Substance Use

Substance abuse has been traditionally associated with suicides in men rather than in women, and hence, substance abuse in suicidal women is poorly understood. A review found that substance use behavior was associated with increased suicide behavior (Perez-Gonzalez and Pereda 2015). In a nationwide psychological autopsy, Prikole et al. (1994) found that female psychoactive substance-dependent suicides differed from that of male suicides. Females were more dependent on prescription drugs. Females less than 40 years had higher prevalence of borderline personality disorder and repeated suicide attempts, whereas in older females it was similar to older males. The onset of AXIS I disorder preceded substance abuse in females.

High alcohol use has been found to be a predictive risk factor toward suicidal ideation in women (Kumar et al. 2012). This finding has been repeatedly found across a number of population groups, including in Korea and America (Lamis and Lester 2013). Interestingly, it has not been found to have the same effect in men, except, notably, among the Japanese (Takada et al. 2009). A study among adolescents in Korea found that being an “ever smoker” or “ever drinker” increased the likelihood of attempting suicide in women. A study from the USA reveals that lowering the drinking age results in persistent increased risk of suicide among women and not in men (OR 1.12, 95% CI 1.05–1.18) (Grucza et al. 2012). Among the Inuit, using marijuana and having psychological distress were found to be significant risk factors for suicide attempt in the previous 12 months, over other factors including experience of personal violence, alcohol use, and low self-esteem (Fraser et al. 2015). High-risk groups, such as women with a personal history of drugs and substance use and who had drug-using spouses or partners, were found to be at an increased risk of suicidal ideation and attempt (Noori et al. 2013).

Intimate Partner Violence (Domestic Violence)

Intimate partner violence is the most common form of violence perpetrated against women, having a global lifetime prevalence of 15–71% (Stewart and Vigod 2017). Data from 2003 to 2010 from the National Violent Death reporting system in America, which examined suicide in 16 states of America, found a history of self-harm, previous attempts, financial difficulty, and experiencing intimate partner violence to be strongly associated with suicide (Huguet et al. 2015). A recent systematic review found that intimate partner violence (IPV) in women is strongly associated with death by suicide, with a lifetime prevalence ranging from 3.5% to 62.5% (MacIsaac et al. 2017). An important study in the review revealed a 17-fold increase in suicides compared to women who had not experienced IPV. Evidence examining the association of women as perpetrators of IPV and suicide, however, are more mixed (MacIsaac et al. 2017).

A prospective community-based study from India, focusing on risk factors in attempted suicide in women, found that exposure to violence and presence of a chronic physical illness were significantly associated with increased risk (Maselko and Patel 2008). Certain ethnic groups experience greater rates of violence and traumatic events. It is well documented that in the USA, African Americans experience traumatic events, such as sexual violence, more frequently when compared to other ethnic communities (Roy 2003). The lifetime prevalence of suicidal behavior among women who experienced intimate partner violence was 28% among White women, 17% in African Americans, and 21% among Latin and Hispanic women. Women who were in the "extreme danger" category had a 3.7 increased odds of attempting to or threatening suicide, when compared to women who were in the "variable danger" category (Cavanaugh et al. 2011). A secondary analysis of this data revealed that Danger Assessment (DA) scores were associated with suicidal behavior in Latina women but not for African American or European American women. DA scores were then correlated with nonfatal suicidal behavior and suicide communication (NSBSC) to understand which items were significant. Among Latina women "believing their partner could harm them," "partner using a weapon on them," "strangulation," "forced sex," "threats to harm children," "being constantly jealous," and "partners suicidal behavior" were strongly associated with NSBSC. African American women's NSBSC was associated with "threatening to harm children," "forced sex," and "stalking behavior." Few European American women-associated items were "partner having forced sex" and "beating them while pregnant" (Cavanaugh et al. 2015).

A highly significant association has been established between domestic violence and suicidal ideation. High rates of 61% from Egypt, 48% in Brazil, and 28% from the Philippines have reported domestic violence and suicidal ideation (World Health Organisation 2001). A large multi-site population-based study in India found that 40% of women experienced domestic violence. Of these women, 64% had suicidal ideation (Kumar et al. 2005). A WHO study on domestic violence against women in Bangladesh found that physical and emotional violence by a spouse was associated with an increase of suicidal ideation among married women. However, sexual violence was found to have no effect on suicidal ideation except when occurring outside of marriage, i.e., women who had experienced sexual abuse before their marriage or by someone who was not a spouse contributed to an increased suicide ideation (Tabassum Naved and Akhtar 2008). A dose-response effect was also noticed wherein the proportion of women reported having suicidal thoughts increased from just 1% if exposed to no form of violence to 15–16% when exposed to all forms (physical, sexual, emotional) of violence (Tabassum Naved and Akhtar 2008).

Domestic violence is highly prevalent in LMIC. Its occurrence has to some extent been normalized and is even culturally accepted. In strong patriarchal societies where collective norms are important to maintain, women may be less willing to discuss problems such as abuse and violence. Maintaining the families and the husbands "izzat" or honor prevents women from seeking help as reporting maltreatment is viewed as shaming the family (Asad et al. 2010). In some countries, sexual violence and marital rape are not punishable by law and may, therefore, be perceived as behavior that is acceptable within a marriage (Tabassum Naved and Akhtar 2008).

Childhood Abuse

Childhood mental, physical, and sexual abuses have been found to have crippling effects that can be sustained well into adulthood. Studies have shown it to be an important predictor of suicidal behaviors (Dube et al. 2013). Adversity and abuse during childhood have also been linked to mental health problems in adulthood, which in turn increase a person's risk of suicide. Social relationships in adulthood are also affected, as self-esteem and the ability to trust and form stable relationships are hindered (Stein et al. 2002, Dimitrova et al. 2010). Apart from mental health problems such as depression and post-traumatic stress disorder, persons who experience traumatic childhood events, including sexual violence, are at an increased risk of suicide (Vinson and Oser 2017).

A study examining the effects of emotional abuse during childhood found that it is significantly associated with suicidality in adulthood (Lee 2015). Participants, who were more frequently exposed, were found to have higher levels of suicidal behavior. The study also found that emotional abuse had long-term consequences through revictimization in adulthood and increased risk of suicidality.

Studies have found clear links between suicidal behavior and self-harming behavior in adults who have experienced sexual abuse in their childhood, when compared to adults who had no history of sexual abuse (Maniglio 2009). A 12-year prospective study of girls who had experienced childhood sexual abuse found that forced sexual acts were associated with lifetime suicide attempts, as well as a non-suicide-related self-harm behavior (Rabinovitch et al. 2016). A retrospective cohort study of 17,337 adults examining the link between childhood abuse, measured by the Adverse Childhood Experience (ACE) Questionnaire, and attempted suicide found that a lifetime prevalence of at least a single attempt was three times higher in women as compared to men (Dube et al. 2013). It also found that the risk of attempted suicide increased 2–5 times, if there was a history of childhood abuse in both sexes, regardless of the type of abuse. The risk of attempting suicide decreased over time, with a score of 7 on the ACE, resulting in a 51-fold increase in adolescence and a 30-fold increase in adults (Dube et al. 2013). A review of literature found a strong association between physical and sexual abuse in childhood to suicidal ideation and attempt in adolescence (Miller et al. 2013).

Marriage

It has been widely accepted that marriage is a protective factor for suicidal behavior. The evidence shows that persons who have been living alone, never married, divorced, widowed, or separated exhibit an increase in suicidal behavior (Monnin et al. 2012; Griffiths et al. 2008). There are gender differences, wherein marriage is more protective for men than women. A prospective, longitudinal study found that divorce and separation resulted in higher suicide rates, but only among men (Kposowoa 2000). Another prospective cohort study from Japan had similar findings, wherein the hazard ratios among widowed or divorced men, 2.84 (95% CI: 1.37–5.90), were higher compared to women (Fukuchi et al. 2013). However, most studies that have observed this finding have been from high-income countries (Luoma and Pearson 2002). The evidence is more mixed while considering the findings across low- and middle-income countries. A case-control study in China found no association between marital status and suicide (Phillips et al. 2002), while another study focusing on marriage among rural Chinese women found that marriage was a risk factor and increased the odds of suicide threefold (Zhang 2010). A study from India concluded that marital status alone was not associated with suicide but was influenced by other factors such as conflict within the family and social integration (Rao 1991).

For women from low- and middle-income countries, being married appears to be a risk factor for suicidal behavior. In Bangladesh, the prevalence of lifetime suicidal ideation among reproductive-aged women that had ever been married was 11–14%, which is high compared to other countries in the world (Tabassum Naved and Akhtar 2008). Women from LMIC in South Asia are particularly vulnerable, due to certain social and cultural practices. The practice of an arranged marriage is prevalent in these societies; often they are forced upon women who are “at a marriageable age” but may not wish to enter into the marriage. The couple may resort to suicide, to escape this forced marriage, either together or individually. Clearly, social and cultural practices and meaning surrounding marriage have a role to play in determining if marital status is a risk factor. Other stressors that impact a women at this stage include the pressure to have children, infertility, inability to produce a male heir, and troubled relationships within the family (Oner et al. 2015).

Pregnancy

Suicide is a known contributor to pregnancy-related mortality. A confidential inquiry survey found suicide to be a leading cause of death in women following the first year after giving birth (Weindling 2003). A systematic review of suicide-related mortality and pregnancy in 21 LMIC countries found that the suicide-related deaths during pregnancy ranged from 0% in Vietnam to 23.08% in Argentina (Fuhr et al. 2014). The studies showed high heterogeneity in methods and sample size. The pooled prevalence for suicide-related deaths was 1% (0.54–1.57). A study from South India found the prevalence of suicidality during pregnancy to be 7.6%. 2.4% of women reported planning suicide attempts, and 1.7% had attempted suicide during the current pregnancy (Supraja et al. 2016).

Other studies have examined predictors of maternal self-injurious behavior and found that mothers, who had experienced depression or low mood, were at increased risk (Chaudron and Wisner 2014). However, generally women who are pregnant or in the postpartum period are at lower risk for suicide when compared to women in the general population (Fuhr et al. 2014). Schiff and Grossman examined the relationship between maternal complications and suicidal behavior in the postpartum period in women who were hospitalized following childbirth. There was no association between maternal complications. However, they found that death of the child or fetal death in the first year is strongly associated with suicidal behavior (Schiff and Grossman 2006).

Studies that have examined other factors contributing to suicide in pregnancy have also found that women who experienced domestic violence, strained family relationships, and socioeconomic deprivation were at the most risk for attempted suicide during pregnancy (Asad et al. 2010). Similar results were found in a case-control study from South India. When compared with controls, women experiencing suicidal ideation were found to have financial constraints, finding it difficult to buy basic food. They were also more likely to experience childhood abuse, have an unplanned pregnancy, or experience intimate partner violence (Supraja et al. 2016). Interestingly, a study from Pakistan found that pregnant women who were more educated exhibited more suicidal behavior, when compared to women who had less formal education (Asad et al. 2010)

Women during the postpartum period may be faced with mental health problems, ranging from affective disorders to postpartum psychosis. It was found that 59% of these maternal suicides could be reattributed to psychosis or depression (Cantwell et al. 2011). One study that examined the association between pre-existing psychiatric conditions and attempt to suicide postpartum found that younger Black, Native Alaskan, or American Indian women were more likely to attempt suicide. Women, who were at higher gravida and parity, were also found to be more at risk than their control counterparts (Comtois et al. 2008). The study found that there was a 10.7-fold increase in suicide attempt with one hospitalization and a sharp increase to 25.5-fold with two prior hospitalizations.

Miscellaneous Risk Factors

There are various life stressors in certain groups that may increase their risk and make them more vulnerable to suicidal behavior. This section will discuss the military, prison population, and LGBT groups.

Among military personnel, suicide rates, although lower than that of the general population, are of concern, due to the specific risk factors pertaining to the profession. High-stress environments, exposure to violence and traumatic events, lack of personal freedom, strong masculine culture within the military that makes it difficult to reach out for support, and easy access to firearms have all been cited as risk factors. Women in the military constitute a growing population; however, most available literature has focused on men in the military. Little is known, therefore, about women-specific issues and risk factors.

Studies have found high rates of mental disorders, particularly PTSD among active soldiers. High rates of suicide and attempted suicide are also found among female veterans of war. A review of substance abuse and suicide among women veterans in America showed that women veterans had high rates of drinking problems. Two studies in the review also found that women veterans had suicide rates that were thrice as high when compared to the general population (Chapman and Wu 2014). Veteran attempters were found to have greater psychiatric morbidities and substance abuse issues.

Correctional facilities and remand centers have higher suicide rates than those present in the general population. A meta-analysis found high rates of mental illness, including depression, schizophrenia, and personality disorders, among prison inmates. Studies have found prior incarceration and history of violent crimes to be more prevalent in victims of suicide when compared to those of other inmates. Multiple studies have shown that some of the biggest risk factors to suicide attempts in prison are being a single cell occupant, mental illness, previous suicide threat, and incarceration for violent crimes. There is a paucity of literature on women in correctional facilities, and it will be interesting to know what gender differences exist in such a high-risk population. A prevalence study from New South Wales reported that women (28%) in prisons were significantly more likely than men (19%) to report lifetime suicide attempts (Larney et al. 2012).

LGBT groups have multiple stressors and risk factors mediating the association between sexual orientation and suicidality. Social exclusion, stigma, mental health issues, and substance use all contribute to suicidal behavior. Studies have found large unmet mental health needs of LGQ populations (Steele et al. 2017). Literature in this area has tended to focus more on men who are bisexual or gay as compared to women. A systematic literature review found that the lifetime prevalence among LGQ women to have a suicidal behavior risk ratio of 1.75:2.10 when compared to heterosexual women (King et al. 2008). Another population-based study found that in young LGQ women, the risk of attempting suicide was six times higher compared to their heterosexual counterparts (Fergusson et al. 2005).

The various risk factors for suicide in women can be assigned to five overlapping domains as shown in Fig. 2. Psychological, environmental, personal, sociocultural, and sociodemographic factors interact and intersect, resulting in suicide in women.

Protective Factors

Protective factors are key to decreasing the risk of suicidal behaviors. Incorporating these factors into suicide prevention program or creating interventions which incorporate these elements will strengthen their efficacy. Positive self-esteem, emotional adaptability, the ability to cope with stressful situations, resilience, and good interpersonal communication with family and friends are important protective factors and

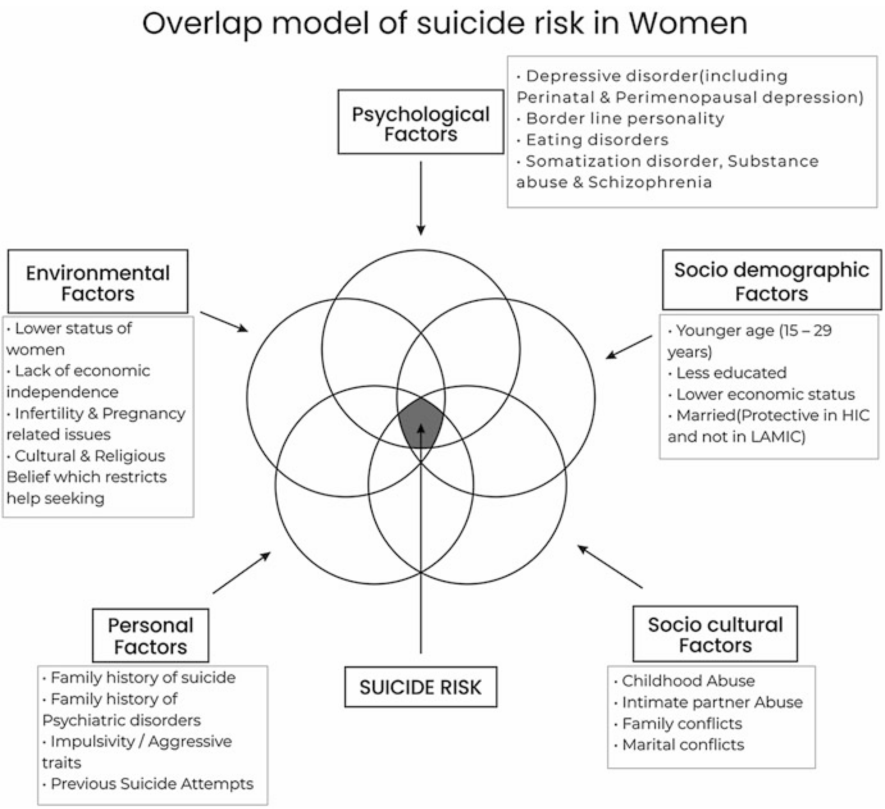

Fig. 2 Overlap model of suicide risk in women

provide support to the individual (Wang et al. 2011). In a study among adolescents, it was found that when controlling these risk and protective risk factors, suicidal ideation in females increased from 2.50 to 4.23 times when compared to that of males (Wang et al. 2011). Another multi-site study in Asia found that strong parent-child relationship, which was measured through various constructs, including support and monitoring of the child, served as a protective factor against suicidal ideation and attempt in adolescents aged 19–24 (Blum et al. 2012).

In minority communities such as aboriginal populations, it has been hypothesized that "cultural status" may be an important protective factor. However, studies examining protective factors among aboriginal communities have not always found this to be the case. When comparing closeness to community, having someone to reach out to for emotional support and various livelihood activities as protective factors among the Inuit, only "goes hunting" was found to be protective in women (Fraser et al. 2015). Some studies have examined ethnic identity to be a protective factor among African American women. Results have found conflicting evidence to show that it is protective for African American women, but not for those who have a history of sexual violence as a minor (Vinson and Oser 2017). A study among the Metis aboriginal population in Canada found high self-esteem, positive coping strategies, and good health to be protective factors against suicidal ideation (Kumar et al. 2012). Social support was also found to be a protective factor among women but had no impact on suicidal ideation in men or in women who had experienced a major depressive episode.

Religion

Vijayakumar and John (2018) based on the data from the 2014 WHO suicide report calculated that the suicide rate of women in Buddhist countries was the highest at 11.08, followed by women in Hindu countries at 9.74. Atheist countries rate was 6.16, Protestant countries 5.68, Catholic countries 4.27, and Muslim countries 4.55.

Canetto (2015) in a review of suicidal behavior among Muslim women describes their suicidality as a desperate way to protest against and escape from family and social oppression and abuse.

Cultural and Regional Factors Related to Suicide

Variations across cultures with regard to suicidal behaviorism are known. The very conceptualization of suicide has been thought to influence prevalence rates in certain countries.

In Korea perceived low socioeconomic status and perceived poor performance in an academic setting increase the risk of suicidal behaviors (Kang et al. 2015). Status and the notion of perfection are held in high regard in the Korean culture, and therefore, adolescents, who perceive their performance to be less than average, are at risk. Contemporary suicide in Japan has taken on dimensions of suicide in the West. An aspect that distinguishes it from suicide in the West is the presence of Shinju or family suicides. These are by persons that are well known to one another, a mother and child or a father and child. Another form of suicide that has gained attention in Japan is Karojisatsu or work-related suicide, which is understood to be caused by the pressures of modern work culture.

One study found that women in Asia, who live alone or with friends, are at reduced risk for suicidal ideation and attempt, as compared to women who live with their families. Counterintuitively, it may seem that in such cultures, while families are important sources of support, societal pressures play a huge role in contributing to suicidal behavior (Blum et al. 2012). A study examining the changing rates of suicide and its causes from India notes that a sizeable percentage of women suicides were due to dowry. Dowry is an agreed amount of money and assets like livestock, gold, property, etc. that are paid to the husband and his parents by the girl's family. Often the sums of money and assets are much higher than what can be afforded, and this leads to harassment and abuse of the women (Aggarwal 2015).

A cross-cultural comparative study between adolescents in Hong Kong and the USA using matched controls for age and gender showed that culture influences risk factors for attempting suicide. Depression, feeling hopeless, and poor quality of interpersonal relationships, as well as exposure to persons who have attempted or died by suicide, were significant factors that varied across cultures.

Accessing health services is also extremely low, when compared to other parts of the world. The limited availability of support structures in low- and middle-income countries poses a barrier to accessing services. Although mental illness and suicidal behaviors are stigmatized in many cultures, in countries such as India, suicide is a crime punishable by law. Suicide is also stigmatized that it is shameful for the family to report it. Thus in countries such as China and India, deaths by suicide may not be recorded accurately and are underestimated (Cao et al. 2015a). In Pakistan, suicides are not documented and, therefore, not featured in national health data. Cases that may be suicide related are recorded by the method employed instead, such as "acute poisoning" (Asad et al. 2010). A multi-site study examining help-seeking behavior among youth aged 15–25 across Vietnam, China, and Taiwan found that women and girls were more likely to seek help when compared to males. Women reported that they would first go to peers (60%) and health professionals (17%) for support, whereas men were more likely to seek support from their families (Blum et al. 2012). However, 25% of women and 32% of men reported that they would not approach any of these sources for help.

The AIDS pandemic in Africa has implications for suicidal behavior. Studies from Kenya and South Africa have shown that suicidal behavior increases during certain stages in the illness cycle, particularly during the initial period following diagnosis and toward the end stages of the illness. Pre-existing mental health conditions and previous suicide attempts have also been shown to be associated with suicidal behavior in persons living with HIV and AIDS in Africa. Widespread poverty and the stigmatizing nature of the illness create further complications for persons in the workplace and create conflicts at home which can lead to depression, stress, isolation, and finally increase in suicidal behavior.

In Brazil, the gender ratio for HIV/AIDS has decreased from 26 to 1.5 males for every female. A study examined the prevalence of violence and suicidal ideation among women, who are living with HIV/AIDS. It found that there was an extremely high rate of gender violence (72%) and that at least half of the women experienced suicide ideation as measured on the QIS scale (Ceccon et al. 2014).

Cultural conceptualizations of suicide and its causes have been shown in studies from indigenous communities in Australia. When asked how suicide is defined by the aboriginal community, answers included "spending time at certain places in the community." Explorative studies have found that there is a belief that when a person dies by suicide, their spirit lingers in the area that it happened and calls other people to join them by taking their lives (Tighe et al. 2015).

Traditional cultural systems that deny woman autonomy have also been shown to increase the risk of suicidal behaviors among women. The district of Van, a feudal agrarian society in Turkey, has higher rates of suicide in women, which may be attributed to the low social status of women. The practices of kuma or taking a “fellow wife” and berdel “bride exchange,” which are often done without the consent of or consultation with the women, contribute to the high suicide rate (Hekimoglu et al. 2016). The rate of suicide is the highest among childhood and adolescent girls.

Prevention

There is scant evidence for suicide prevention in women. Save for programs that have aimed to reduce maternal mortality through suicide, through screening and referral to mental health services (Healey et al. 2013).

The only intervention to reduce suicide in women is from Iran. Ahmadi (2007) developed a community intervention to reduce self-immolation of women. The intervention consisted of increasing awareness, videotaping of victim stories, drawing and painting competition, etc. Self-immolation was significantly reduced by 57% in the intervention region of Gilanghahar compared to 27% reduction in the control region of Sarpazahab ($p = 0.04$).

The lack of targeted suicide prevention intervention strategies for women is due, in part, to the conceptualization of suicide as primarily a male problem. A dearth of research in the specific manifestation of suicide in women compounds this problem. Attention will have to be paid to the varying ecological and social risk factors, which are prevalent among women in different countries and across different age groups.

Conclusion

Prevention of suicide in women is closely linked to the cultural and social status that women occupy. For suicide prevention to be effective, the status of women in society needs to be systematically raised through empowerment programs focusing on education and employment, which will ultimately lead to social and economic independence. Laws in certain countries that perpetuate certain risk factors against women, such as marital rape and intimate partner violence, must be changed. It has been estimated that the absence of sexual abuse would reduce the lifetime risk of attempting suicide by 28% in women (Bebbington et al. 2009). It is clear that the factors resulting in suicidal behavior in women are complex. Interventions, therefore, must be multipronged and nested into existing platforms of social, educational, and health services, for wide reach and better impact.

Cross-References

- ▶ Culture and Women’s Mental Health
- ▶ Depression, Anxiety, and Physical Morbidity in Women
- ▶ Refugees and Asylum Seekers

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Part II

Structural Factors and Circumstances of Daily Life

Women's Political and Economic Participation

4

Marianne Schulze and Michaela Amering

Contents

Abstract

The private and public realms of life are in large part culturally defined as female and male, respectively. Various human rights treaties and political agreements call on States to enable women to participate in the male-dominated public sphere.

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_6

Obstacles abound for girls and women, who find themselves excluded not only because of their gender but also when they experience mental health problems and the perceived consequences, including potential “dangerousness.” Manifold factors play into the state of mental health of girls and women, among them the status quo of gender relations, the interactions with every day life, and the consequences of male-oriented health policies. The latter do not adequately cater to the accessibility needs of girls and women, especially those with mental health problems.

These challenges are magnified in the development context, where the Sustainable Development Goals (SDGs) aim to ensure that no one is left behind, including girls and women with mental health problems. Humanitarian crises serve as a powerful example of the threats to the lives of girls and women with mental health problems. Against this backdrop, the empowerment of self-advocates, particularly in the context of the negotiations of the Convention on the Rights of Persons with Disabilities, provides a salient counter-narrative.

Keywords
Participation · Human rights · Women’s rights · UN-CRPD · Trialogue

Introduction

Development is a multipronged effort as evident in the 169 targets of the 17 Sustainable Development Goals (SDGs). A key role in most of the targets is the participation of persons left behind in previous development efforts. This chapter will focus on the ways in which girls and women, particularly those with mental health problems, are enabled to participate and which forces, particularly those emanating from patriarchal structures, stand in the way of ensuring their meaningful contributions as experts in their own right.

Gender Equality Changes Everything

Gender equality changes everything. Gender equality leads to better health and mental health for women and girls. It will improve public health and mental health for all. This perspective and the expected positive effects of gender equality on societies’ economic and social development lead to gender equality being one of the 17 SDGs of the UN Sustainable Development Agenda 2030. The recent UN report “Turning Promises into Action: Gender Equality in the 2030 Agenda for Sustainable Development” provides for “robust, gender-responsive monitoring” of the 2030 SDG Agenda and opens by explaining that “gender equality is central to the achievements of all 17 SDGs” and arguing for “an integrated and rights-based approach to implementation.”

Women Must Be Involved at All Levels of Developmental Action

Gender equality programming for humanitarian action is not an exception, but a particularly pointed example of how policies, monitoring, and implementation efforts are shaped by the new policies of inclusion and the participation of women and girls on all levels.

The risk to fail women and girls in humanitarian crises is high. While empowerment of women and girls is central for the health for all at any given time, humanitarian crises pose a special risk for the mental health of all adults and children. Most often, women and girls are already the most marginalized and vulnerable members of their communities, have their resources constrained, and suffer differently and often to a significantly greater extent. Women are at elevated risk of many forms of gender-based violence and have their sexual and reproductive rights and health needs undermined in life-threatening ways. Core examples of tasks warranting gender-specific attention concern access to reproductive health care and protection against gender-based violence. The United Nations Population Fund (2018) estimates that 34 million women of reproductive age, 5 million of whom are pregnant, needed humanitarian assistance and protection in 2018. The need for better obstetric and newborn care is implied by the fact that 60% of preventable maternal mortality deaths take place in settings of conflict, displacement, and natural disasters, according to a recent Care International report (2017). There is also convincing evidence on the impact of different contraceptive measures and the need to integrate safe abortion and post-abortion care into emergency care. While the lack of bathroom equity and the so often deplorable menstrual hygiene situation are a terrible disadvantage for women under even the best of circumstances, in humanitarian crisis situations they constitute grave extra risks for women and girls.

The heightened interest in investment in gender responsive humanitarian programming, however, does not stem only from awareness of women's specific needs and the desire to stop failing them. It comes also from growing evidence that investment in women can impact the whole community and contribute to making help more effective for all. Gender responsive humanitarian programming plays a significant role in the success of emergency responses. A focus on empowering women and girls strengthens the effectiveness and improves the long-term impact of interventions in reaction to humanitarian crises and can promote additional lasting positive effects for communities and societies (UN Women 2018b).

Consulting women and girls in recognition of their specific capabilities, needs, and human rights is in turn central to the successful introduction and investment in gender-responsive humanitarian programming. Even though it has been almost two decades (October 2000), since the United Nations Security Council adopted its first ever resolution on the importance of including women in peace-building processes, women continue to be sidelined in most of these (UN WOMEN 2018). Survivors of mines and other explosive remnants of war (ERW) increasingly join such consultations, with evident success (ICBL 2015), underlining the value of participation in pursuing this agenda (see ▶ Chap. 7, "Challenges in Women's Mental Health: Care in Conflict and Post-Conflict Situations").

Guidelines and programming have focused in recent years on gender-sensitive and equality approaches in order to strengthen crisis responses. An example is the United Nations Office for the Coordination of Humanitarian Affairs (OCHA) Policy Instruction on Gender Equality 2016–2020 (2016). Humanitarian crises can offer special opportunities for the empowerment of women and girls with lasting positive effects as evidenced by changes in social structures and power dynamics in war and post-war societies.

Frequently, women and girls are molded to maintaining and expanding their roles and their resilience in the face of adversity. However, the risk of men losing their accustomed roles or taking over traditionally female roles can create additional risks for women. Preexisting disadvantages in rights and resources can lead to women and girls being the first to lose access to scarce resources like food and water. Girls' education is endangered to an even greater extent than boys', and the risk of child marriage can increase dramatically for girls. The specific needs and resources of adolescents in humanitarian crises, however, still feature as one of many data gaps.

There is also little information on the contextual factors for the risks and opportunities inherent in having to cope with humanitarian crisis and even in profiting from its transformative potential. These are insufficiently understood or taken into account. While there is some knowledge from recent reviews on how programs can address underlying dynamics of power abuse and violence in affected communities, there are data gaps in understanding effective interventions (Blanchet et al. 2017; UN Women 2017). Such measures allow for earlier prevention and protection, as well as comprehensive clinical and psychosocial care for survivors to be characterized and implemented. Evidence-based, economic as well as human rights perspectives all do agree on the fact that women and girls must be involved on all levels of humanitarian action such as prevention, response (including search and rescue), recovery and rehabilitation, community rebuilding, and peace building.

However, not all consequences of specific strategies to harness the increased effectiveness that women's participation in emergency aid brings are well understood. There is a risk, therefore, of unintended consequences exemplified by historical and recently reported backlashes against the gender equality movement. Another factor in fostering positive gender relations in the humanitarian setting is female representation in leadership roles in institutions involved. One main factor that should be a focus of change is the need for better female representation among aid workers on all levels, including local and international leadership.

The current queries into alleged sexualized crimes in some humanitarian organizations might be an opportunity for decisive changes in this regard too.

Data clearly indicate that strengthening political and economic participation is the central element for the success of gender equality programming in humanitarian emergencies. Other core elements include creating safe spaces, ensuring gender-specific safety and health interventions, and meeting the specific needs of men, boys, and persons identifying as LGBTIQ.

A central challenge exists in the parallel development to the evolving policies and practices in humanitarian crisis situations, concerning persons with disabilities. The UN-Convention on the Rights of Persons with Disabilities (UN-CRPD) was negotiated for the first time in history with the full participation of persons with a lived experience of disability (2006). In another historic first, it explicitly includes persons with mental health problems. Article 11 of the UN-CRPD formulates the obligation to "ensure the protection and safety of persons with disabilities in situations of risk, including situations of armed conflict, humanitarian emergencies and the occurrence of natural disaster." The UN Charter on Inclusion of Persons with Disabilities in Humanitarian Action in accordance with the Sendai Framework on Disaster Risk Reduction (2017), based on the CRPD (Preamble (p)), specifically calls attention to multiple and intersecting forms of discrimination and the need to empower women and girls with disabilities in humanitarian crisis contexts (see ► Chap. 7, "Challenges in Women's Mental Health: Care in Conflict and Post-Conflict Situations").

No One Is to Be Left Behind

The Sustainable Development Goals (SDGs) aim to ensure that no one is left behind in accelerating development in all its forms, particularly in addressing structural aspects of inequality, including in ensuring the participation of all to enable their equal inclusion in societies. Acknowledging that some persons start their lives or soon find themselves in circumstances that make them vulnerable, the SDGs try to address some of the disabling factors in the pursuit of equality. Girls and women with mental health problems are often rendered vulnerable by a variety of factors that compound to manifest insurmountable exclusion: the perception of their sex as well as their gender and the misconceptions of mental health. Various expressions of patriarchy, not least "traditional expressions of masculinity" (American Psychological Association), including toxic masculinity, compound such perceptions. Frequently, other factors aggravate the exclusion further such as lack of social capital, inadequate language skills, ethnicity, or family status – to name a few.

Structural Problems in Ensuring No-One Is Left Behind

As the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) contends in its opening paragraphs: "The full and complete development of a country, the welfare of the world and the cause of peace require the maximum participation of women on equal terms with men in all fields." This assertion rings particularly true for girls and women with mental health problems: their overrepresentation in the "deep pockets of deprivation" (UN WOMEN 2018) is caused by a plethora of structural factors, including traditional expressions of masculinity and gendered expectations. There are differences in wealth, location, and ethnicity that contribute to disadvantage and which, importantly, do not operate in isolation (UN WOMEN 2018).

As discussed earlier, representation matters – women with mental health problems need to speak for themselves in peace-building processes and partake in disaster preparedness. Anecdotal evidence around visual representation of persons with mental health problems in gravely under-resourced contexts hints at the representation – and therewith likely treatment – of women and girls with mental health problems. Images of persons with mental health problems chained to trees and held in cages and other inhuman and degrading conditions bordering on torture by and large display men. Neither author can recall having seen a woman or girl depicted in such documents. As anecdotal as this impression is – and this is obviously not an encouragement to divert resources to the quest for female representation in imagery of the abuse of persons with mental health problems – it reflects the blackout that mental health problems mean for many women and girls with mental health problems, starkly so in under-resourced contexts.

Representation and empowerment of women and girls with mental health problems as advocates in their own right is thus key in tackling the structural undercurrents and ensuring that the necessary paradigm shifts are meaningful and sustainable.

Social Constructs Impede Participation

Human rights serve a multitude of functions. Depending on the perspective, they address inequalities in communities, societies, and public spaces in a variety of ways. At their core, they aim to ensure that everyone can be who they are and participate in all spheres of life as the person they are or chose to be. “Freedom from stigma” (EHRC 2009) is another way of expressing the goal that each individual should live in dignity. The biggest and most sweeping force to take away that dignity is abuse of power. Power is assigned, attributed, presumed, and assumed in manifold ways. The commonality: social constructs play a decisive role.

A socially constructed overpowering power is that of male superiority. In many societies, this results in girls and women being placed in subordinate and disadvantaged positions. It is frequently “culturally justified as part of the ‘natural’ order” (Ibahow 2014). Recently, the American Psychological Association highlighted the impact of “traditional masculinity ideology” (American Psychological Association); the mainstream media has noted that the concept of toxic masculinity “has been around forever; but suddenly, the term seems to be everywhere” (*New York Times* 2019), reflecting the recent upsurge in discussing forms of sexualized violence also as a result of gendered expectations and limitations.

Accordingly, “spheres of action” have been created, which are based on structural obstacles creating a “dichotomous allocation” of both power and therewith radius and action (Wittkopp 2012). Such spheres of action are a prerequisite for the meaningful participation of girls and women.

Structural obstacles are magnified when "exclusionary impulses" (Ibahow 2014) enter the sphere. Contemporary mainstream spheres frequently resort to "competing claims of religious and cultural rights" (Ibahow 2014) as if they were not questionable enough in their origins and toxic in their impact: Add the stigma of mental health, and obstacles in accessing public space and seizing – and maintaining – power become overwhelming.

The bridge between girls and women and poor mental health has many pillars:

- Growing up in sexualized environments and building resilience
- Discovering the importance of mental health and learning to protect it
- Having one's capacity – and therewith frequently mental health – questioned
- Being treated unequally when mentally ill
- Potentially being persecuted for being perceived as mentally ill
- Frequently being the main care-taker of family members with mental health problems

Further pillars support the bridge between girls and women and good mental health or promoting mental health:

- Finding a voice as a girl or woman with mental health problems
- Empowering those in family care
- Supporting people with mental ill-health: as a medical professional
- Planning, carrying out, and publishing evaluation and research

At the same time, the field of mental health research and academic psychiatry suffers from considerable deficits with regard to diversity. Despite considerable gains, women are still underrepresented in academic psychiatry, including in leadership positions. Continuing efforts and interventions are required to enhance the participation of women on institutional, political, and editorial levels in order to advance toward the goal of gender equity (Süßenbacher et al. 2017).

In their recent practical guidebook on addressing sexualized violence, Hassan and Lambert Sanchez (2019) highlight the importance of focusing on the environment that enables such behavior – and the power(s) that support it – rather than just the individual behavior.

Perceived Dangerousness Upends Right to Life

"Women's rights are human rights." Those pushed to the margins of society – and possibly beyond – magnify the mantra's importance: girls and women with mental health problems. "If women are perceived as dangerous and a threat [. . .], their labelling as witches, and consequently their destruction, is then seen as justified" (Manjoo 2012). Girls' and women's participation is thus made impossible by denying them their right to life. As the Special Rapporteur on Violence Against Women, Its Causes and Consequences notes – in describing the possible violations of women's right to life more generally – there are manifold ways to instigate those killings: direct – with a defined perpetrator – but also indirect and passive (Manjoo 2012) (Bullet (sic!) points added for clarity).

The direct category includes:

- *Killings as a result of intimate-partner violence*
- *Sorcery/witchcraft-related killings*
- *Honor-related killings*
- *Armed conflict–related killings*
- *Dowry-related killings*
- *Gender identity- and sexual orientation-related killings*
- *Ethnic- and indigenous identity-related killings.*

Some of these may be the result of a girl or woman being perceived as having a mental illness – such as sorcery and witchcraft-related killings as well as gender identity–related killings. Those violations of the right to life intentionally perpetrated by the State should be added: the death penalty for persons perceived as having a mental illness (Kari 2016).

The indirect category includes:

- *Deaths due to poorly conducted or clandestine abortions*
- *Maternal mortality*
- *Deaths from harmful practices*
- *Deaths linked to human trafficking, drug dealing, organized crime and gang-related activities*
- *The death of girls or women from simple neglect, through starvation or ill-treatment; and deliberate acts or omissions by the State* (Manjoo 2012).

Harmful practices encompass a wide range of human rights violations. The African Union Protocol on the Rights of Persons with Disabilities in Africa notes it as "behaviour, attitudes and practices based on tradition, culture, religion, superstition or other reasons, which negatively affect the human rights and fundamental freedoms of persons [with disabilities] or perpetuate discrimination" (Article 1 para e).

Cognizant of the fact that the application of human rights prior to birth is not covered by United Nations human rights obligations, the gender violence pre birth should be noted in the context of indirect categories: female infanticide is a – growing – fact and, among others, sends a clear message of male dominance, power, and destruction (Sen). There are both direct and indirect mental health implications for pregnant women as well as for girls growing up in societies that enable such proceedings. The "socially constructed right to [kill]" (Manjoo 2012) sends a chilling effect into efforts to break the mold and attain access to all spheres of life and thus enjoy the right to participation unobstructed and meaningfully (Perinatal Section 3, Violence Against Women Section 5).

Right to Health

Based on the World Health Organization's Constitution, the "right to the highest attainable standard of health" has been recognized in a number of United Nations' treaties as well as human rights documents of other fora. The Covenant on Economic, Social and Cultural Rights (CESCR) provides the most universally accepted provision on the right to health – Article 12; the CRPD enshrines it in an accessible and inclusive way – Article 25. There is a growing understanding of what the right to health means and implies; among the human rights principles discernible are:

- Right to health care: "At the heart of the right to health is a functioning health system, accessible to all, without discrimination" (Backman and Mesquita 2012).
- Availability: the services provided must be attainable in good quality across the country – including rural areas – for everyone, which includes economic accessibility.
- Affordability: the healthcare system and its services must be provided at affordable cost and for free for those who would otherwise go untreated.
- Accessibility of the built environment at the healthcare facility but also accessible in terms of reaching the venue safely (harassment, hate crimes en route), without obstacles (Monsoon flooded roads) and with affordable transportation.
- Communication accessibility: the right to seek information about one's health and receive responses that are presented accessibly and – where necessary – in accessible formats such as alternative modes and means of communication, without compromising the confidentiality of personal information.
- Acceptability: state-of-the-art medical ethics, gender sensitive, age-appropriate, as well as culturally adequate.

  Quality: scientifically sound and delivered in good quality by health professionals using good-quality medication and equipment in surroundings with adequate sanitation and access to safe drinking water (CESCR, GC Health).

Recently, the World Health Organization reinforced these human rights principles as part of the Universal Health Coverage policy (WHO 2019).

These principles are frequently violated when it comes to the needs of persons with mental health problems, particularly girls and women. One may, as a seemingly random starting point, think of images of alleged mental health patients in utterly under-resourced contexts: most images of persons chained to trees or held in cages are male. The lack of resources only heightens the likelihood of discrimination, ill-treatment, and threats to the integrity of girls and women with mental health problems. Making human rights principles the basis is thus key (Schulze 2016), but as the first Special Rapporteur on the highest attainable standard of mental and physical health, Paul Hunt, has noted: the above is a "minimal list" (Hunt 2016). Accordingly, he adds the following – human rights – obligations to ensure the fulfillment of the right to health for everyone:

- Progressive realization: the principle by which governments have to commit a minimum of resources even if the overall economic situation of their country is challenging; the CRPD (in Art 4 Para 2) makes clear that problems that pertain to nondiscrimination are not to be subject to such progressive approaches but are rather to be fulfilled immediately.
- Maximum available resources: governments have to provide all financial and other support they can; this principle is laid down in Article 2 Para 2 (CESCR).
- International assistance and cooperation: historically framed as an entirely monetary issue, the CRPD provides for a paradigm shift by suggesting this includes the facilitation and support for capacity building, exchange and sharing of information, experiences, training programs and best practices, as well as transfer of technologies and facilitating cooperation in research and access to scientific and technical knowledge.

Adding to the aspect of scientific knowledge: in his 2010 report to the United Nations General Assembly, the Special Rapporteur on the right to the highest attainable standard of physical and mental health, Anand Grover makes the important case for applying positive discrimination – that is, preferential treatment due to aggravated discrimination – to the obligation to share the advances of science (Article 15 CESCR). Distinctly discussing harm-reduction implementation in prison settings, he suggests that services need to be made available even though they may not yet be fully available in the communities (Grover 2010).

Implementing the trifecta of right to health, international cooperation, and scientific advances in a gender-sensitive approach may well alleviate some of the most common experiences of girls and women with mental health problems and, accordingly, foster their participation in line with the SDGs.

Women Have Specific Mental Health Needs

Inequity and inefficiency of mental health resources affect men and women all around the globe. Some important mental health needs as well as barriers to care are gender-specific. Women have specific needs in specific phases of life, for example, the perinatal period, as well as specific risk factors, for example, interpersonal violence and sexual abuse. Developments of women only services as well as the implementation of gender-specific approaches in routine care are underway and need to be improved further and expanded. Training as well as research requirements are numerous and urgent.

Mental health stigma and discrimination interact with gender inequality and the discrimination against women and girls to their mental health detriment. Clinical and scientific responsibilities in mental health essentially include gender-specific attention to the needs of women and girls and their families.

Family carers are an essential mental health resource. A majority is female with significant unmet needs. Family advocacy in mental health is prominently supported by female activists as is the psychiatric user movement. Because of the cumulative and interacting gender-based and other forms of discrimination, regulations such as those following the adoption of the CRPD include specific provisions for women and girls with psychosocial disabilities (Section 6).

In a recent discussion of the right to health framework the Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health discusses the specific circumstances of women in the mental health context, highlighting that

> Multiple and intersectional forms of discrimination continue to impede the ability of individuals, including women and persons from racial and ethnic minorities with disabilities, to realize their right to mental health. Discrimination and inequality are both a cause and a consequence of poor mental health, with long-term implications for morbidity, mortality and societal well-being. discrimination, harmful stereotypes (including gender) and stigma in the community, family, schools and workplace disable healthy relationships, social connections and the supportive and inclusive environments that are required for the good mental health and well-being of everyone. (Puras 2017, 46)

The Special Rapporteur goes on to stress the impact these phenomena have on policy-making: "Likewise, discriminatory attitudes influencing policies, laws and practices constitute barriers for those requiring emotional and social support and/or treatment. Consequently, individuals and groups in vulnerable situations who are discriminated against by law and/or in practice are denied their right to mental health."

He specifically addresses the situation of women with regard to mental health:

> Special attention should be paid to women, who suffer disproportionately from mental health practices that are based on paternalistic and patriarchal traditions, inappropriate and harmful gender stereotypes, medicalization of women's feelings and behaviour, and coercion. Women who have suffered from violence and inequalities within their families, communities and societies, and who have mental health conditions very often face situations in mental health settings that amount to violence, coercion, humiliation and disrespect for their dignity. It is unacceptable that after suffering from violations in family and other settings, women suffer from violations again within services that are supposed to promote their mental health. In that regard, it is very important to emphasize that violations of sexual and reproductive health rights have a direct, negative impact on the mental health of women.

Yet another angle on the specificity of women's mental health needs derives from disarmament: Most mine casualties are men, and therefore many indirect victims are women, including widows. The needs of widows have largely been overlooked among efforts to provide assistance for mine/explosive remnants of war (ERW) victims, even though States Parties have obligations under the Mine Ban Treaty and Convention on Cluster Munitions to ensure that the rights and needs of mine/ERW widows are met in accordance with relevant international law. There is little information about how States Parties themselves are meeting those obligations. A lack of accurate and usable disaggregated data is among the barriers to effective victim assistance for widows (ICBL).

Capacity as the Pillar of the Right to Act

Equal participation for girls and women with mental health problems requires different forms of capacity. Most fundamentally, the legal capacity to be recognized equally before the law as persons who have the right to exercise their legal capacity needs to be established. The Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) draws this important distinction between the written word and the practical application of girls and women making their own informed decisions. Attaining this capacity is no small feat given practices and "traditions" that would counsel otherwise.

With prevailing stereotypes of girls and women's diminished capability to make good on that capacity, it is still frequently disputed and – in terms of the right to *act* the capacity – easily upended. This particularly applies to girls and women with mental health problems: the stereotype that "women are incapable of making medical decisions" (Cook and Undurraga 2012, 318) is frequently overextended to a complete nullification of legal capacity.

Also described as "civil death" (Toledo 2013), the removal of legal capacity strips a person of the core of being a human being endowed with rights: being a subject – rather than an object – and therewith a rights-holder.

Questioning legal capacity takes various forms, many of them are subtle; most of them rely on paternalistic social codes that attribute more weight to the decision-making capacity of men with profound consequences for the participation of girls and women in society. The right to participate in elections, the right to stand for elections, the right to hold and manage a bank account, inheritance laws, property rights, and many more distinctly legalistic rights come to mind. In addition, there are the very many ways in which women's decision-making is ridiculed and invariably found to be inadequate and therefore gutted, largely by patriarchal customs, "norms," and practices.

International human rights norms recognize the right to legal capacity and – in some instances specifically the right to act that capacity. The pronoun "everyone" in the Covenant on Civil and Political Rights (CCPR, Article 16) has, as Amita Dhanda observes, an "all inclusive ambit" (2012). Its origins are more closely connected to the aftermath of colonialism – particularly racism – than any other of the many exclusionary tendencies of societies. Dhanda rightly exhorts the lack of feminist perspectives in these regulations: these "so called universal norms are male values in disguise" (Dhanda 2012).

CEDAW then recognizes the legal capacity of women and adds the important right to also act that capacity. The social prerequisites for the right to act legal capacity are numerous, particularly when it comes to capabilities: there are so many pinpricks that send a message of incapability, an incapacity to render a judgment, an inability to make a decision. These are reinforced and perpetuated in institutions dominated by male perceptions and outlooks, practices, and customs. In many cases the result is a learned helplessness that needs to be undone and rehabilitated.

The label of mental health problems is then the penultimate pinprick in asserting in capacity. The assumption is frequently that there is neither capacity nor capability, making the pertinent provision in the CRPD (Article 12) so central to most any discussion of implementation of the treaty. For girls and women with mental health problems, the nonconforming with social norms quickly makes for a confining of legal rights. The CRPD accordingly shifts the emphasis on the impact of societal perceptions of disability to emphasize that the exclusion and resulting denial of rights is largely due to the reaction to an impairment rather than necessary on account of the impairment. "If the reason for not recognizing legal capacity in some persons with disabilities arises from the practical necessities of social functioning, then it is only correct that such practical necessities have balancing relevance and not trumping status" (Dhanda 2012).

Supported decision-making is increasingly recognized as the state of the art of ensuring the legal capacity of persons with disabilities. With a view to deal with aggravated forms of discrimination, support for girls and women with mental health problems needs to be thought and implemented as broadly as possible: undoing layers of stigma and objectifying personhood requires a plethora of tools in an extensive understanding of "empowerment." Per Grover's suggestion, for positive discrimination, special measures – may be necessary to tip the balance.

By way of example: girls and women with mental health problems are highly likely to experience stigma that in turn is very likely to increase the exposure to violence. Particularly in settings with low coverage of specialized mental health care and corresponding rampant levels of misconceptions of mental ill-health, women and girls with mental health problems are often punished for their illness, too often murdered or gravely injured for their – perceived – illness.

Experiencing violence may in and of itself cause mental health problems and then the expectation of more stigma and the fear of victimization add another level of violence as well as negative impact on mental health that compounds and intensifies the underlying mental health issue. A possible learned helplessness based on gender stereotypes is exacerbated by avoidance behavior(s) fueled in large parts by shame and fear.

Against All Odds: Participation of Women

Many factors contribute to the unequal terms of societies and therewith public space. The participation of women is "stymied by gender norms and expectations that restrict their access to leadership opportunities" (UN WOMEN 2018). Gender norms around participation are largely defined by the dichotomy of the private and public spheres, which continue to be considered distinctly female (private) and male (public), respectively. The private realm is treated as off-limits, and any work performed therein is not considered of much – monetary – value. The fact that violence against women was not discussed as part of the 1979 Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) pointedly summarizes the state of the play on the stronghold that is the "private sphere." Leaving it to engage in the public and stepping over a threshold that is largely defined by male culture and practices is an act of courage in too many instances. The public sphere is respected, anointed with money, and provides a large area for activities, most of which yield at least some form of respect, if not monetary acknowledgment.

Cultural traditions have played a strong part in all this, and increasingly, religion is used as a basis for defining the role of the private and public space, and thus cultural norms and practices are strengthened, which confine women to the private sphere. As the CEDAW Committee has observed: “Even historically stable democracies have failed to integrate fully and equally the opinions and interests of the female half of the population. Societies in which women are excluded from public life and decision-making cannot be described as democratic” (CEDAW Committee 1997).

Female Carers Are Essential Activists

“Despite being foundational to all societies, unpaid care and domestic work is neither recognized as work nor valued,” states the UN WOMEN seminal report on the SDGs (UN WOMEN 2018) (see ▶ Chap. 1, “Women as Caregivers in the Elderly”). The impact of the unequal distribution of this kind of work is described as a “powerful constraint on gender equality,” which in turn has implications for achieving other goals and targets in the SDG framework (UN WOMEN 2018).

The family carer burden on relatives of persons with mental health problems is considerable. It is higher in women than in men. Data keep showing considerable unmet needs of families. It is higher when caring for parents, spouses, and children than siblings. It is “vital to develop effective interventions that support family caregivers” (WHO WMH survey, Viana et al. 2013). In Europe, the typical family caregiver for a person with severe mental illness is female (80%) and around 60 years old, 76% taking care of a son or daughter, 7% for a brother or sister, and 10% for a partner or spouse spending an average of 22 h each week caregiving (C4C, EUFAMI 2015). There is some information on specific women family needs. Mothers of daughters and sons living with schizophrenia report a higher burden and higher needs than fathers (Wancata et al. 2008). Daughters of mothers with schizophrenia suffer from lower quality of life, associated mainly with resource loss (Alkan et al. 2016).

Support for families works. It improves the caring experience, reduces carer burden, improves the quality of life of family carers, enhances an essential resource for patients, improves the course of illness, and through all the above ensures great financial savings for the public (Yesufu-Udechuku et al. 2015). However, “the continuous support of relatives of . . . people (with longstanding mental illnesses), has been neglected in many places and is almost exclusively the responsibility of self-help groups” (EUFAMI, C4C, Global report 2015). Thus, to this day most help for families comes from self-help and peer support, much of which is provided and organized by women. Also, the highly effective advocacy efforts with respect to mental health care and destigmatization have come about through the leadership of many formidable mothers, sisters, daughters, and other highly engaged women.

The Self-Advocacy Movement Is Shaped by the Engagement of Women

Historically as well as to date the movement of users, ex-users, and survivors of psychiatry has been shaped by the engagement of women, who gave voice to the lived experience and advocate and accomplish participation and change. Among those, who lent their personal experience as evidence and basis for the model development of empowerment and recovery-orientation, eminent women stand out. Examples include Pat Deegan, Laurie Ahern, Helen Glover, and Mary Ellen Copeland (Amering and Schmolke 2009).

The Wellness and Recovery Action Plan (WRAP), developed by Mary Ellen Copeland, not only made it on the SAMHSA's (Substance Abuse and Mental Health Services Administration) National Registry of Evidence-Based Programs and Practices in the USA, but has been translated into many different languages and used around the globe. In her text "Remembering Kate – A Story of Hope" (www.mentalhealthrecovery.com), Mary Ellen tells the story of her mother, who became ill at the age of 36, when Mary Ellen was eight. Her mother spent the next 8 years in a State mental institution diagnosed with a severe manic-depressive condition. The doctors said that she was incurable and would never recover. Against all expectations, the mother did recover and stayed well until her death at the age of 82. Mary Ellen assumes that one reason for her mother's improvement might have been the attention she received from a volunteer intern and another hospital worker, who had developed a particular interest in this patient. Some of the mothering time she had lost with her own children, she devoted on very needy kids. Her social net of mutual supports kept expanding; by the time she reached her old age, she was embedded in loving relationships in her community, with friends, and a large family with 24 grandchildren and 19 great-grandchildren.

Such experiences across generations also shape the engagement of the World Network of users and Survivors of Psychiatry exemplified by their Submission to the Committee on the Rights of the Child for General Comment on the Right to Health (www.wnusp.org) and their statement on the fact that "Some of our members experienced the mental health system as children, including severely traumatizing and invasive interventions such as electroshock. . .."

Bhargavi Davar, eminent feminist and mental health activist and researcher from India, draws from her own choices for her mental health as well as her families' experiences with violence and abuse in the mental health system and covers in her engagement the situation of children in India:

> Indian institutions do admit children. In our community work, we regularly come across children who have been given shock treatment from the age of 6, and not just once, but many times through the childhood. Yes, I do think we must talk about "inhuman, degrading,

> torturous" treatments and protections from those. Children should not be admitted into mental asylums. In the slums where we work, children with disabilities are indeed kept in physical restraint 24x7. We work with parents and siblings to slowly release them and give them some semblance of humanity. These practices are atrocities; yet, the families are so poor that the parents have to go out to eke out a small living... their survival is at stake. We provide the "circle of care" where some volunteers go in and engage the child in activities or play; and counsel the family members to address the human being in the child. We are seeing more and more of children having breakdowns in the early teens. In our work over here, which is largely peer support, counselling, psychotherapies and arts based therapies, we try to establish a "circle of care" for the child. We work with parents to reduce conflict and criticism within the household; reduce the "control /command" environment; practice peace and establish empathy with the child. Where needed, we provide skills to parents and grandparents to give non-violent care."

Another big step regarding participation of persons with mental health problems concerns their involvement in scientific research. Again, in this important new field, significant impact comes from excellent women scientists ranging in their engagement from user involvement in mental health research (Wallcraft et al. 2009) to fostering mad studies (Russno and Sweney 2016). Finally, noteworthy are the women involved in the negotiations of the UN-CRPD (Sabatello 2013) as well as one of the key representatives of the World Network of Users and Survivors of Psychiatry in these negotiations, human rights lawyer, Tina Minkowitz (2017).

The experience of the worst forms of human rights violations, including forced sterilization and the murder of people with disabilities, especially also people with mental health problems, at the time of the Nazi regime in Germany had motivated survivor Dorothea Buck, the most eminent figure in the German user/survivor movement over many decades. She talks about how she "experienced the psychiatric system as so inhumane, because nobody spoke with us. A person cannot be more devalued than to be considered unworthy or incapable of conversation" (www.bpe-online.de/english/dorotheabuck.htm). This very notion brought about that in the 1980s Buck shared her ideas about the need to prevent such inhumane conditions with Thomas Bock and Ingeborg Esterer and that is how the Trialogue was born (Bock et al. 2000).

"Trialogue" stands for communication among and between the three main groups of individuals who deal with psychiatric problems and disorders and with the mental health system – people with experiences of severe mental distress, family members/ friends, and mental health professionals. Trialogue encounters occur under special conditions – outside familial, institutional, and therapeutical hierarchies and clinches. Trialogue group participants meet on neutral ground and communicate on equal footing (Amering 2016).

Trialogue Is a Training Ground for a Participatory Approach

What is true for trying to overcome the silence after a history of horrific crimes and discrimination against persons with disabilities is of course strongly related to the communication between the Trialogue partners everywhere: we need to learn new forms of communications, a language that allows us to interact in a context of nondiscrimination.

Trialogue groups are training grounds for working together on an equal basis. They allow interactions between "experts by experience" and "experts by training." Trialogue groups teach many of the skills urgently needed in order to make use of the mandated communications and collaborations between mental healthcare users and user activists, family carers and friends, and mental health professionals and policy makers outside and beyond traditional clinical and pedagogic encounters, which are needed to strengthen a participatory approach in the field of mental health and further civil society involvement. Trialogue groups are training grounds for working together on an equal basis.

Trialogues offer new possibilities for gaining knowledge and insights and developing new ways of communicating beyond role stereotypes. The knowledge of a large part of the community that is currently often hidden – namely that of families and friends of people with mental health problems as well as the expertise of those who are dealing with or have overcome such problems in their own lives – can be validated and shared for the benefit of all. Trialogues also function as basis and starting point for trialogic activities on different levels – for example, serving on quality control boards or teaching in trialogic teams – and different topics – for example, a task force on stigma busting or a work group on trauma and psychosis.

The Trialogue experience – an exercise in communication between service users, families and friends, and mental health workers on equal footing – is indicative of our capacity for surviving and gaining from serious discussions of adversities, such as coercive intervention, as well as the great possibilities of cooperative efforts and coordinated action, such as fighting stigma and discrimination.

In German-speaking countries, Trialogue groups are regularly attended by several thousand people. International interest and experiences are growing fast (www.trialogue.co). The first worldwide trialogic effort through the WPA Task Force on Best Practice in Working with Service Users and Carers under the leadership of Helen Herrman within the framework of the WPA Action Plan 2008–2011 published ten recommendations to the international mental health community (Wallcraft et al. 2011). The ten recommendations call for a partnership approach on all levels of mental health policy and care and "*promote shared work worldwide to identify best practice examples and create a resource to assist others to begin successful collaboration.*" In consultation with the Task Force, the WPA Committee on Ethics drafted a paragraph based on these recommendations that has been unanimously endorsed as an amendment to its Madrid Declaration on Ethical Standards for Psychiatric Practice by the WPA General Assembly in 2011.

Currently, Trialogues need to devote special attention to new roles and responsibilities arising from the historical challenge of the UN-Convention on the Rights of Persons with Disabilities for mental health professionals, users of services as well as relatives and friends.

Actual developments regarding new rights to patient autonomy as well as new entitlements for support for living in the community including the right to family life, reasonable accommodation, and supported decision-making warrant a partnership approach in order to have a positive real-life impact.

Participation as a Human Rights Obligation

Participation, also in human rights terms, is frequently associated with and strongly tied to the right to vote and be elected: the very basis of democratic processes and constitution. Therefore, most any reference to participation immediately links up with the pertinent provision in the Universal Declaration of Human Rights. Participation of women shows how embedded the rituals and practices of exclusion and inclusion are that define participation in a broader sense: it is all about the ways and style in which a person or a group of persons is considered, listened to, taken seriously, and genuinely involved in the fabric of society. Zooming in on the participation of girls and women with disabilities it may well be summed up with the phrase “inclusion – or being asked to dance.” It is not about being allowed to be present in the room – that is integration – but to be seen and meaningfully involved in all aspects of society without obstacles of any sort. Particularly without attitudinal barriers as the CRPD calls them (Preamble (e) CRPD). Participation at its core is thus about being enabled and empowered to be oneself, speak for oneself, and in so doing live the freedom of stigma.

One of the challenges of participation in the context of the CRPD is that frequently the question of independence and independent-living is conflated: one need not be able to do everything by oneself in order to participate: one may fall back on various forms of support and assistance and live independently, including by having a say and participating in various aspects of society. Accordingly, the CRPD is peppered with references to participation in various meanings. Participation is a red-thread from the CRPD purpose (Article 1), via the General Principles (Article 3) throughout various aspects of life – education (Article 24), rehabilitation (Article 26), living in the community (Article 19) – but also in some of the fundamental aspects of inclusive societies such as accessibility (Article 9) and access to information as part of freedom of expression and opinion (Article 21). Furthermore, the treaty emphasizes the importance of participation in accountability measures such as the monitoring mechanisms at national and international levels (Articles 33 & 34).

The CRPD enshrines the importance of supporting the “development, advancement and empowerment of women and girls with disabilities” (Article 6 CRPD) in order to enable their meaningful participation. The CRPD Committee, in a yet to be adopted General Comment on Participation says clearly that “the denial of equal access to participation of women and girls with disabilities in public decision-making” is one of the areas of great concern (CRPD Committee 2018, 11). Accordingly, the Committee calls for specific support in the representation of women with disabilities: “Organizations of women with disabilities, ensuring the participation of women with disabilities, must also be considered a requisite in consultations addressing specific problems impacting exclusively or disproportionately on women with disabilities, as well as problems related to women in general, such as gender equality policies.”

Describing the diverse needs of participation requirements, the CRPD calls on governments to “actively involve DPOs/OPDs who represent the vast diversity in society, including but not limited to women, children, refugees and asylum-seekers, stateless persons, the LGBTIQ community, persons with psychosocial and/or intellectual disabilities, autistic persons, persons with albinism, persons with hearing and visual impairments, persons with HIV/AIDS, persons with neurological and genetic conditions, Roma and Sinti and other ethnic minority groups, indigenous and rural communities and persons requiring high level of support" (CRPD Committee 2018, 36).

Conclusion

With regard to the performance of unpaid care work, UN WOMEN (2018) observes that taking on the "bulk of this [care] work," women and girls are left with less time for various other problems in life, including political participation. This in turn means that the odds of their being left behind in contemporary development efforts are increased, particularly for those portrayed as more vulnerable such as girls and women with mental health problems.

While current debates around toxic masculinity provide ample ground for critique, they offer a helpful glimpse at what remains to be undone on the verge between public and private spheres to ensure that women can meaningfully participate speaking for themselves in various areas of the public realm. This is particularly true for women and girls with mental health problems, who are likely to depend more than others on the public sphere providing a certain level of "safe space."

States have committed to numerous human rights obligations and other political pledges aimed at ensuring the meaningful participation of women and girls with mental health problems in the life of their communities. The Sustainable Development Goals provide a renewed impetus to reaching that position. The data generated as part of the process of meeting them adds to the urgency of implementation.

Cross-References

- ▶ Challenges in Women's Mental Health: Care in Conflict and Post-conflict Situations
- ▶ Refugees and Asylum Seekers

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Culture and Women's Mental Health

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Anju Kuruvilla and K. S. Jacob

Contents

Abstract

Epidemiological studies across countries and cultures have consistently demonstrated higher prevalence of common mental disorders like depression and anxiety among women. However, psychiatry with its biomedical perspectives employs diagnostic criteria, which uses symptom counts sans context, identifies mental disorders, and suggests individual treatments. The failure to acknowledge the role of the psychosocial, cultural, and economic contexts in producing mental distress and ill health among girls and women in patriarchal societies suggests poor understanding of the complex stressors on one hand and the lack of supports and opportunities available to half the world's population on the other. Psychiatric diagnostic systems should elicit and understand the person's context and take into account the psychosocial and economic stress, supports, and coping while

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and
Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_7

attempting to empower people. Medicine and psychiatry, nested within capitalistic political and economic systems, need to advocate public health approaches to reducing mental distress and ill health among girls and women. All policies and programs should be viewed through the "gender lens" in order to provide gender justice to girls and women in the near future.

Keywords
Mental disorders · Depression · Anxiety · Gender · Women · Mental health

Introduction

Psychiatry, with its biomedical framework, perspectives, and models, postulates central nervous system etiology and pathology for mental disorders, suggests diagnostic criteria, offers differential diagnosis, and recommends psychotropic medication. In addition, biomedical psychiatry, in order to increase the reliability of diagnosis, emphasizes symptom counts, checklists, and operational criteria while dismissing the person's context. Nevertheless, mental health and illness are significantly influenced by environmental and societal factors. Cultural factors have been shown to affect the prevalence, clinical picture, health-seeking behavior, course, and management of mental disorders. This chapter discusses the issues related to culture and women's mental health, distress, and illness.

Women and Mental Ill Health

Literature is replete with evidence that women suffer significantly higher levels of mental distress and ill health. Studies have consistently demonstrated higher rates of anxiety and mood disorders among women than men (Kuehner 2003; Pigott 1999). Depression has been found to be significantly higher in the lives of girls and women living under social adversity and cultural degradation (Patel et al. 2006). Gender combined with poverty further increases the risk of common mental disorders possibly through the experience of insecurity and the risks of violence and physical ill health (Kleinman 2003). Psychotic presentations and eating disorders are also reported to be more likely to develop in women as compared to men following assault of any kind (Jenkins and Good 2014).

The World Health Organization acknowledges higher rates of common mental disorders – depression, anxiety, and somatic presentations – which affect approximately one in three people in the community and constitute a serious public health problem. Unipolar depression is twice as common in women and is much more persistent in women than men (World Health Organization n.d.-a, b).

The World Mental Health Surveys examined time-space (cohort-country) variation in gender differences in lifetime *The Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, across cohorts in 15 countries in Africa, the

Americas, Asia, Europe, the Middle East, and the Pacific (Seedat et al. 2009). A very large number of community-dwelling adults ($n = 72{,}933$) were studied in face-to-face household surveys using standard assessments. Women had more anxiety and mood disorders than men, and men had more externalizing and substance disorders than women in all countries and cohorts. The surveys also documented significant narrowing in recent cohorts for major depressive disorder and substance disorders, which was significantly related to temporal (major depressive disorder) and spatial (substance disorders) variation in gender role traditionality (Seedat et al. 2009).

Women and Physical Health

While there has been significant improvement in the health, education, and employment status of women in many low-income and middle-income countries over time, the health indices for girls and women compare much less favorably with those for boys and men. For example, a detailed analysis of national and regional data for India shows that there are gender differentials in many indices, with data disaggregated by gender, showing far greater improvement for males than for females (Government of India Ministry of Health and Family Welfare n.d.; The Million Death Study Collaborators 2010; Chandran et al. 2002). The perinatal mortality rate, infant mortality rate, and under-5 mortality rate are poorer for girls. There is evidence of feticide and infanticide of girls. They are often malnourished and brought to hospital later in their course of illnesses than boys. The birth of a girl and failure to conceive a boy are significant risk factors for postpartum depression (Jacob et al. 2006). The suicide rate among young women is about three times that seen for young men (Aaron et al. 2004). Violence against women and girls is common. Women and girls have lower adult literacy rates, school enrolment, and attendance figures. The long walk to school with its associated fear for physical safety, the lack of toilets at schools, the small number of women teachers, and the second-class status of the girl child contribute to these lower rates (Chandran et al. 2002).

Social Determinants of Health

It is widely recognized that the determinants of health are social and economic rather than purely medical (Commission on Social Determinants of Health, World Health Organization 2008). The poor health of women, their social exclusion, and the steep social gradient are due to the unequal distribution of power, income, goods, and services in patriarchal societies. The structural determinants of daily life contribute to the social determinants of health and fuel the inequities in health between girls/women and boys/men. Viewing health in general as an individual or medical issue, reducing population health to a biomedical perspective, and suggesting individual medical interventions reflect a poor understanding of issues. Although the short time lag between the (absence of) medical intervention and the health outcomes stands out as causal, it is the longer latent period and the hazier but ubiquitous and dominant relationship between patriarchy and culture which have major impacts on outcome. Failure to recognize this relationship and the refusal to tackle these issues result in poorer health standards of the girls and women. Tradition and culture maintain their stranglehold on inequality. Poverty and social exclusion have a multiplicative effect on the social determinants of health with those at higher risk for diseases also having a higher probability of being excluded from healthcare services.

Sociocultural Risk Factors

There are several sociocultural factors that disproportionately disadvantage women and contribute to their emotional ill health. Patriarchal attitudes that have been prevalent for centuries and continue to exist have contributed to this state with women being conferred a subordinate social status and rank (Commission on Social Determinants of Health, World Health Organization 2008). Sexism present everywhere may manifest differently, for example, in poor countries through the denial of educational opportunities to girls and in more affluent countries in the form of unequal pay and discrimination in the political arena. The interrelated issues suggest that the etiology of many mental health "disorders" in women may be considered the diagnosis of the social situation rather than an ailment of the individual (Jenkins and Good 2014). Sociocultural factors which contribute to mental distress and illness are briefly highlighted.

Employment: Job opportunities are considerably restricted for women despite the improvements over the years. There remains inequality with respect to wages in many areas of employment and arenas resulting in women receiving a lower-income relative to men and women being overrepresented in low-income, low-status jobs (Commission on Social Determinants of Health, World Health Organization 2008). This results in women remaining financially dependent on their spouse or other males. The socioeconomic disadvantage also results in women being unable to access necessary treatment.

Women's work at home, because of its invisibility, is rarely recognized, although they work for roughly twice as many hours as men. Technological progress in agriculture and the shift from subsistence to market economies in many low-income and middle-income countries have had a dramatic negative impact on women, cutting them out of employment as many women are unskilled and lack education (Commission on Social Determinants of Health, World Health Organization 2008). Child labor among girls and unequal wages for women for similar work are common. Working women of all segments of society across countries and cultures face various forms of discrimination, including sexual harassment. Women's work is also socially devalued, and autonomy in decision-making related to their life rarely exists for the majority of women particularly in low- and middle-income countries.

Societal roles: Society-imposed gender-based roles have resulted in women being considered the primary family caretakers, responsible for the care of all others including the children, men, and other dependent members. Given this unremitting responsibility for the care of others, the woman becomes the chronic giver, overworked, and under greater stress (Malhotra and Shah 2015). The personal needs of the woman often remain unmet, as society has deemed their primary responsibility to be toward others rather than to themselves. This constant and intensive caring role can affect the woman's emotional, physical, and social health. Societal expectations of women with regard to their physical appearance result in a greater tendency for body shame, rumination, and eating disorders. In some cultures, the woman is considered responsible for the gender of her child and may be blamed for producing daughters rather than sons resulting in depression in the postpartum period (Chandran et al. 2002).

Multiple roles: Women are often required to juggle multiple roles – they may be mothers, partners, and carers, running a household as well as doing paid work. Even though the number of women working outside the home has increased over the years, this does not relieve them from their domestic duties, which remain invisible, nor does this change their social position significantly.

Health status: The woman's secondary status affects her overall health due to unmet nutritional needs, overwork, lack of adequate rest, and leisure (Jacob et al. 2006).

Violence: The high prevalence of emotional, physical, and sexual violence that women are continually exposed to results in women being in a constant state of vulnerability and subject to negative life experiences. Women are preferentially exposed to abuse such as human trafficking, genital mutilation, forced and early marriage, and honor crimes, which result in significant humiliation and emotional distress.

Decision-making: Making decisions, regarding choice of partner, contraception, timing and number of pregnancies, etc., are often out of the woman's control in low- and middle-income countries which are patriarchal societies (Jacob et al. 2006). The anxiety regarding an unwanted pregnancy can result in significant stress.

Stereotypes: Medical diagnoses are prone to stereotypes. Thus, though a man and woman may present with similar symptoms, the notion that women are more predisposed to emotional distress and depression makes them more likely to earn a mental illness label as compared to a man, when all that the woman is experiencing is a difficult life situation.

Treatment issues: Women are not always taken for treatment of mental illness or may be taken late, contributing to a poorer outcome. She may be abandoned by the spouse and sent back to the marital home, thus, subjecting her to the double stigma of mental illness and marital separation (Jacob et al. 2006; Thara et al. 2003a, b).

Gender Role Hypothesis

A variety of biological, psychosocial, and biopsychosocial hypotheses have been postulated to explain the consistent evidence of higher rates of common mental disorders (depression, anxiety, and somatic symptoms) and the lower rates of substance use in women, which have been documented across countries and cultures. However, the narrowing of gender differences in cultures and cohorts (Seedat et al. 2009) has refocused interest in the gender role hypothesis, which asserts that gender differences in the prevalence of mental disorders are due to differences in the typical stressors, coping resources, and opportunity structures for expressing psychological distress (Pape et al. 1994; Thoits 1986). The different stressors, psychological and social resources and supports, and the different culturally accepted ways of expression between men and women result in differences in mental health, distress, and illness across time, region, and cultures.

Evidence of decreasing gender differences in depression and substance use has been found largely in countries in which the roles of women have improved in terms of opportunities for employment, access to birth control, and other indicators of increasing gender equality (Seedat et al. 2009). Trends in countries in which gender roles have been more static or during historical periods when gender role changes have been small have failed to document a reduction in gender differences in depression or substance use supporting the gender role hypothesis (Seedat et al. 2009).

Explaining the Link

Culture is broadly defined as "shared symbols and meanings that people create and recreate in the process of social interaction" (Jenkins and Barrett 2004). Culture shapes experience, interpretation, and action and influences how people cope with everyday problems and more severe types of adversity. Gender is a dimension of culture and influences illness experience as well as societal roles, rules, and expectations (Jenkins 2004). There are conspicuous gender differences that are found in the patterns of mental distress and illness, many of which are socioculturally determined. According to the World Health Organization, "gender determines the differential power and control men and women have over the socioeconomic determinants of their mental health and lives, their social position, status and treatment in society and their susceptibility and exposure to specific mental health risks" (World Health Organization n.d.-a). This definition makes it evident that, across the globe, women are at a disadvantage.

Gender injustice is often viewed in the sociocultural context and usually in terms of social outcomes. However, analysis of health data clearly documents the importance of gender and its impact on women's health. Women are the largest discriminated group in most countries. This results not just in adverse social outcomes but also unfavorable health outcomes. Social determinants have a significant impact on the health of girls and women. Viewing the health of women in general as an individual or medical issue and suggesting individual medical interventions reflect a poor understanding of problem. Reducing public health related to women to a biomedical perspective is a major error of the public health movement. Tradition and culture maintain their stranglehold on gender inequality. Debates on gender equality are often reduced to talking about culture, tradition, and religion. The prevalent patriarchal framework places an ideological bar on the discussion of alternative approaches to achieve gender justice for girls and women. The failure to recognize this relationship and refusal to tackle these issues result in poorer health standards of girls and women.

The social construction of gender in patriarchal societies is cardinal to understanding mental health and distress (Andermann 2010). Patriarchy in practice is a form of structural violence impacting the lives of woman and responsible for suboptimal and poor social, economic, and health outcomes and gender injustice (Jacob 2015a).

Many psychiatric diagnostic labels currently employed in clinical practice (e.g., major depression, generalized anxiety, panic, phobia, post-traumatic stress disorder) assume pathology within individuals even when the problems are in their social environments. Women living in patriarchal societies face a variety of stressors within and outside their homes. Domestic abuse and violence, sexual harassment, and rape, common in patriarchal cultures and often causal, are ignored by the current classificatory systems, which focus on symptom counts sans context (Jacob 2015b). Women, sexual, religious, and ethnic minorities and lower castes (in the Indian subcontinent) who live under continued threats of violence often receive labels, which pathologizes them rather than focus on the abnormality of their environments and their coping responses to continued and severe threats.

Managing Gender-Related Mental Health Challenges

It is evident that women's mental health is influenced by a variety of sociocultural factors, which need to be addressed in order to effectively deal with the problem, rather than hoping to improve it by focusing solely on the individual's personal or lifestyle risk factors or through pharmacotherapeutic interventions. Psychiatry, despite its biomedical formulations, should examine the context and focus on psychosocial interventions to address psychological, social, and economic stressors, environmental supports, and coping strategies. The medicalization of all psychosocial distress, as currently practiced, needs to be replaced with a more holistic approach to psychiatric presentations in medical practice (Jacob 2010). Diagnostic labels like acute and chronic adjustment problems, which focus on problems of living, environmental stressors, and coping, should be preferred to diagnostic heads like depression and anxiety, which provide an illusion disease. The psychiatric framework should make a theoretical shift from a "diagnosis-drug treatment approach" to a broader framework of "caring for illness," understanding illness in context, and taking care of the person who is sick (Jacob 2010; Jacob and Kuruvilla 2017; Kuruvilla and Jacob 2019). Formulations, which focus on healing, often remain at a subtheoretical level, are learnt by trial and error and require long years of experience, and, consequently, need to be emphasized and theorized. Contexts should not only influence medical and psychiatric practice; they should be able to change its theory (Jacob 2017).

The UN Program on Population and Development and Inter-Agency Task Force (United Nations Population Information Network 2001) has suggested that there are five components that are required for women's empowerment: "improving the women's sense of self-worth; ensuring their right to have and to determine choices; the right to have access to opportunities and resources; the right to have the power to control their own lives both within and outside the home; and the ability to influence the direction of social change to create a more just social and economic order, nationally and internationally."

Education provides women an awareness of their rights and resources, the capability to fight exploitation and injustice, and better chances of economic independence. Effecting changes in societal attitudes so that women can have sufficient autonomy to make decisions that affect their lives; ensuring equal access to employment; providing material resources such as healthcare, adequate food, water, and shelter for them to be able to support themselves; and ensuring that they are able to receive necessary psychological support are important strategies.

The World Psychiatric Association (WPA) has called for the "elimination of violence and discrimination based on sex, age, income, race, ethnic background, sexual, orientation, or religious beliefs" (Stewart 2006). It is imperative to ensure appropriate criminal justice responses to violence against women. Political and legal will is necessary to establish policies that are woman friendly and that address women's mental health needs and concerns while taking into account sociocultural norms that affect them. Interventions that focus on the social and economic determinants of mental health such as social inclusion, access to economic resources, and freedom from discrimination and violence have been shown to improve women's mental health (Kermode et al. 2007). Women with high levels of social support have been shown to be less likely to experience depression (Dasgupta et al. 2013).

While gender equality and justice are among the United Nations Millennium Development Goals, their implementation in many low- and middle-income countries has been slow and patchy. Issues related to gender equality are not adequately mainstreamed in many countries. Discussion of gender is usually confined to Goals 3 and 5, which are gender equality and maternal mortality. Women are cast only in the role of victims, rather than as equal partners in development. The social, economic, and cultural contexts, the most significant predictors of women's health, are barely mentioned.

The spirit of egalitarianism enshrined in many national constitutions per se has not and will not result in equality of social and health outcomes for all people. There is need to change social structures. The many small moments of justice cannot overcome the large contradictions in patriarchal societies. Liberals, by definition, can identify the issues but do not actively seek fundamental shifts in political power or enthusiastically champion changes in social mores. They are also part of the tyrannical social order. Systemic injustice requires much more than a change of heart; it requires changes in social structures. Social injustice is killing people and mandates the ethical imperative of improving the social determinants of health (Commission on Social Determinants of Health, World Health Organization 2008).

Conclusion

Women's well-being is thus "not solely determined by biological factors and reproduction, but also by the effects of workload, nutrition, stress, war, migration" (Van der Kwaak et al. 1991). The origins of much of the pain and suffering particular to women can be traced to the social circumstances of their lives. While it is essential to identify and strengthen existing individual sources of strength and resilience to help women cope in the face of prevailing cultural situations (Scheper-Hughes 2008), to truly deal with the problem at its root requires efforts on a global scale to enhance the status of women. This requires legal and political means to encourage changes in attitudes toward women, to ensure education and economic empowerment and improvement in social and mental health services, and to ensure not only equal opportunities but also on achieving equal outcomes (Scheper-Hughes 2008).

The benefits of making such changes are demonstrated by the decreasing gender differences that have been observed in disorders such as depression and substance use in countries that have provided greater employment opportunities for women, access to birth control, and other resources to help combat stress (Seedat et al. 2009).

Social interventions should form the core of all health and prevention programs as individual medical interventions have little impact on population indices, which require population interventions. The major barrier to mainstreaming gender justice and to scaling up effective interventions is gender inequality based on sociocultural issues (Jacob n.d.). The systematic discrimination of girls and women based on culture and tradition needs to be tackled if interventions have to work. Many researchers and activists are no longer convinced that we can succeed in improving women's health or status unless society attempts to confront its gender bias openly. For too long we have been refusing to discuss women's issues explicitly with society. It would appear that nothing short of a social revolution would bring about an improvement in the health of Indian women.

Many approaches have been suggested. They will all need to include methodologies, which examine, understand, and confront gender discrimination in social, cultural, and religious spheres (Jacob n.d.). Legal solutions enforcing gender justice are equally necessary, and monitoring the implementation of legislation is mandatory.

The magnitude of the inequality related to health is often downplayed even within medical circles (Jacob n.d.). The second-class status of women in many societies persists, and women's perspectives continue to be missing, marginalized, or ignored. There is a definite need to engage communities and the population as a whole in a debate to challenge traditional stereotypes and accepted social norms. Programs to achieve gender equality should not only focus on the provision of equal or greater opportunities for women. They should also concentrate on achieving equality in gender outcomes within a reasonable timeframe. Outcomes, in general, and health outcomes, in particular, are measurable with a much greater degree of accuracy than opportunities.

The United Nations Women's new flagship report, "Turning promises into action: Gender equality in the 2030 Agenda for Sustainable Development" (United Nations

Women n.d.), provides a comprehensive and authoritative assessment of progress, gaps, and challenges in the implementation of the Sustainable Development Goals (SDGs) from a gender perspective. It monitors global and regional trends in achieving the SDGs for women and girls based on available data and provides practical guidance for the implementation of gender-responsive policies and accountability processes. It lays the basis for robust, gender-responsive monitoring of the 2030 Agenda for Sustainable Development. The report:

(i) Shows how gender equality is central to the achievement of all 17 SDGs and arguing for an integrated and rights-based approach to implementation
(ii) Explains gender data gaps and challenges for robust monitoring and establishing starting points and trends across a range of gender-related indicators based on available data
(iii) Provides concrete guidance on policies to achieve two strategic targets under SDG 5 (violence and unpaid care) and outlining how these policies are synergistic with other goals and targets
(iv) Sets an agenda for strengthening accountability for gender equality commitments at global, regional, and national levels (United Nations Women n.d.)

All plans and projects within community programs should be assessed using the “gender lens” in order to achieve gender justice for women (Jacob n.d.). These programs will have to cover the social context of home, school, workplace, law, and politics in order to improve women’s health. There is a need to challenge the normalization of gender discrimination in many countries and cultures. The focus should be on public health approaches to change social and cultural perspectives with the aim of primary prevention of discrimination while continuing medical interventions for early diagnosis and management of the medical consequences. There is a need for aggressive gender justice in order that women can achieve equal health and social status in the near future.

Cross-References

- ▶ Depression, Anxiety, and Physical Morbidity in Women
- ▶ Interpersonal Violence and Perinatal Mental Health
- ▶ Women’s Political and Economic Participation

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Rehabilitation and Recovery of Women with Mental Illness

6

Hareesh Angothu, Prabhu Jadhav, and Krishna Prasad Muliyala

Contents

Abstract

Clinical recovery may vary gender-wise across various psychiatric disorders; however, personal recovery is individual specific and a unique process. There are several gender-specific factors that may determine recovery in the context of women with mental illness such as physical abuse, violence, abandonment, homelessness, stigma, and discrimination. Their access to mental health services

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_38

and legal aid need to improve. Rehabilitative practices are becoming recovery oriented across the world, albeit slowly. These need to be mindful of the rehabilitation needs of women with mental illness. Motherhood, parenting, and work may be important to consider in a rehabilitative plan for women. Consumer movement, peer support, caregiver groups, and nongovernmental agencies will increasingly play a pivotal role in services that are recovery oriented. Gender-sensitive services and practices should be integrated across all levels of rehabilitative care. Institutional, long stay and forensic settings pose unique challenges in rehabilitation of women with mental illness. In this chapter, we examine the influence of these factors on rehabilitation and recovery of women with mental illness. We also briefly provide a case example of policy and legislative changes from a developing country – India – that are important drivers of improving rehabilitative services for women with mental illness.

Keywords
Recovery · Rehabilitation · Women · Mental illness

Introduction

Long before the success with use of psychotropics for severe mental illnesses, rehabilitation for persons with mental illness was conceptualized as means of increasing functionality through various methods besides removal of symptoms, resolution of disruptive anxieties, and intrapsychic conflicts.

The terms recovery and rehabilitation, particularly in the context of mental illness, have been described variously over time that reflects changes in their conceptual understanding. Rehabilitation in general has been defined as “a set of measures that assist individuals who are experiencing or are likely to experience disability, to achieve and maintain optimum functioning in interaction with their environment.” Such measures enable people with disabilities to remain in or to return to their home or community, to live independently, to participate in education, to join labor market, and to participate in civic life (WHO 2011). Psychosocial rehabilitation (PSR) is described as a process that facilitates an opportunity for individuals with impairment and or handicap due to a mental disorder, to reach their optimal level of independent functioning within the community (USPRA 2009; WHO 1996). “Psychiatric rehabilitation is a set of processes which promotes recovery, full community integration, and improved quality of life for persons who have been diagnosed with any mental health condition that seriously impairs functioning. Psychiatric rehabilitation services are collaborative, person-directed, and individualized” (USPRA 2002). We may understand from these definitions that psychiatric rehabilitation is a set of measures which assist individuals with disabilities to lead their life in as independent a manner as possible within the community. It should be based on the strengths, aspirations, culturally acceptable practices, and locally available resources. It consists of a set of measures that is multisectoral involving the patients, their family and caregivers, multidisciplinary team of mental health care providers, various departments of the state such as social justice, labor, health, and law. Psychiatric rehabilitation can be resource intensive, and rehabilitation needs can change over time. Natural systems (e.g., family, community, religious places, healers) are the primary mechanisms of support for individuals in many cultures, and an individually tailored plan of rehabilitation should consider all such available supports.

Recovery is a multidimensional construct. There is no single measure of recovery, but many different measures estimate various aspects of it. Recovery has objective and subjective dimensions that can be viewed along a continuum. Personal recovery, which is distinct from clinical recovery, is described as a unique journey for a person with mental illness wherein the individual will find a new meaning and purpose in life irrespective of limitations and adversities. Clinical recovery more often focuses on remission of symptoms and uses a more objective parameter of change. Personal recovery involves a psychosocial adjustment to the disability itself, the achievement of subjective well-being, some degree of remission of signs and symptoms of the illness, and improvement in instrumental role functioning and community integration (Anthony 1993). Recovery is not an intervention that providers can deliver. Although each recovery journey is unique, in a qualitative study of individual experiences of recovery from severe mental disorders, five phases were identified (Young and Ensing 1999):

- Overcoming stuckness
- Discovering and fostering self-empowerment
- Learning and self-definition
- Returning to the basic functioning
- Improving the quality of life

Very often, subjective experiences such as well-being, sense of having contributed towards others, being valued as a person, and a better sense of purpose in life are important attributes of recovery.

Services offered by policymakers and health systems may or may not contribute to experiences of recovery. Nevertheless, worldwide, there is a greater movement towards providing services that are recovery oriented (Farkas 2007). A recovery-oriented rehabilitative process and service is then expected to foster and enhance personal recovery with an emphasis on person orientation, person involvement, self-determination, and hope (Farkas 2007).

Gender and Impact on Psychiatric Rehabilitation and Recovery

Gender can differentially influence clinical presentation in terms of prevalence, symptoms, response to treatment, course, and outcome. Higher rates of clinical remission and recovery in women have been observed compared to men in schizophrenia and schizoaffective disorders (Carpiniello et al. 2012). However, clinical recovery does not always equate with personal recovery. For persons with psychotic or bipolar disorders, the recovery process begins with the first episode of acute symptoms that often involves medical care and medication as well as a loss of contact with the persons who were there before the onset (Noiseux et al. 2010). Higher rates of depression in women and correspondingly higher rates of disability and impairment and the need for more focused and longitudinal research on various complex factors which may contribute to disability in women with depression has also been reported (Cook 2003).

Women have also been traditionally construed to be vulnerable populations across several societies, which mean they are at greater risk than others to experience psychosocial adversities. The multiple roles that women fulfil in society render them at greater risk of experiencing mental health problems than men in the community (Gajendragad 2015). This may be greater in cultures and societies where there is a large gap in terms of gender parity. The Schizophrenia Research Foundation at Chennai, India, carried out an ethnographic, qualitative study, which sharply brings into focus some issues which confront women in many developing countries. A lack of awareness of the illness and its disabilities results in a widespread belief that marriage is a panacea for all ills. This results in the parents of the ill women arranging their marriages, very often suppressing the fact of mental illness from the husband and his family. There is an absence of legal protection in terms of marital separation including maintenance costs for such women. The burden of care of these women, most often, goes back to the parents, many of whom are aging and themselves sick. The study also reported there is a lack of any state-managed programs, which will offer some kind of physical, sexual, and financial security for such women. Negative attitudes of the husband and his parents and sometimes even the extended family most often hasten the process of separation and sometimes desertion.

Women, in general, are more likely to live with many factors that put them at a significant disadvantage in their later years. These factors include widowhood, financial insecurity, increased risk of poverty, and inadequate social support and health care (Mathew 2016). We will now consider some important factors that are very important to understand in the context of recovery and rehabilitation of women with mental illness.

Physical Abuse and Abandonment

Mentally ill women are commonly victims of sexual violence as well as physical violence. Trauma, domestic violence, sexual abuse, stigma, and victimization faced by women also have an impact on their mental health (Kumar et al. 2005; Chandra et al. 2003). Women who face family violence and other forms of victimization, such as abuse by their family of origin, often end up being homeless.

Despite these, in a survey on issues in the lives of women with severe mental illness, women reported more sexual abuse but better-quality personal relationships in their lives than men. Two-thirds of women reported that interpersonal relationships were important than mental illness-related experiences in their formative experiences (Ritsher et al. 1997). In terms of social contact, about more than half of women with mental illness had no subsequent or very little contact with their children (Dipple et al. 2002).

Homelessness

Homelessness has been considered both a cause as well as consequence of mental illness and disability. Economic problems and housing policy issues may not be sufficient to explain homelessness. Being a woman was observed to be a significant factor predicting homelessness in an analysis of users of resources for homeless people apart from variables like type of mental disorders and problems associated with substance use (Bonin et al. 2009).

A range of issues such as lack of enabling social support systems, family violence, mental illness, and substance use problems may influence homelessness in women in addition to their gender (Bassuk 1993). Factors such as legislation regarding house ownership, social approval for remarriage in spouses of mentally ill women, drug compliance issues, and stigma make women more vulnerable to homelessness (Murthy et al. 2016). Barriers due to symptoms of mental illness, barriers within service delivery systems, and barriers associated with poverty and isolation may add on to gender as a barrier for better access and utilization of services for homeless mentally ill (Craig and Timms 2000; Townley et al. 2013). In a study conducted on homeless people at Baltimore to observe health and mental health differences concerning gender, homeless women were observed to be more likely to have a diagnosis of mental disorder than homeless men (Breakey et al. 1989). The emotional well-being of women particularly with a diagnosis of mental illness may further get compromised in presence of the previous history of child abuse, sexual abuse, family violence, and other traumatic events (Buckner et al. 1993). Homeless mentally ill women are extremely vulnerable to exploitation including sexual abuse, unwanted pregnancy, adverse physical health including infectious diseases such as HIV, and experience loss of dignity. The shelter needs of women from socially disadvantaged sections, pregnant and postpartum women, elderly women, and young women are unique and care will need to be tailored to their needs. Other vulnerable categories include separated or divorced women and women who are victims of domestic violence. In a comparative study on antecedents of physical and sexual victimization in homeless women, mental illnesses like depression and schizophrenia were observed to be the predictors for more frequent victimization (Wenzel et al. 2000). In a similar finding, it was opined that violent victimization in homeless women with serious mental illness is so high that sexual violence and physical battery are normative experiences (Goodman et al. 1995). These findings stress the need for better community-based shelter for homeless women with mental illness. A better framework for evaluation of mental health strategies targeted to homeless persons with mental illness with more gender-sensitive approaches would be more appropriate in providing services to the needy (Hurlburt 1997). In the Canadian setting, access to a shelter was greater for women.

However, mental illness in such women seemed to determine inaccessibility. Problem is further compounded when the ethnicity of homeless women was examined (Kidd et al. 2013).

Poor Access to Health Care Facilities

The help-seeking and utilization of existing treatment services by women with mental illnesses are still low, despite increasing awareness regarding mental illnesses. Stigma and discrimination lead to women with severe mental illnesses being brought late for treatment (WHO 2010). Mental illness in itself may make woman incapable of seeking help for herself.

In a rural Chinese population study, it was observed that greater utilization of psychiatric rehabilitation services was dependent on having a nonorganic disorder and living with a caregiver. Lack of access, lack of money, and poor belief on services were observed to be the reasons for non-utilization of such services. It seems gender did not play a significant role in availing of such services within this population (Luo et al. 2018).

Legal Rights and Mental Illness

A comparison of mental health legislation from the commonwealth countries revealed that there is a widespread deviation from standards with inadequate protective measures and policies for the rights of persons with mental disorders (Fistein et al. 2009).

Mental illness, irrespective of the severity, has often been cited as one of the reasons that deprive a woman of her basic human and civil rights. The basic human rights concerning individuals' survival with dignity have to be ensured in all situations, but the scenario in case of mentally ill women is still far from optimal. A mentally ill person's capacity to sign any document of sale, purchase, lease, or any contract is often questioned. However, the rights are not as clear as to an individual's competence during the lucid moments/stabilized stage. Otherwise too, women face difficulties in exercising their rights, and in instances where women have a mental illness, their family members may take undue advantage of the legal clause to deny them property rights (Khan and Chithiramohan 2016).

Stigma and Discrimination

Women are more likely to seek help from their primary health care provider for psychological disorders, whereas men with mental health problems are more likely to seek specialist services and inpatient care (WHO 2010). Stigma towards, and discrimination against, women with mental illness is an important barrier to mental health service utilization. It contributes to delays in seeking care, serves as an impediment to recovery and rehabilitation, and ultimately reduces the opportunity for fuller participation in life. There is a need to generate an evidence base for context-specific interventions that will address negative attitudes towards people with mental disorders and ensure implementation of these interventions by involving users, caregivers, community health workers, and mental health service providers (Shidhaye and Kermode 2013).

Rehabilitation Needs of Women with Severe Mental Illness (SMI)

In accordance with the principles of psychosocial rehabilitation, assessment of strengths, deficits, and determination of individualized goals is integral to a rehabilitation approach in women with mental illness (Mowbray et al. 2003).

The EPSILON project (European Psychiatric Services: Inputs Linked to Outcomes and Needs) reported that women have more unmet needs in the domains of "childcare" and "harm to self," whereas male patients have more needs in the areas of "harm to others," and "substance misuse" as assessed with the Camberwell Assessment of Need. There were no gender differences in needs for "accommodation," "psychotic symptoms," or for "sexual expression" (Thornicroft et al. 2002). However, another Indian study did not find any differences between men and women in their rehabilitation needs as measured with the Rehabilitation Assessment Schedule (Nagaswami et al. 1985).

Special attention while assessing the rehabilitation needs of women may be required in the areas of self-care, communication skills, stress management, relationship skills, vocation/education, peer support, and substance use.

There are some other factors that are very important and may be unique to the role of women in the sociocultural context.

Role of Parenting in Recovery

Parenting is related to several recovery-related concepts in women with mental illness. Firstly, parenting gives a lot of satisfaction and is a rewarding experience for women with mental illness. Secondly, hope and optimism have been noted with parenthood. Parents with severe mental illness are more hopeful than nonparents with severe mental illness. Hope has been noted to be an integral component of recovery (Bonfils et al. 2014). Women with a mental illness who become mothers will have to parent in high-risk conditions: they are more likely to be single mothers, they tend to begin childbearing early in their lives, are likely to live in poverty, and they are more likely to experience family strife and victimization (Mowbray et al. 2001). Mothers with SMI have reported that the dual demands of parenting and coping with the mental illness as considerable and was associated with apprehension of adversely affecting the lives of their children. In the same study, mothers described widespread beliefs about women with mental illness being parents and the associated stigma. There was fear that talking about the challenges with parenting may result in loss of access to children or that they may lose child custody. A systematic review of available interventions for mothers with mental illness from a psychosocial rehabilitation framework revealed that though most such interventions incorporated few PSR principles, none reflected all principles. This review had highlighted the need for incorporation of three components for better PSR of mothers with a mental disorder (Oyserman et al. 1994):

1. Assessment of the mother's environment
2. Assessment of mother's strengths
3. Assessment of barriers to program participation and attainment of parenting goals

For generating evidence-based psychiatric rehabilitation practices for mothers with mental disorders, there is a need to create innovative research designs. Outcomes of these innovative designs must reflect changes in functioning with relevance to the targeted domain like parenting. Measures such as satisfaction, sense of competence, knowledge, and attitudes may not be enough for parents with mental illness. Multidimensional scaling methods and mothers perceived achievement of goals could be considered as alternatives. Women diagnosed with SMI such as schizophrenia, bipolar disorder, and other major affective disorders receive inadequate support from mental health care providers and from the society which eventually hinders recovery (Mowbray et al. 2001; Nicholson and Henry 2003). There is data regarding the effectiveness and outcome of the programs on helping parents with severe mental illness. Supported parenting, analogous to supported employment, aims to provide mothers diagnosed with SMI with a range of instrumental, emotional, and social assistance so that they can fulfil their parenting responsibilities to their fullest potential. Supported parenting interventions will be necessarily complex in their design, incorporating elements intended to foster the well-being of both mothers and children simultaneously (David et al. 2011).

In the context of the postpartum, motherhood and childbirth are central to the onset of postpartum psychosis, and the infant is also central to recovery from postpartum psychosis. A Mother Baby Unit (MBU) seems to be the ideal setting to provide holistic support and care that activates the baby's helping role in recovery. The MBU, as a secure setting for mothers and their babies, simultaneously reduces and enhances the mother's neurological threat and soothing systems, respectively (Gilbert et al. 2013). It is plausible that the reduction of the threat response reduces safety behaviors (such as avoidance) and facilitates further engagement and subsequent recovery (Plunkett et al. 2017).

Another important finding is that the baby can be experienced as both helpful and unhelpful to recovery. The baby may be experienced in these two different ways at different points in recovery. Alternatively, findings suggest that the two overarching roles may not be mutually exclusive and may be experienced simultaneously; this illustrates that although the baby's role is important to recovery, it is a complex one (Plunkett et al. 2017). Furthermore, support from the family is essential to recover from postnatal mental health problems. Though PRS principles are based on individual strengths irrespective of gender, disability, or diagnosis, there are a set of areas, for example, in motherhood and parenting, wherein more gender-sensitive approach has to be taken into consideration by the rehabilitation agencies for women with severe mental disorders (Mowbray et al. 2003).

Motivation to Work in Women with Mental Illness

Historically, women were engaged in unpaid work at home, whereas men were earning money in the formal employment market. A gendered occupational pattern such as this has been explained in terms of the specialization theory, stipulating that women and men maximize the use of their human resources in this way and achieve the greatest possible benefit for their family. The idea of specialization appears to permeate the gender division of paid and unpaid work even today, with women (Becker 1991). Another explanation for gender-segregated labor markets is captured in the term statistical discrimination; since women tend to take on most of the responsibilities for home maintenance and childcare, they get discriminated in the labor market, regardless of their actual obligations at home and work (Ferrarini and Duvander 2010). A cross-sectional study from Sweden reports that women were more motivated to attend day-care center than men, whereas no gender difference was identified concerning the motivation for employment (Eklund and Tjörnstrand 2013). Vocational challenges that women with SMI may face in sustaining employment may include quitting paid work to take care of their home, parenting, and restriction in choice of jobs because of gender stereotypes (Thomas et al. 2019).

Long Stay Homes and Institutionalization

Women with mental illness may endure long-term institutionalization in closed settings due to financial issues, familial rejection, stigma, and discrimination mainly in LAMIC countries (Patel et al. 2007). Due to lack of adequate facilities, these women end up staying in governmental and nongovernmental shelter homes or centers (Moorkath et al. 2018). There is a clear-cut gender difference in reintegration with family or community (Dean Klinkenberg and Calsyn 1998). The alleged sexual abuse of more than 20 women in a shelter home for women in Bihar state of India and consequent identification of deficits in the system of shelter home care for women provided by the State perhaps reflects the gloomy picture of sheltered care for women in low- and middle-income (LAMI) countries (India Today 2018).

The above issues may be addressed at different levels including at the institution, community, and family, particularly in the LAMI countries. At institutional level: Discouraging admissions in closed settings, making women aware of their rights, having a standard operating protocol for homeless mentally ill women, and opening of sheltered homes for those who have recovered from mental illness with access to independent human rights organizations. At family or individual level: To provide accessible and subsidized treatment, provision of government welfare benefits, support from the National Commissions for Women/State Commission for Women to protect women with mental illness in case of abuse or gross neglect. At the community level: Establishing women's respite/halfway home/rehabilitation facilities, day-care centers, shelters for women with mental health needs, and training in income-generating skills-based activities (Hanlon 2017). All methods of community-based and home-based rehabilitation need to be exhausted and long stay homes should be the last resort.

Recovery of Women in Institutional Care

Findings of research on the impact of psychiatric institutional care on the recovery process are complex and highlight many gender-based issues (Sajatovic et al. 2000; Schön 2010). A qualitative study in 2013 confirmed gender differences and similarities during compulsory psychiatric institutional care. Despite structural inequalities, female gender norms supported the recovery process, with women focused on making sense and meaning in the process of recovery, whereas men were more focused on symptom control and occupation. The analysis revealed four dimensions of the impact of compulsory inpatient care on recovery: ambivalence, experiences of oppression, absence of treatment, and medication (Schön 2013). Factors essential to the recovery process include interpersonal relationships, an inclusive environment, and interventions aimed at rebuilding a positive social and personal identity (Tew et al. 2011).

With regards to women prisoners having mental illness, more gender-sensitive approaches are suggested for rehabilitation and recovery. Such approaches are suggested across all three phases. Initial phase following conviction during incarceration and prior to community reentry (McPhail et al. 2012). Positive perception related to treatment experience and better in-treatment performance was observed as beneficial effects in women offenders with mental health problems when gender-sensitive components were added to a standard mixed-gender approach (Messina et al. 2012). These again highlight the need for incorporation of gender-sensitive strategies while planning of any rehabilitation programs or plans for persons with mental illness to aid in recovery.

We will now examine some progressive changes in the context of recovery of women with mental illness.

Consumer Movement and Recovery-Oriented Services

Mental health consumer movement that began in the early 1980s in the United States has led to many changes like consumer-run peer support programs, development of recovery wellness centers, consumer partnership with policymakers, and health professionals for designing services. The focus of the movement was to shift from a passive sense of helplessness to an active phase, not just operating for oneself but for other service users, too. It is interesting to note that the beginnings of the mental health consumer movements coincided with other movements related to women, gay rights, and disabilities (Gehart 2012). When women with mental illness were interviewed as consumers in Vermont, the need for gender sensitivity for conceptualization and better reach of consumer-driven services for women with mental illness was reported (Cogan 1998).

Community Connections (Washington, DC) set up a Women's Empowerment Center (WEC) as an intentional recovery community. The individual mission of the WEC was to create a community of peers and professional helpers that fostered the development of social support, self-esteem, and a sense of belonging – a place where social skills could be learned and where voice and agency could be developed in a safe, healing environment (Whitley et al. 2008).

Service providers should also strive towards creating recovery-oriented services across all levels of care. Using outcome measures of recovery that focus on personal recovery such as the recovery star developed by mental health providers forum has been found to be useful to service users, staff providing services, and organizations to monitor progress. Addictive behavior, identity and self-esteem, living skills, managing mental health, relationships, responsibilities, self-care, social networks, trust and home, and work are the ten areas which are used for assessment as part of this recovery star and a ladder of five stages is used for each of these areas for rating (Larivière et al. 2015). Use of such patient-rated may facilitate collaborative care planning (Dickens et al. 2012; Killaspy et al. 2012; Lloyd et al. 2016). A gender-sensitive group intervention – Women Empowerment – Recovery-Oriented Care (WE-ROC) for women with serious mental illnesses – in a pilot study has reported improvement in peer support and self-esteem (Mizock 2019).

A Brief Case Study of Recent Policy and Legislative Changes in a LAMI Country: India

Lack of mental health policies and mismatch between high needs and persistent scarcity of workforce and infrastructure for mental health services have been observed to be challenges in health care delivery in many low- and middle-income countries (LAMIC). Cultural variables like the greater role of the family and the availability of culturally acceptable alternative forms of treatment have been described as important in mental health care delivery in LAMIC (Rathod et al. 2017).

The recently conducted National Mental Health Survey reported that of the 150 million people in urgent need of psychosocial rehabilitation services, 70 million are women (Gururaj et al. 2015–16). Mixed-gender approaches for rehabilitation are less likely to be useful for women, given their different needs, requirements, and vulnerabilities. The legislative landscape has been significantly transformed by the RPWD Act 2016, which was enacted to give effect to India's obligations under the United Nations Convention on the Rights of Persons with Disabilities, 2008 ("UNCPRD"). The RPWD Act 2016 adopts a "twin-track" approach by incorporating specific provisions for women with disabilities while also addressing their vulnerabilities. Most identity-based legislations in India on women, children, or persons belonging to backward classes are fragmented responses to identity-based discrimination. However, the RPWD act is an omnibus legislation that protects against discrimination and violence, and recognizes their civil, social, economic and cultural rights for persons with mental illness. It also provides legislation for a monitoring authority and a special court to try offences against persons with disabilities (RPWD Act 2016). Another legislation followed that addressed the rights of persons with mental illness. The Mental Healthcare Act, 2017, which reflects a rights-based approach towards persons with mental illness, provides "mental healthcare and services for persons with mental illness." It also seeks "to protect, promote and fulfil the rights of such persons during delivery of mental healthcare and services."

Many rehabilitation services available in India as of now are secondary to the provisions of the Persons with Disabilities (PWD) Act 1995. In spite of a large number of women who would require a gender-sensitive psychiatric rehabilitation approach, policies for rehabilitation based on PWD Act 1995 were more or less gender-neutral. Most of such services are meant mainly for persons with physical disabilities and persons with intellectual disabilities. There were no explicit rehabilitation services for persons with mental illness for any gender. Following the enactment of the Mental Health Care Act 2017, India is in the process of identifying the range of needs of women with mental illness in psychiatric hospitals. It appears that hundreds of women with mental illness are still staying in many tertiary care psychiatric hospitals for more than few years not because of illness but because of lack of alternate social and economic support systems from appropriate government agencies. Though the Mental Health Care Act 2017 puts the onus on the government to provide a range of acute care and rehabilitation services for women with mental illness, considering financial and trained human resource constraints, it remains to be seen how such a challenge would be dealt with over a period of time.

Mental Health Care Act 2016 enacted by India has been hailed as progressive and rights-based. Explicit mention of protective and supportive mental health care for women, mention about needs of women such as reproductive rights, and supports required for parenting are mention worthy. Specific mention of a gender-sensitive procedure to be adopted for women with mental health problems under section 20 and 21 of this Act, in case of emergency and mention of safeguards to protect the child custody rights, is a welcome step to ensure optimal and rights-based care for women with mental illness. State-supported shelter homes such as "Swadhar Greh" for homeless women in the community and several nongovernmental organizations run homes, for example, "The Banyan" for homeless mentally ill women, are few of the credible endeavors to meet accommodation and other basic needs (Nalini Rao 2005).

Conclusions

Rehabilitative practices in mental health refer to the coordinated multisectoral approaches to care offered to persons with mental illness, whereas personal recovery is an individual journey or process. Administrators and mental health professionals should have an in-depth understanding of the factors that differentially affect the rehabilitation and recovery of women with mental illness. Gender-sensitive care recognizes that women and men may experience mental health problems and illnesses differently and considers sensitivity and safety in service design, workforce development, policies, and procedures. This becomes important in developing tailor-made plans for the rehabilitation of women with mental illness. Some recent developments such as the evolution of consumer movement, development of recovery-oriented services, and progressive legislative changes in developing countries augur well, yet the progress is far from satisfactory.

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Challenges in Women's Mental Health: Care in Conflict and Post-Conflict Situations

7

Unaiza Niaz and Qudsia Tariq

Contents

Abstract

Women usually do not pledge wars, but they do suffer profoundly from the penalties. Conflict spurs much higher rates of violence and traumas. It renders women acutely vulnerable to sexual abuse, poverty, and the loss of employment

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_4

and the destruction of assets such as homes. Essential health services crumble, underlined by high mortality rate in conflict and post-conflict countries.

This chapter focuses on the challenges faced by women in the underdeveloped countries who had experienced war and terror for a long time and are at present struggling through their economic crisis and survival. It would be addressing the gender-based violence issues, the role of women in politics, and their rights to justice, education, and health-care services. It would also be addressing the biggest concern or aftermath of war like sexual violence and mental health and the stigmas attached with it.

Keywords
Gender based violence · Healthcare services · Mental health stigma · Sexual violence

Introduction

Globally, women are a vulnerable population in society. Conflict exacerbates this vulnerability and places women at risk of violence, sexual assault, and trauma. These are old truths which overwhelmingly continue today with impunity. The United Nations, the United Nations Security Council, and other international bodies for decades have passed resolutions, statements, and other binding agreements condemning violent acts against women. Today, women's vulnerable status during times of conflict, and their invisibility in policy decisions in the post-conflict setting, continues without repercussion or accountability.

The United Nations Security Council Resolution 1325 passed in 2000 recalls past resolutions and commitments pertaining to the protection of women during times of conflict and reaffirms "*the important role of women in the prevention and resolution of conflicts and peace building*" (United Nations Security Council 2000). Resolution 1325 calls on member states to "*ensure increased representation of women at all decision-making levels in national, regional and international institutions and mechanisms for the prevention, management, and resolution of conflict*" (United Nations Security Council 2000). This resolution stresses the importance of incorporating women, and women's perspectives, into all governing structures and decisions relating to times of peace, conflict, and post-conflict.

Diaz (2001) identifies three main ways in which gender differences manifest in all societies: (1) *gender roles, the activities and behaviors which are expected of women and men in social and economic life, for example*, *the division of labor between women and men*; (2) *social institutions, the family, marriage, the state, and other institutions that ensure that people comply with these roles; and* (3) *cultural institutions and practices such as religion, the media, language, literature, history, etc*.

Gender issues cut across all segments of society, not considering political, economic, or social context, and this is no different to situations of political violence and armed conflict (Moser and Clark 2001). Debates on gender issues in situations of war often present women as victims, in particular, of sexual abuse and forced abduction, while men are presented as perpetrators or defenders of their nation and communities. "*Women and children*" are often classified as one category as civilians, while men are often classified only as combatants.

Gender inequality is magnified in situations of war, and women are disproportionately disadvantaged in terms of personal safety, access to resources, and human rights. This article summarizes the effects of armed conflict on women and women's greater vulnerability to health and mental health concerns because, in war, women's bodies become a battleground.

Challenges Faced by Women During Conflict Situations

Today Middle Eastern and South Asian countries are torn by war and armed conflict, giving rise to an infinite torrent of refugees and internally displaced persons.

Conflict-related violence against women and girls has been referred to as "*one of history's great silences*" (Special Rapporteur on Violence Against Women 2005). Although overall more men than women are killed in armed conflict, women and girls are disproportionately affected by particular types of violence, such as sexual and gender-based violence, and other consequences of war, including displacement and loss of livelihood. Women, who are affected as victims of violence in times of war and civil unrest, suffer further in respect of their unmet needs for health care, particularly reproductive health care.

The representatives of agencies providing assistance in crisis situations and representatives from affected countries must develop a framework for an appropriate inter-agency response. This response must provide a holistic plan to adequately meet the health needs of women victims of violence during and after armed conflict and the health needs of women coming from emergency situations into host countries.

It is vital to recognize the extent and prevalence of violence against women in situations of armed conflict as there is urgent need to take concrete action against it. This highlights the significance of setting up remedial measures, such as counseling services, besides the need to address initial research methods and data collection and to ensure gendered analysis of violence in conflict situations.

The role of health professionals in addressing violence against women is imperative. Mental health professionals are trained to identify and recognize coping mechanisms and protective factors which assist individuals, families, and communities to deal with the trauma that is necessary to initiate interventions that can minimize the long-term damage.

Several types of sexual violence and abuse occur during conflict and mass displacement, from random acts of sexual assault to rape as a deliberate weapon of war. Young girls are often selected for rape, as they are expected to be less likely to be infected by HIV/AIDS. Children often witness family members being tortured, raped, and mutilated, which can be a major cause of trauma in them. Research studies to determine the relative burden of a combination of factors, resulting in increased incidence of abuse in the period of family disruption and crises.

Post-conflict countries present obstacles to women's personal, public, and private lives. Addressing these challenges can positively impact individual lives and the societies in which they live. The lives of women within countries and across the globe differ greatly, and the challenges an individual woman faces might vary depending on a variety of factors. Most of our challenges are in relation to the non-affluent women living in post-conflict countries.

Gender-Based Violence

A common and prevailing issue within all the case studies is the widespread violence perpetuated against women. Gender-based violence is violence targeted at individuals or groups on the basis of their gender. Gender-based violence is often divided into two interlinked categories, interpersonal and structural/institutional violence. Interpersonal violence refers to an act of economic, sexual, psychological, or other violence perpetrated by an individual against another individual. Structural/institutional violence refers to any form of structural inequality or institutional discrimination that maintains a woman in a subordinate position, whether physical or ideological, to other people within her family, household, or community (Governance Social Development Humanitarian Conflict 2013). Women who suffer this violence hardly ever have access to or seek justice.

In recent years, more information on sexual violence and other gender-based violence has been made available (Meertens 2012). Displacement is one of the factors that cause sexual violence. A social-judicial analysis of the conflict in Colombia provides evidence that sexual violence remains systematic and constitutes a general pattern. The joint submission highlights (1) sexual violence against internally displaced women; (2) forced recruitment and sexual slavery during the internal armed conflict by the Fuerzas Armadas Revolucionarias de Colombia (Revolutionary Armed Forces of Colombia – FARC) and by members of the now demobilized paramilitary organizations; and (3) the state's failure to investigate, punish, and prevent reported cases of sexual violence and enforce the recent legislative measures (European Center for Constitutional and Human Rights).

Due much in part by the "*reign of terror*" perpetrated by Charles Taylor, Liberia suffers from a culture of violence in which rape and sexual violence are prevalent and accepted by large portions of the population. It is estimated that the proportion of women who experienced sexual or gender-based violence during or after the second civil war is between approximately 80% and 93% (Omanyondo 2005). In 2006, rape remained the most frequently reported crime in Liberia (Consolidating Peace and National Recovery for Sustainable Development).

In Nepal as in many Asian countries, the prevalence of violence against women is high and its consequences severe. In 2011, Nepal Demographic and Health Survey (NDHS) studied women's experience of gender-based violence at the national level for the first time in Nepal. The NDHS depicted that, among women age 15–49, 22% had experienced physical violence and 12% had experienced sexual violence at least once since age 15 (Tuladhar et al. 2013).

> *In recent times, there have emerged extensive accounts of violence against women in times of armed conflict. Systematic rape and other forms of gender based violence are increasingly used as weapons of war in armed conflicts in different regions of the world. Furthermore, the use of rape to reinforce policies of ethnic cleansing and the establishment of camps explicitly intended for sexual torture and the forcible impregnations of women are tragic developments which mark a definite escalation of violence against women in situations of armed conflicts.* (Murray et al. 2002)

Post-conflict societies also experience practices of gender-based violence (GBV). Indeed, rape and other forms of sexual violence have been cited as major factors in undermining post-conflict peace processes (The Secretary-General 2009).

The effects of GBV in conflict and post-conflict areas are numerous and severe. Sexually transmitted diseases are a lasting consequence of GBV and are a major health concern for women in conflict areas. Along with viewing disease as a consequence of GBV, it should be noted that the transmission of disease can also be used as an intentionally perpetrated form of violence. Men who are aware that they are carriers of disease, especially HIV/AIDS, often rape local women in areas which are suspected to support their opposition in an effort to exterminate the local population (Rehn and Sirleaf). In addition to HIV/AIDS, many women also contract gonorrhea and other STDs with symptoms such as painful urination, sores, and rashes which require medical treatment. Such medical treatment is often urgently required in order to prevent infection in open wounds caused by the violence and to attempt to prevent the transmission of disease. In addition to sexually transmitted diseases, GBV has many other serious effects and consequences which impact both the individual and the community. Physical harm such as injury to reproductive organs, traumatic fistulas, and infertility often accompany brutal or repeated rapes (Rehn and Sirleaf). Attempts at abortion following an unwanted pregnancy from rape may also have severe medical complications, and women who are pregnant at the time of the attack frequently miscarry (Amnesty Int'l, Côte d'Ivoire 2007).

In addition to these physical effects, GBV also has serious psychological consequences, including depression, anxiety, post-traumatic stress disorder, shock, memory loss, and sexual dysfunction (Reuters 2012). Rape survivors experience symptoms like post-traumatic stress disorder, on a physical, behavioral, and psychological level. Rape trauma syndrome, a syndrome used to describe emotional responses to sexual assault including hopelessness, loss of control, anger, guilt, and phobias, is common. This violation is physical, emotional, and moral and associated with the closest human intimacy of sexual contact. The intention of the rapist is often to profane this most private aspect of the person and leave the victim utterly helpless. Rape by its very nature is deliberately designed to produce psychological trauma. It is form of organized social violence comparable only to the combat of war.

Access to Justice

Once the conflict has ended, structures and institutions concerned with maintaining law and order are corrupt or nonexistent. Women are granted rights within the newly formed governments and constitutions on paper in the conflict and post-conflict times. A variety of obstacles hinder them to seek justice for the injustices and crimes perpetrated against them. Their own families restrict them in seeking help in crises, fearing stigma to the family.

Genocide denial pervades Bosnia, especially in the Republika Srpska. This denial prevents individuals from seeking justice, compensation for disability and/or loss of property, reconciliation, and accessing quality health care for wartime trauma and rehabilitation. Since the end of the aggression, 18 years ago, "*fewer than 40 rape cases have been prosecuted. . .and legislation at the state level to extend compensation and rehabilitation rights to rape victims of the war, is gathering dust, hostage to ethnic politicking*" (Reuters 2012). In addition to this gross lack of judicial recourse, legislatively speaking, "*at least three separate bids have been made in recent years to enshrine the rights of wartime rape victims in state law, so far without success*" (United Nations Development Programme 2010).

Lack of Women's Political Participation

As stated in the Security Council Resolutions, women must be a part of ending the conflict, promoting peace building, and represented in post-conflict decision-making. Unfortunately, women are typically underrepresented in the peacemaking and rebuilding process, as well as the political sphere which helps shape the future of their respective country. Peace building and rebuilding processes cannot succeed when an entire population is absent from, discriminated against, or left out of these discussions.

In 2003, Bosnia adopted the Gender Equality Law, which established the Agency for Gender Equality, charged with state gender equality (United Nations Development Programme 2010). The law "prohibits direct and indirect discrimination on the basis of gender" (United Nations Development Programme 2010). Though this law established a statewide agency, Republika Srpska and the Bosnian Federation each have their own gender centers with their own laws and governance structure. The main role of each center is to monitor "the implementation of the Gender Equality Law and tasks relating to state obligations under CEDAW" (European Commission 2012). Further, the Gender Equality Law requires a 40% quota for women within public administration, but this has not been met (Bekoe and Parajon 2007).

During the first civil war, Liberian women organized through the Women in Peacebuilding Network (WIPNET) which led to peace talks that ended the first war (United Nations Entity for Gender Equality and the Empowerment of Women 1995).

Lack of Education and Health Awareness

Literacy directly leads to increased utilization of health care and awareness of health for women. With increased education, women's access to health care and political participation increases (Inter-Agency Information and Analysis Unit 2012). Education of women and girls not only benefits the individual but leads to higher levels of education and less malnutrition in children and, thus, more whole societies. In regard to access to health care for women, education of men is just as important in creating and maintaining access to health care for women.

The lack of education for women, especially in the most vulnerable Mayan communities which speak very little Spanish, creates a culture in which women remain unaware of their rights, unable to report crimes, and entrenched in a "*machismo*" culture that holds little concern for the rights of women.

Illiteracy of women and girls continues to increase in post-conflict Iraq. The graph below shows the illiteracy and unemployment rate among women 15 years and older. According to the UN Inter-agency Information and Analysis Unit, now the Joint Analysis and Policy Unit, "*the illiteracy rate among Iraqi women (24 percent) is more than double that among Iraqi men (11 percent). In functional literacy tests illiteracy rose above 50 percent for women aged 15-24 living in rural areas*" (Inter-Agency Information and Analysis Unit 2012). Furthermore, one-third of girls aged 12–14 are not enrolled in school, and one out of ten girls aged 12–14 has never attended school (Becker et al.).

One of the best supports to women in post-conflict countries is empowerment through education. Education is one of the most important tools for ending structural discrimination by breaking stereotypes and prejudices. It will also facilitate women in knowing their rights and seek help for better mental and physical health.

Decision-Making Power Within the Family

The power that women hold within the family greatly influences their roles in the public and private sphere. In most circumstances, women have very little influence in decision-making in the home in regard to economic and child-care decisions. This may be due to culture, tradition, societal pressure, or another factor. In these cases, men are seen as the head of household and have the power to prevent women from seeking health care, education, financial gains outside the house, or a social group. If women are to be part of the larger society, they must have decision-making power within the home.

When it comes to health care, education and earning power are two of the most important factors in determining a rural, indigenous women's access to health care (Becker et al.). Guatemalan men remain in charge of family decisions, including expenses. In a survey conducted by Johns Hopkins on the relationship between women's decision-making power and its effects on health behavior, "*the husband's education and occupation were predictive of the wife's use of health care*" (Human Rights Watch 2012).

In spite of advancement in closing gender gaps over the past two decades, important gender inequalities remain in different sectors, including the economic domain. The Gender Gap Index of the World Economic Forum indicates that no country has completely closed gender gaps and that gender gaps in access to economic opportunities are better than in other areas such as health or education. Just 62% of the economic outcomes gap has been closed compared to 97% and 95% of the health and education gaps, respectively (Encyclopedia of the Nations 2010).

Traditional and Sociocultural Mores

In the wake of violence and strife, societies often revert to traditional values that are harmful to women while forming newly emerging democratic states. While new civil law structures might be egalitarian in nature, many women are unable to access the rights granted to them by the new constitution and civil reforms. Women's lives then become dictated by customary laws which place them in vulnerable positions within the private and public sphere, subjugating them to harsh patriarchal structures and cultural scripts. The resurgence of tradition into the value system of a society during, and post, conflict further impedes women's access to health care, education, and political positions.

Lack of Employment

The formal employment sector in post-conflict nations is generally weak. Normally, jobs that do exist are given to men. Women make up large proportions of the informal sector, such as selling things in the marketplace and domestic labor. These roles provide women with little economic security and very little, if any, rights or protections.

Lack of Access to Quality Health Care

Although there are many government initiatives and non-governmental organizations attempting to promote, provide, and educate women within post-conflict nations to the benefits of health care, there remains a gap between available care and access to care. Lack of access, awareness and knowledge of rights within cultural traditions all play important roles in preventing women from accessing the health care they need.

Armed conflicts have been major causes of disease, suffering, and death for much of human history. The fatalities, injuries, and disabilities suffered on the battlefield are obviously direct effects of conflict. But there are also health consequences from the breakdown of services and from population movements. The diverting of human and financial resources away from public health and other social goods contributes to the spread of disease. These indirect consequences of war may remain for many years after a conflict ends. Both the experience of conflict itself and the impact of conflict on access to health care determine the physical health and the psychological well-being of women and girls in very particular ways. Women are not only victims of the general violence and lack of health care – they also face issues specific to their biology and to their social status. To add to the complexity of the picture, women also carry the burden of caring for others, including those who are sick, injured, elderly, or traumatized. This in itself is stressful and often contributes to illness.

Women displaced by conflict in Colombia are facing rape and domestic violence as well as obstacles in obtaining health care. Uprooted from their homes and mostly impoverished, displaced women and girls who become victims of rape and domestic violence are often unfamiliar with health and justice institutions in their new locations (Becker et al.).

In the years since the Guatemalan civil war, the status of women in Guatemalan society has only improved for women of the higher economic classes (Hausmann et al. 2008). These women have much more access to education, which allows them to have more opportunities and, importantly, more access to health care. Women's agency can be equated with her access to health care and control over decisions regarding sexual and reproductive health (Encyclopedia of the Nations 2010). Over 40% of the population does not have access to health-care services (WHO/CDC 2008). Access to health care means something different to each individual woman depending on her economic status, race, and education.

Because of women's physiology, they are vulnerable to vitamin and iron deficiencies that affect their health and energy levels as well as their pregnancies. Iron deficiency anemia is a serious health condition for women of reproductive age and can be fatal for pregnant women. A study among Somali refugees indicated that up to 70% of women of reproductive age were anemic, probably caused by a lack of iron in the diet or by malaria, which depletes the body's stores of iron (van den Bosch et al. 2002). A recent nutritional survey in Afghanistan showed a 9.8% rate of scurvy (vitamin C deficiency) among women of childbearing age (New York Times 2006).

Sexual and Reproductive Health Rights

The promotion of reproductive health services is vital for women's agency as it strengthens their self-esteem, constraints and choices, and most importantly their autonomy. Often in many post-conflict countries, issues related to sexuality are considered taboo, and in regard to reproductive decision-making, it is either silenced or determined by men.

One of the most controversial issues in Colombia is abortion. Society and religion play a major role in the issue of abortion. Since 2006, the country's Constitutional Court permitted the procedure in cases when the pregnancy endangers the life or health of the mother or results from rape or incest or if the fetus is unlikely to survive (Singh et al. 2006).

Abortion is illegal in Guatemala except in cases in which the woman's health is in danger. However, the practice is widespread. There is one abortion for every six births (Singh et al. 2006). From these illegal abortions, about 21,600 women were hospitalized for treatment of complications (Bareslau 2002).

Traditional and Sociocultural Mores

In the wake of violence and strife, societies often revert to traditional values that are harmful to women while forming newly emerging democratic states. While new civil law structures might be egalitarian in nature, many women are unable to access the rights granted to them by the new constitution and civil reforms. For instance, in most South Asian families, the decision-making is the right of the head of the family, who happens to be a man, and everyone has to abide by the rules made by him whether they are appropriate or inappropriate. This family norm is passed on from one generation to the other. If any one goes against it, they have to face opposition from the family or the society. Women's lives then become dictated by customary laws which place them in vulnerable positions within the private and public sphere, subjugating them to harsh patriarchal structures and cultural scripts. The resurgence of tradition into the value system of a society during and post-conflict further impedes women's access to health care, education, and political positions.

Stigma of Mental Health

Even in the wars and conflict situations, stigma of mental health can influence seeking mental health care. The psychological impact of conflict on individuals is well documented. There are numerous studies on post-traumatic stress among combatants (mostly men) and on the effects of war on children. There is a vast literature on psychiatric treatment for torture victims (primarily on men), but ironically, little attention has been paid to the effects of conflict on the psychosocial status of women or on how women process and cope with their experiences. A recent study of trauma in non-conflict situations indicates that there may be gender differences in the response to trauma. The study indicates, although the lifetime prevalence of traumatic events is slightly higher for men, women run twice the risk of developing post-traumatic stress disorders, suggesting that certain types of trauma may have a deeper and longer-term psychological impact on women. Particularly trauma of rape and sexual abuse has a long-lasting effect on women (Waldman 2001).

Even in the most industrialized nations, there remains a stigma in individuals who seek mental health services or suffer from mental illness. While processes of healing after a conflict and/or trauma differ between cultures, nations, genders, ethnicities, and religions, these healing processes chosen by the individual need to be respected and supported. Society as a whole must be able to heal without restrictions, judgment, or stigma. The psychosocial trauma of continued conflict leads to large portions of the population suffering from PTSD. This traumatic injury is unique in its lack of visibility (Eisenbruch).

Armed conflict traumatizes both combatants and civilians – sometimes for the rest of their lives, long after the war is over. Numerous studies of the psychological state of refugees, war-affected populations, and ex-combatants show that the experience of violence makes a deep impression on the human psyche. People's responses differ according to their personalities, the levels and types of violence they experience, and their cultural interpretations of the conflict, yet it is increasingly clear that if left untreated, the psychological impact of war can severely diminish the quality of life and change the psychosocial fabric of society. War-affected populations suffer high rates of anxiety, depression, and post-traumatic stress disorders. Those who have been tortured may require intensive therapy in order to carry on with their lives.

Refugees who leave their communities and countries also experience what one specialist calls "*cultural bereavement*," a grieving for home, language, or traditions (Burnett 2001). Those who are granted asylum in rich countries with very different cultures from their own experience social isolation and high levels of depression (Nock et al. 2001). Studies of combatants indicate that increased exposure to combat is a predictor of severe wartime violence (Port et al. 2001), which may contribute to the atrocities committed in some long conflicts. Once combatants are inured to extreme violence, it is difficult for them to revert later on to more normal, healthy attitudes toward conflict resolution. There seems to be a pattern of increased homicide rates after wars, which does not augur well for societies that have suffered years of atrocities, often at the hands of very young combatants.

Bosnia's population continues to suffer from traumatization from the war. According to the World Health Organization, "*ten percent of Bosnia's population, or 400,000 people, have been diagnosed with PTSD. Associations who help people with PTSD, however, claim that the true number is close to 1.7 million people, nearly half of the country's population*." Post-traumatic stress disorder (PTSD) can be a debilitating disease if not treated, and in Bosnia people with PTSD and other mental health issues are stigmatized. The increasing levels of PTSD in Bosnia are attributed to the high rate of unemployment (United Nations 1999; Amnesty International 2009).

The women of Bosnia and Hercegovina are still waiting, many survivors suffer from post-traumatic stress disorder, and "*many survivors are unemployed, often for reasons related to the physical and psychological injuries they have suffered*" (Aldis and Schouten 2001). The current psychological care system in Bosnia is insufficient. This report points out that "*on average there is one Centre for Mental Health for each 40,000–50,000 people*" (Van Damme et al. 1998). While writing their report, Amnesty International was "informed by a local NGO that in the municipality of Jajce, with some 45,000 inhabitants, only one psychologist is employed and one psychiatrist visits the town once every two weeks for one day" (Sajor 1998).

Mental health issues if not treated could seriously affect both capacity and desire to engage in reconciliatory and restorative processes designed to lower tensions. In addition, individuals suffering from pathological anger struggle to engage positively in their communities for a long time after conflict settles. There was also a high risk of transmission of trauma to the next generation if children are exposed to episodes of explosive rage. These issues strongly suggest that effective mental health interventions may help to improve the effectiveness of measures designed to mitigate the risk of relapse into violence in post-conflict regions. Establishing an accurate historical record of the violent past and thereby countering denial are considered important peace-building goals (Robinson).

Stigma of Sexual Violence

> *War is an inherently patriarchal activity, and rape is one of the most extreme expressions of the patriarchal drive toward masculine domination over the woman. This patriarchal ideology is further enforced by the aggressive character of the war itself, that is to dominate and control another nation or people.* (Khalek; Andersson et al. 1995)

Survivors of sexual violence face extreme scrutiny, judgment, and stigma in society. Culture, religion, and tradition impact women's ability to communicate their trauma and suffering. These impediments also stifle women's ability to seek psychological or mental health care. In some cases, women feel unable to tell their spouse that they were sexually assaulted; they fear tarnishing the honor of the husband's family and retribution for being sexually assaulted. If women are to be active members of the post-conflict society, they must be able to express crimes committed against them and others without fear of upsetting cultural, religious, or traditional norms.

As of now, OWFI estimates that "*more than three million women and girls with no source of income or protection...make them vulnerable to trafficking, sexual exploitation, polygamy and religious pleasure marriages*" (Tate 2015; WHO 2001).

Effects of Sexual Violence

The health impact of sexual violence can be disastrous. Injuries, unwanted pregnancies, sexual dysfunction, and HIV/AIDS are among the physical consequences. The mental effects include anxiety, post-traumatic stress disorders, depression, and suicide (Legros and Brown). Although global attention has been focused for more than a decade on sexual violence as a strategy of war and as a human rights issue, the women who have suffered need direct support immediately, which they are still not getting. Rape often involves serious physical damage to a woman's body, requiring treatment for abrasions and tears; some women even need suturing. Antibiotic treatment is necessary. If provided within 72 h, emergency contraception can prevent an unwanted pregnancy. With the widespread use of rape in war, health systems must be prepared to provide such treatment and ensure that staff are trained to deal sensitively with patients. The burden can be enormous. In a 6-month period in 1999, hospitals in Brazzaville treated 1600 cases of rape (Physicians for Human Rights 2002). A recent report by Physicians for Human Rights indicates that over 50% of Sierra Leonean women experienced sexual violence of some type during the conflict there; many continue to suffer from serious gynecological problems (Desjarlais et al. 1995).

Psychosocial issues – Issues of women's health and well-being are often relinked to one of two categories: maternal and child health or reproductive health. This has led to the criticism that a woman's health is primarily considered from the point of view of her reproductive or maternal functions and not in its own right (Desjarlais et al. 1995; Van der Kwaak et al. 1995).

The World Mental Health Report (Desjarlais et al.1995; Richter-Lyonette 1997) argues that such a traditional approach should be broadened to incorporate mental and physical health across the life cycle: a woman's health is her total well-being, not determined solely by biological factors and reproduction but also by the effects of workloads, nutrition, stress, war, and migration, among others (Van der Kwaak et al.1995; United Nations 1996). Understanding the sources of ill health for women health relates to understanding how cultural and economic forces interact to undermine the social status of women.

Women and men share many of the same losses, deprivation, and threats of armed conflict (e.g., the destruction of homes and the killing of family members). Some experiences of violence and difficulty, however, affect either women or men or have more severe consequences for women. Sexual violence is one example. Similarly, the loss of a spouse may alter a woman's life and status in ways that affect her ability to survive. Does it follow from this that women are more vulnerable in psychosocial terms? The international community has responded by viewing women as more vulnerable and in need of special assistance.

In Bosnia and Rwanda, many agencies sought to set up programs specifically targeting women who had been raped. Richters (1997), Turner (2001), and Lindsey (2001) point out that these initiatives were not always welcomed by the women concerned: they felt that they were only of interest to the agencies and the media because they were survivors of sexual violence and that their own opinions of the type of assistance they wanted were not taken into account. Turner (2001) and Diaz (2001) discuss the effects of the identification of women as particularly vulnerable, pointing out, on the one hand, that this sometimes leads to more problems for women and, on the other, that it can lead to neglect of the suffering experienced by men. The vulnerability of any group (men, women, the elderly, and children) differs according to its exposure to a given problem and its capacity to tackle it. The type of action necessary to respond to the needs of women depends on circumstances (Lindsey 2001; Diaz 2001).

Psychosocial Programs to Support Women

It is vital that women themselves are asked about the issues they would like to address and the manner in which they would like to receive assistance. Involving women in the planning, design, implementation, and evaluation of psychosocial programs is crucial to their success. In addition, programs that seek to address general psychosocial issues in a population need to be gender-sensitive by taking into account the situation of women, the particular problems they face, and the ways in which they deal with them (Diaz 2001; Kumar 2001; Lindsey 2001; Newbury and Baldwin 2000). Women have different coping mechanisms from men, and these need to be recognized and strengthened. In many situations of armed conflict, women have organized themselves to address the issues they face (Kumar 2001; [66]). In Rwanda, for example, women's organizations such as ProFemmes were actively involved in shelter projects as they saw housing as an important first step for women to rebuild their lives (Newbury and Baldwin 2001) [67]. “Capacity building” is a much used term, but in the context of empowering women to face the challenges of post-conflict or post emergency societies, it should form part of psychosocial programs whose aim is to help people cope.

Concluding Remarks

Women in both conflict and post-conflict situation have been vulnerable due to several reasons; primarily they are deficient in in their personal resources, for example, lack of education, self-confidence, awareness of their rights, and inability to acquire any skill to work and earn a reasonable salary. They may also lack support from the family, society, and even judiciary system. These factors along with their long-ingrained cultural beliefs and attitudes regarding their role in society and inability to fight back for their legal rights may make them suffer in the face of these difficult pre- and post-conflict situations.

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Part III

Reproductive Life

Infertility, New Reproductive Technologies, and Women's Mental Health

8

Jane Fisher and Karin Hammarberg

Contents

Abstract

Most women want to have children, but for some achieving a pregnancy when it is desired is either difficult and prolonged or impossible. Estimating the population prevalence of fertility difficulties or involuntary childlessness is hampered by varied definitions, but in all nations, a proportion of adults of reproductive age will experience infertility. It is a heterogeneous group of reproductive health problems usually defined as the failure to achieve a clinical pregnancy after at least a year of regular unprotected sexual intercourse. Some fertility difficulties are attributable to female, some to male, and some to shared causes, and some are regarded as idiopathic or unexplained. In high-income countries, it is estimated

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_16

that about 15% of people of reproductive age will seek medical assistance to conceive. Inability to conceive is highly emotionally distressing. The distress is variously conceptualized as an existential crisis, disenfranchised grief, or an adjustment reaction. The nature and intensity of emotional distress varies over the course of infertility treatment. At diagnosis, acute symptoms of distress may increase, but the initiation of treatment arouses optimism that the condition may be assisted or ultimately alleviated. Treatments with assisted reproductive technologies are physically demanding and can be experienced as invasive and accompanied by successive feelings of hope and despair, which are exacerbated when several treatment cycles are undertaken. Couples can experience isolation from the "fertile world" and experience envy when learning of other women's pregnancies or celebrations of births. Among those who conceive, idealization of parenthood might prevent consideration of the inevitable losses associated with having a baby, and might limit support seeking. After treatment has ceased, those who have not conceived are less satisfied overall with their lives than those who had a baby.

Keywords
Infertility · Assisted reproduction · Psychosocial aspects of IVF treatment

Introduction

Most women want to have children (Boivin et al. 2007; Holton et al. 2011), but, for some, achieving a pregnancy when it is desired is either difficult and prolonged or impossible. Estimating the population prevalence of fertility difficulties, infertility, or involuntary childlessness is hampered by varied definitions and by selection of an appropriate comparison population, which have sometimes included people who have never tried to conceive, whose fertility is unknown. People with fertility difficulties are commonly classified either as individuals or couples who are unable to conceive after a specified period of regular unprotected sexual intercourse, or those seeking medical assistance in order to conceive. Primary infertility (the inability to conceive at all), secondary infertility (those who have at least one living child but are unable to conceive again), and subfecundity and the capacity to conceive but not to sustain a pregnancy to term are sometimes conflated but require separate consideration.

Global Patterns of Infertility

Infertility is experienced by people everywhere in the world (Inhorn and Patrizio 2015). Estimates are influenced by the availability of national population-level data, and the definitions and indicators of infertility (Fisher 2009). Boivin et al. (2007) aggregated the 25 available population surveys of people seeking medical assistance for infertility or of people diagnosed as infertile and estimated that 72 million women were currently infertile and that on average globally 9% of couples will experience infertility. Five years later, Mascarenhas et al. (2012) pooled data from 277 demographic and reproductive health surveys that had collected data from women aged 20–44 years since 1990. The surveys were from all world regions and were included if data about women's age, current partnership status, current contraceptive use, date of first and most recent births, time since intimate partnership was first formed, and desire to have a child were available. Prevalence of infertility was calculated on the basis of the demographic indicator of proportion meeting criteria of desire and potential for pregnancy and actually having a live birth in a 5-year period. They found that worldwide, more than 48.5 million couples want to have a child but are unable to conceive, among them about 19 million are unable to have a first child, and about 29 million couples are unable to have a subsequent child. This divergence in estimates demonstrates how difficult it is to achieve precision. However, it can be concluded that in all countries, a proportion of adults of reproductive age will be experiencing or have experienced infertility. Prevalence varies between countries but is estimated to be highest in World Bank defined low- and lower-middle income countries, ranging up to 30% among men in Nigeria (Ombelet et al. 2008), predominantly attributable to infections of the genitourinary tract.

Psychological Causation of Infertility?

When the causes of infertility were less well understood, a high proportion of those classified as being of unknown etiology were presumed to be psychological in origin, a condition termed psychogenic or nonorganic infertility (Pantesco 1986). Bydlowski and Dayan-Lintzer (1988), for example, concluded on the basis of clinical observations that . . . *the desire for a child in a woman may correspond to the incestuous offspring she desired when she was a little girl . . . the Oedipus complex and the desire for parthenogenetic reproduction*. In studies which collected data from groups, the personality characteristics or psychiatric symptoms proposed as etiologically involved included uncertain gender identity, having an external locus of control, infertility as a defense against inner conflicts, ambivalence about having children, psychiatric symptoms, in particular, depression and anxiety, marital problems "masquerading as infertility" and sexual dysfunction (Callan and Hennessey 1988b; Möller and Fallström 1991; Greil 1997). Pantesco (1986) reviewed the then available literature in this field and argued that most of these conclusions were made on a scientifically unsound basis, including generalization from single case reports, very small samples influenced by high selection bias, and retrospective attribution of the observed differences between women who were presumed to be fertile and women seeking infertility treatment to preexisting psychological factors.

A diagnosis of psychogenic infertility was never applied to men, reflecting unquestioned stereotypes among researchers that it was only infertility among women that was believed to be psychologically caused and that it was related to their unconscious *psychological blockades* and intrinsic difficulties in being female (Pantesco 1986; Wischmann 2003). Kipper et al. (1977) concluded from comparisons of projective test results contributed by a group of women who were diagnosed as psychogenically infertile, and a control group, that the latter had *covert attitudes* indicating they were *less accepting of their femininity.* Pantesco (1986) summarizes the investigations of causes of infertility among women until the mid-1970s as investigating constructs such as *masculine-aggressive personality, feminine immature personality, functional derangement, rejection (of pregnancy), frigidity, hostility, and anxiety about feminine role.* Pantesco (1986) and Wischmann (2003) consider that this approach to understanding infertility was a legacy of psychoanalytic theorists who assumed that women's psyches had causal links to their reproductive functions. Pantesco (1986) attributed this to a *lingering psychoanalytic emphasis .... ignoring men's role in the infertility system of the couple* in *male-dominated*, [but] *women-centered* research.

By the late 1980s, more detailed understanding of the biology of reproduction, including infertility, had grown and psychoanalytic explanations were generally rejected. However, clinician proponents of psychogenic infertility continued to publish theoretical papers based on their psychoanalyses of women who were experiencing infertility. George Christie (1994) concluded from *clinical material* generated in three vignettes of women experiencing infertility and being treated in analytic psychotherapy by him, that they all *had difficulties in achieving healthy separation from their mothers* towards whom they had *idealizing attitudes* which were a defense against *underlying hostility.* George Allison (1997) concluded on the basis of his psychoanalytic treatment of three "cases" that their fertility difficulties were related to their *unconscious guilt and hostility towards a defective or deceased male sibling*.

None of these influential investigators considered the psychological and social consequences of being infertile in their explanatory models or the circumstances in which it occurred. However, these conclusions led to misattribution of responsibility for the fertility difficulties to women and blaming of victims (Wischmann 2003).

Purposively designed and adequately powered studies using more appropriate sampling techniques, and replicable methods of data collection and analysis, reach quite different conclusions (Fisher 2009). Downey and McKinney (1992) administered a large battery of questionnaires including assessments of mood and psychiatric symptoms to 118 women seeking treatment for infertility and 83 women of the same age and demographic characteristics presenting for routine gynecological checks to the same clinician's offices in America. There were no differences in symptoms of mental health problems, self-esteem, or sexual functioning between the groups. At a similar time in England, Edelmann et al. (1991) compared personality characteristics and symptoms of depression and anxiety being experienced by women and men seeking fertility treatment and demographically similar people seeking sterilization at the same clinics, having had children. They also made comparisons on the basis of cause of infertility within the treatment seeking group. No significant differences between infertile and fertile groups on any of the parameters were found. Two recent prospective studies assessed stress and anxiety levels among women who tried to conceive spontaneously and with assisted reproductive technology, and both concluded that there were no differences between those who did and those who did not achieve pregnancy (Lynch et al. 2012; Pasch et al. 2012).

Etiology of Infertility

Overall, infertility is regarded as a heterogeneous group of reproductive health problems, now most commonly defined as the failure to achieve a clinical pregnancy after 12 months or more of regular unprotected sexual intercourse. Fertility is influenced by diverse risk factors. Some is attributable to female, some to male and some to shared causes, and some is regarded as idiopathic or of unexplained origin. In high-income countries, it is estimated that about 15% of people of reproductive age will seek medical assistance to conceive.

Male and female factors are each believed to account for about 40% of causes of infertility; the remaining 20% are either unexplained – so-called idiopathic infertility – or of shared etiology. In women, the most common causes of fertility difficulties are obstructed Fallopian tubes and ovulation dysfunction, while in men, low sperm viability and dysfunction of sperm motility are most common (Johnson and Everitt 2000, 2007). Age has a marked effect on fertility. There is a progressive decline in fertility after the age of 30 years, with a steeper decline after 35 years (Maheshwari et al. 2008) among women, attributed to declining numbers and quality of oocytes and the consequent increase in age-related infertility. In men, sperm quality decreases with age and rates of conception after the age of 45 is significantly lower than at younger ages (Hassan and Killick 2003). It has been suggested that 5% of infertility is caused by constitutional problems, including genetic conditions, anatomical defects, and endocrinological or immunological dysfunction (Kols and Nguyen 1997). The balance is attributed to infection (World Health Organization 1987), unhygienic health care practices, particularly in obstetrics, and exposure to environmental toxins. Inhorn and Patrizio (2015) in a comprehensive review of the demography of infertility drew particular attention to the burden of secondary infertility experienced by many women in low- and middle-income countries probably attributable to infections following unsafe abortion leading to tubal occlusion and inability to conceive a subsequent pregnancy (Fisher 2009).

In all the world's high-income countries, the average age at which women first give birth has increased in recent decades (Schmidt et al. 2011). The reasons for this are not fully understood, but it is thought to be a multifactorially determined social change. It is argued on one hand that better access to reliable contraception; increased participation by women in postsecondary education; the time required to qualify, secure employment and accrue financial resources; and inflexible, family-unfriendly employment conditions are influential in deterring women from conceiving (Mills et al. 2011).

On the other hand, it is a common public discourse that women can choose if or when to have a baby, and how many babies they wish to have, and therefore the popular assumption that women delay motherhood for "selfish" or "lifestyle" reasons to pursue goals like travel or perhaps professional ambition or home ownership (Mertes 2013, p. 142). Daly and Bewley (2013) argue that rather than positioning women who are employed as meeting their own basic needs, they are regarded as *seeking self-aggrandizement.* Holton et al. (2011) investigated childbearing expectations and outcomes among women aged 30–34 years in Victoria, Australia, the age group of women with the highest fertility in this setting. In total, 569 Victorian (219, 38% childless) women in this age group were recruited from the Australian Electoral Roll and completed a postal questionnaire anonymously. Overall, 80% had fewer children than they wanted to have, but 54% thought they were unlikely to have any or more children. The reasons included lacking a secure job, financial obligations like considering it would be too difficult to pay a mortgage or rent while away from the workforce, having education debts or a health condition that required medication that might have teratogenic risks, or was potentially heritable. However, the predominant reason was not having a partner, or having a partner who did not want children or was unwilling to raise them. Schytt et al. (2014) had similar findings in a survey of 365 childless women and 356 childless men aged 28–40 years in Sweden. The predominant reason given by women for this situation was lack of a partner. Together, these data indicate that the popular discourse is a potentially inaccurate oversimplification, which blames women for a reproductive health outcome that is related to their circumstances, rather than to personal choices.

Some psychiatric illnesses and behaviors can nevertheless make individuals more vulnerable to infertility (Rosenthal and Goldfarb 1997; Deka and Sarma 2010). In particular, the severe weight loss associated with the eating disorder, anorexia nervosa, can lead to suppression of ovulation. Potentially modifiable factors, that might be influenced by mental health, including high body mass, tobacco, alcohol, and drug use, caffeine consumption, and micronutrient deficiencies can also lead to decreased fertility (Anderson et al. 2010). Sexual difficulties, especially erectile dysfunction and vaginismus, can impair completion of intercourse (Rosenthal and Goldfarb 1997). The links between behavioral factors and fertility pathology were examined in a substantial epidemiological comparison of 1750 women recruited from seven clinical services in North America who had been diagnosed as infertile and 1760 primiparous women who had given birth at the same services. It was found that, while there were few differences between fertile and infertile women, tubal obstruction was associated with a higher incidence of previous sexually transmitted disease. Women with this condition had a lower age of sexual debut and more sexual partners were more likely to have used an intrauterine contraceptive device, and were less likely to have used condoms than those with other fertility difficulties (Beral et al. 1994). Deka and Sarma (2010) postulate on the basis of clinical studies with small numbers of participants, that depression can affect libido, ovulation, self-care, and general health and might in turn increase reproductive difficulties, but acknowledge that the strength of this association is yet to be established.

If having a child is a highly desired life goal, the experience and diagnosis of infertility can have adverse psychological consequences.

Psychological Consequences of Infertility

Infertility is diagnosed when a couple has already sought to conceive for at least a year (Cousineau and Domar 2007; Lynch et al. 2012), and anyone who experiences this, and desires a child, experiences psychological consequences. For many otherwise healthy people of reproductive age, this may be a first encounter with life events over which they have little agency. Usual responses to difficult events, including adopting healthy behaviors, finding salient information, or seeking additional support are less effective (Kols and Nguyen 1997) than they might be in other circumstances. The experience and ultimate diagnostic confirmation of infertility can have a marked psychological impact (Menning 1982; Fisher 2009; Schmidt 2009).

High rates of clinically significant symptoms of anxiety: 38% in a clinic in Sydney, Australia (Beaurepaire et al. 1994); 40.2% meeting diagnostic criteria for an anxiety or depressive disorder in a hospital in Taipei, Taiwan (Chen et al. 2004); and only 30% "non-cases" on a measure of anxiety symptoms in a hospital in Sousse, Tunisia (El Kissi et al. 2013) are reported in surveys of consecutive cohorts of women seeking fertility treatment. More than 20% of women attending an infertility support group reported that they had experienced episodic suicidal ideation (Kerr et al. 1999). However, labelling these symptoms as psychiatric illnesses has been criticized. First, because psychiatric symptom checklists include somatic symptoms (e.g., "Something is wrong with my body. . . . . .") that are normal among those with infertility and can lead to overestimates of the clinical significance of symptoms. As psychological state is dynamic following diagnosis and during treatment for infertility, it has been argued that a psychiatric diagnostic approach to conceptualization is less accurate than considering a psychological profile along which individuals are distributed (Berg and Wilson 1990). Unlike other adverse life events, which may have a clear resolution, infertility is regarded as uniquely stressful because it can last for many years and for many will not be resolved through the birth of a child (Berg and Wilson 1990). Berg and Wilson (1990) argue that an infertility strain profile characterized by increased anxiety, irritability, profound sadness, self-blame, lowered energy levels, social isolation, and heightened interpersonal sensitivity is more germane. Almost all women presenting for treatment have been found to demonstrate some of these features (Berg and Wilson 1990).

Qualitative investigations of the experience of infertility have drawn on clinical experiences, in-depth interviews, focus group discussions, and thematic analyses of elaborated responses to open-ended survey questions (Greil et al. 2010). In an early report, Wallach and Mahlstedt (1985) described women experiencing a profound existential life crisis. Guilt was prominent, among women, including fears that earlier sexual experiences, the use of contraceptives, or delaying procreation while pursuing professional goals had compromised fertility. The frustration associated with being unable to control conception or their own physiological functioning can lead to anger and frustration directed towards the infertile partner, friends and associates who have been able to conceive easily, and people who offer unsolicited advice (Dancet et al. 2011; Greil et al. 2011).

Reaction to infertility is also conceptualized as grief, including for many intangible or disenfranchised losses (Menning 1982; Thorn 2009). The losses include: the experiences of pregnancy, childbirth, and breastfeeding; the unknown child or children and later grandchildren who will not exist; the loss of a generation and genetic continuity; the state of parenthood and the activities and relationships it entails; and an element of adult and gender identity which will never be realized and is substituted with a flawed infertile identity (Menning 1982; Fisher 2009; Thorn 2009). In addition, anticipated losses of significant relationships, in particular with a partner who might wish to be freed to partner someone else in order to have a child, feared loss of physical attractiveness and intrusion into the sexual relationship (Wallach et al. 1985). Fertility difficulties appear to exert a pervasive negative effect on quality of life, with future planning and commitment to other life activities being compromised.

There is emerging evidence about the psychological impact of infertility on women in low- and middle-income countries, but disparities in the availability of local evidence remain (Inhorn and Buss 1994). Aghanwa et al. (1999) found that 29.7% of women being treated for infertility in Nigeria were depressed or had an anxiety disorder compared to 2.7% of fertile non-matched hospital staff controls. It is theorized that in highly pro-natalist societies where women may have few occupational choices and motherhood is the only identifier of adult status, infertility is highly stigmatizing (Inhorn 2003). Infertile women can have their gender identity questioned, experience social exclusion, be suspected of having evil potential and subject to harassment, especially from their in-law family (Rouchou 2013). In settings where women are subordinated, they can be blamed for infertility. Divorce may be required as a result of the failure to bear children, which itself is stigmatizing. Divorced and childless women are highly vulnerable when old, because adult children are the usual primary supporters of older people. Given the relatively limited access to assisted reproductive treatments in these settings, infertility has been described as leading to profound human suffering (Inhorn 2003; Rouchou 2013).

Individuals respond to disturbing life events in different ways. Women who are able to take an active part in seeking information and making decisions about treatment options have lower levels of depression and attract more social support than those who passively submit to medical recommendations (Himmel et al. 2005; Benyamini et al. 2008). Individuals with high self-esteem and dispositional optimism are better protected against severe depression (Litt et al. 1992). Denial and avoidance are elements of a normal response to adverse experiences including infertility (Menning 1982). Some individuals may appear to be unaffected emotionally by the diagnosis of infertility, but denial is not an effective defense against severe emotional distress. Individuals who use avoidant coping and deny the emotional impact of infertility may seek multiple medical opinions, in order to find an optimistic assessment. They are at higher risk of becoming depressed and may also be vulnerable to exploitation by extravagant claims for treatments, including those for which there is scant scientific evidence (Litt et al. 1992; Himmel et al. 2005).

Infertility can exert adverse effects on the emotional and sexual relationship between partners (Andrews et al. 1992; Eugster and Vingerhoets 1999; Hart 2002). Guilt and inexpressible blame can have insidious effects on intimacy. The infertile partner may fear rejection or may feel obliged to offer the other a divorce so that genetic parenthood can be achieved with another person (Hart 2002). The expression of anger and frustration about the predicament may be constrained in order to protect the infertile partner (Hart 2002). Sexual spontaneity can be impaired by the need for sexual intercourse to be carefully timed and by the clinical scrutiny to which the relationship is subjected. Both partners can experience emotional pain seeing other couples with children (Hart 2002). However, systematic psychometric investigations reveal few differences between quality of marital relationship in fertile and comparison groups. Rather, they suggest that marital intimacy and cohesion can be strengthened and enhanced through confronting the experience of infertility together (Greil 1997; Schmidt et al. 2005).

Assisted Reproduction

Healthcare for infertility has advanced since the first children were born after IVF in the late 1970s. In the last 40 years, health technologies to treat both male and female infertility have developed rapidly. In high-income countries with well-developed infertility treatment services, it is estimated that up to 75% of couples with fertility difficulties will seek treatment (Boivin et al. 2007; Kirkman and Hammarberg 2014). In countries where ART attracts government and health insurance subsidies, up to 5% of births are a result of assisted conception. This proportion increases with greater subsidy and wider access to services. In resource-constrained settings, there are new initiatives to make low cost infertility services available, but in general, these are most accessible and available to people in higher socioeconomic positions (Kirkman and Hammarberg 2014).

For women, investigations of infertility can include blood tests at particular stages of the menstrual cycle to assess hormone levels, transvaginal ultrasound, hysterosalpingogram to assess patency of the Fallopian tubes and laparoscopy to assess reproductive organs, including for endometriosis. These are coupled with a detailed reproductive and sexual health history and self-monitoring of menstrual cycles. Lalos et al. (1985) assessed experiences of fertility investigations in a prospective interview-based study of women and men in Sweden. They found that for many, this step represented the end of their hopes and efforts to conceive spontaneously, and that the recounting of detailed aspects of their sexual relationship was discomforting, but most said that they were prepared to tolerate these in service of the possibility of having a child.

Depending on the cause of infertility, treatment is individually tailored and can begin with ovulation induction or intrauterine insemination with either a partner's or a donor's sperm. Assisted reproductive technologies (ART) include all techniques to handle human gametes (oocytes and sperm) and or embryos in a laboratory outside the body, for the purpose of establishing a pregnancy. These include collection of oocytes and sperm, and formation of embryos, which can be used fresh or frozen (cryopreserved). The process of collecting oocytes requires a simulated cycle in which a woman has daily hormone injections for up to 12 days to stimulate her ovaries to form multiple mature follicles before undergoing surgical retrieval. Embryos are made in the laboratory and grown to a defined stage before being transferred to the uterus, following which, there is at least 2 weeks of waiting to learn whether pregnancy might have occurred or menstruation begins (Verhaak et al. 2006).

There are variations in pregnancy and cumulative live birth rates following assisted conception. These have been related to the level of experience of the treating center, women's age and the number of embryos transferred (Garrido et al. 2011). Garrido et al. (2011) analyzed data from more than 11,000 women treated with ART and found that about 40% of embryo transfers led to a confirmed pregnancy, but 26% ended in miscarriage. A mean number of 8.2 transferred embryos were needed per newborn. Using life table calculations to review 4225 couples who had undergone 8207 cycles over 6 years, Kovacs et al. (2001) reported that half were pregnant within three cycles and two-thirds became pregnant over six. Women who are younger than 35 years have up to a one-in-three chance of conceiving per cycle, but this is halved for women aged 35–40 years and diminishes almost to zero over the age of 40 years (Kirkman and Hammarberg 2014).

Psychosocial Aspects of Infertility Treatment

The nature and intensity of emotional distress experienced by women varies over the course of infertility treatment. At diagnosis, acute symptoms of distress may increase, but there then appears to be a decrease in symptoms once active treatment is initiated. The initiation of treatment arouses optimism that the condition may be assisted or ultimately alleviated. However, women can hold unrealistically high expectations of the likely success of treatment at this stage (Beaurepaire et al. 1994; Hammarberg et al. 2001). Injections, scans, blood tests, and waiting to know whether eggs have fertilized are all regarded as more psychologically than physically demanding (Callan and Hennessey 1988a; Hammarberg et al. 2001). There is consistent evidence that the moment of embryo transfer arouses optimism, but that quite rapidly the interval between transfer, and pregnancy testing to confirm whether implantation and conception have occurred, is highly anxiety arousing (Callan and Hennessey 1988a; Franco et al. 2002). The onset of menstruation or negative pregnancy tests can arouse intense sadness, despair, and a sense of loss of agency (Franco et al. 2002; Litt et al. 1992). Dispositional optimism and active coping are protective against depression following implantation failure and women who use avoidant coping are more distressed (Litt et al. 1992).

Treatments with ART are physically demanding, in particular for women, and can be experienced as invasive, and accompanied by successive feelings of hope and despair, which is exacerbated when several treatment cycles are undertaken (Boivin et al. 2011). In a systematic review of 27 studies of emotional experiences during infertility treatment, Verhaak et al. (2007) found that experiences of low mood and anxiety (often at subclinical levels) increased after unsuccessful treatment and accrued and intensified over consecutive unsuccessful cycles. When IVF resulted in pregnancy, the negative emotions diminished, indicating that treatment-induced distress is related predominantly to the prospect of treatment failure.

In some settings, the costs of infertility treatment are subsidized either by private health insurance or the state, but in most places, some or all costs are carried by individuals. This can add substantially to the burden of emotional distress and have a marked effect on decision-making about how long to persist with treatment. Couples or individuals have to weigh the financial costs of diagnostic tests and treatment cycles against their yearning for a child (Cousineau and Domar 2007). It has been asserted that couples cannot make a fully informed choice about participation in infertility treatment, because the risks of procedures (including ovarian hyperstimulation and multifetal gestation), the economic costs, the limited success rates, and the possible adverse health effects on women and their offspring can be understated by IVF services (Collins 1994). It is also possible that people experiencing infertility might be less open to hearing about risks. Some support for this view has been provided by evidence that, after prolonged infertility, multifetal pregnancy can be idealized and the associated hazards underestimated (Franco et al. 2002). Couples may seek a multiple birth intentionally, in order to create an instant family (Goldfarb et al. 1996). Although couples may have significant fears about fetal well-being and doubts about their own capacity to care for more than one infant, they can feel prohibited from expressing this ambivalence because they consented to the transfer of multiple embryos (Leiblum et al. 1990; Gleicher et al. 1995; Goldfarb et al. 1996). It is now recommended practice to transfer a single embryo which is associated with lower twinning rates, but similar live birth rates and (van Montfoort et al. 2005; Kirkman and Hammarberg 2014) therefore these outcomes are becoming less common.

There are broader existential impacts. Infertility treatment can be preoccupying and supersede other aspects of life, influencing career considerations and decisions about expenditure on housing, or education (Cousineau and Domar 2007). It can be especially challenging to position infertility as an experience that is part of the life course rather than an end point. Couples can experience isolation from the "fertile world" and experience envy when learning of other women's pregnancies or celebrations of births. Cousineau and Domar (2007) found that women can feel inhibited expressing this to health professionals because of fears that it might influence decisions about further treatments. Redshaw et al. (2006) surveyed 18,503 women who had recently given birth in England and invited the 2.6% (460) who had given birth following infertility treatment to complete a postal survey about their experiences of the technical and psychosocial aspects of care. Responses to open-ended survey questions were analyzed thematically. Themes included that infertility was experienced as unjust and as incurring a burden of uncertainty, and unexpected hurdles, that fertile people were spared. In general, fertile people were found to lack understanding of or empathy about infertility. Treatment was "very physically hard," almost crippling financially, and required women to become expert in techniques and technologies that they had never imagined needing to know about. Some experienced the process as dehumanizing, in particular having unwelcome or disappointing news conveyed in very brief consultations before being shown out to make way for the next "paying patient." Nevertheless, many found that it was helpful to reframe the experience cognitively as an inconvenience rather than being identity-defining, and that it was helpful to be encouraged to concentrate on what the treatment was intended to do rather than what it involved (Redshaw et al. 2006). Cousineau and Domar (2007) found that many, including those who had not conceived, regarded themselves as lucky to have had access to care and treatment.

In addition to the questions raised about whether psychological state influences fertility, there have been questions about whether it influences likelihood of successful assisted conception. Lintsen et al. (2009) investigated whether psychological state influences the likelihood of conception during treatment in a prospective investigation of 783 women receiving care at seven clinics in the Netherlands. Participants were assessed with standardized self-report measures of mood and anxiety prior to initiating treatment and one day before oocyte retrieval. They found that pregnancy was not associated with anxiety or depressive symptoms at either point (Lintsen et al. 2009).

Deciding to Cease Treatment

Infertility treatments do not lead to conception in all couples with fertility difficulties. Deciding when to stop treatment is especially challenging, in particular for women who have not conceived. It can represent a permanent loss of potential parenthood and therefore having to adjust to life without biological progeny. Long-term follow-up studies have examined women's views about and recollections of the experience of infertility treatment. Combining a survey with a medical record audit (Sundby et al. 1994) found that women had experienced discontinuity of treatment in the public sector with separate doctors for each consultation and one-third had left treatment without a formal termination being documented. Those who had a child were satisfied with treatment, but less than half who did not conceive were satisfied. Independent of whether a child had been born, 70% were dissatisfied with the emotional support that had been provided by professional staff (Sundby et al. 1994). A follow-up study 6 years after cessation of treatment found that it was recalled as a traumatic life event. Overall, long-term psychological functioning was in the average range, with higher well-being among those with a child compared to those without a child. Those with hostile marital relationships, preexisting psychiatric illnesses or lower levels of education were more psychologically vulnerable in the long term. Similarly, fewer than half the Finnish women studied by Malin et al. (2001) were satisfied with their infertility treatment. The dissatisfaction was higher among older women who had not conceived and the doctor's capacity for empathy and kindness were central to satisfaction. In an Australian study of 116 women 2–3 years after ceasing infertility treatment, Hammarberg et al. (2001) found that those who had not conceived were less satisfied with recalled treatment and clinical care and were less satisfied overall with their lives than those who had baby.

Pregnancy, Birth, and Early Parenting After Assisted Conception

Conceiving after assisted conception is stereotypically regarded as miraculous and exciting. Pregnancy after a prolonged wait, requiring intrusive procedures, and incurring disenfranchised grief, financial costs, and inconvenience is an event to be celebrated. It is also possible that it represents relief for family members and others, that the long period in which reassurance, comfort, and encouragement had to be sustained is over. For clinicians, the technology has worked as predicted, a couple is grateful and appreciative and moves from infertility care to obstetric care, providing a sense of effectiveness and achievement.

However, there is evidence that the psychological aspects of pregnancy, birth, and early parenting after assisted conception might be more complex. Australia has unique residential early parenting services which provide brief admissions to structured psycho-education programs for women with mild to moderate depression and anxiety and infants who are dysregulated and unsettled. In 1993, Barnett et al. (1993) observed that high numbers of women admitted to one residential early parenting service had experienced infertility and assisted conception. In 1997, a similar observation was made in a survey of a consecutive cohort of women admitted to Masada Private Hospital Mother Baby Unit (MPHMBU): 6.5% had conceived with ART when the prevalence of assisted conception in the general population was 1.2% (Fisher et al. 2002). An item about whether conception had been assisted or spontaneous was added to the admission assessment protocol and, subsequently, the medical records of 745 women admitted consecutively to the MPHMBU were audited. Again, it was found that there was a higher proportion (6%) of women who had conceived with ART compared to the rate in the general community (1.52%). This represents a fourfold relative risk of admission following assisted conception. Subsequently, a cohort study of 239 women who had conceived with ART was initiated to identify risks for admission to REPS. They were assessed in the first and third trimesters of pregnancy and 3, 8, and 18 months postpartum. In total, 86% contributed complete data (Fisher et al. 2012). It was found that during pregnancy, participants were significantly more likely than pregnant women in the general community to experience their partners as highly supportive and empathic, and had significantly lower levels of symptoms of anxiety, depression, irritability, fatigue, and functional impairment. However, by 18 months postpartum, 17% compared to 5.5% of women in the general community (Fisher et al. 2011) had been admitted to a REPS. Within this group, risks of admission were primiparity, having received inadequate breastfeeding advice (Hammarberg et al. 2011), having low caregiving confidence when discharged from maternity hospital, and having an unsettled baby (Hammarberg et al. 2009).

Together these data were interpreted as indicating that the state of motherhood might be idealized following assisted conception, and that women can have a fantasy that the baby will bring complete joy. After repeated pregnancy losses, there can be an intense fear that the baby might not live and difficulty believing that breastfeeding will be established. Tolerance of infant crying can be low, with fears that there is something wrong with the baby. Ambivalence is normal after the birth of a baby, but it is possible that after assisted conception, there is difficulty in expressing this and a fear that it will not be received well within social networks. Taken together, caregiving confidence is undermined.

Hammarberg et al. (2008) reviewed 46 papers reporting 28 studies about the psychological and social aspects of pregnancy, childbirth, and early parenting after assisted conception. They found that while emotional well-being and self-esteem were the same in groups of women who conceived with ART or spontaneously, anxiety about fetal viability, and parenting confidence in the first postpartum year, were lower among women who had conceived with ART. Idealization of parenthood might prevent consideration of the inevitable losses associated with having a baby and might limit support seeking.

Fertility Preservation for Nonmedical Indications

Assisted reproductive technologies (ART), including in vitro fertilization (IVF), are effective in treating many causes of infertility but have shown minimal success in overcoming age-related female infertility. Advances in preservation technologies have led to improvements in the successful freezing of eggs. Pregnancy rates using embryos formed with frozen eggs are now comparable to those from fresh oocytes (Cobo et al. 2013). Originally used predominantly to preserve fertility among women prior to treatment of cancers, egg freezing is now available to women seeking to avert the impact of age-related decline in oocyte quality (Hammarberg 2018).

It is promoted as a technology to enable women to pursue career aspirations and financial goals and “delay motherhood.” Pritchard et al. surveyed 193 women who had stored eggs without a medical indication at an infertility service. They found that contrary (Pritchard et al. 2017) to presumptions that this was an active choice to delay motherhood, circumstance, in particular the difficulties experienced by well-educated, professional women in finding a partner willing to commit to parenthood, was the predominant reason to take this action. They also found that women may be acting on media reports or unproven tests of fertility in making these decisions which are very expensive and not as yet associated with assured outcomes in terms of live births.

Other Experiences of Reproductive Technologies

Kirkman and Hammarberg (2014) explain how access to ART is influenced not only by economic and geographic factors but also by social and cultural gatekeeping. Access can be limited to couples, heterosexual people, young people, and affluent people. This inequity of access is leading to a growth in cross-border reproductive care which is travel from one jurisdiction to another, including across state and national borders, to gain access to treatment techniques that are not otherwise available to them. This can include for surrogacy services and purchase of gametes or embryos. Donor-assisted conception was once conducted with assurances of privacy and nondisclosure, but donor-conceived people have advocated for access to their biological heritage and, in some settings, been given access to identifying information about the donor. New technologies are emerging which lead to controversies regarding selection of embryos on the basis of sex or genetic carrier status. All are associated with complex ethical and legal debates about the rights of each party including the child.

Implications for Healthcare

Given the distress that can be experienced by people diagnosed with, and being treated for, infertility their clinicians need to be both medically and psychologically skilled. Mental health professionals providing care for people of reproductive age need to be well informed about fertility and infertility treatments. Cousineau and Domar (2007) argue that explicit consideration of the emotional consequences of infertility and its treatment are integral to high quality care.

Dispositional optimism and a sense of personal agency reduce psychological distress during treatment. As irritability, anxiety, and depressive symptomatology are most intense between embryo transfer and pregnancy testing, it is argued that supportive counselling should be targeted at this interval (Yong et al. 2000). These techniques have been shown to be helpful (Rowe et al. 2017):

- Open-ended questions (e.g., Please tell me about. . .?; How did you feel when. . .?).
- Explicit enquiry using the statement and question method (e.g., "I have met many men experiencing infertility, and they often feel sad, worried, embarrassed, lonely, etc."; followed by the enquiry: "Have you had any feelings of this kind?" or "I would be interested to hear how you are feeling").
- Asking each member of the couple "Who have you talked to about the fertility difficulties?" and "What do you imagine other people's reactions to your situation might be?"
- After providing clinical information, e.g., about the infertility problem or a proposed treatment or the outcome of a cycle, check comprehension by asking the couple to summarize their understanding of what has just been discussed.
- Explaining technical terms in plain language and not assuming that more highly educated people already understand discipline-specific terminology.
- Using person-first language (e.g., the woman/man/person with . . . rather than the infertile woman/man/person).

It is helpful for clinicians to be aware of their personal stereotypes, including, for example, about emotional responses to the confirmation of pregnancy and "miracle babies" being easy to care for. Neutral responses convey permission to express diverse emotions. It is helpful to promote the normality of disenfranchised grief and ambivalence, and the right to complain about the realities of infant care. Statements like ". . .but you have a healthy baby," prohibit the expression of uncertainty and help-seeking. Women who have conceived with ART need active assistance with breastfeeding and education about infant care and it is unhelpful to be told ". . . just trust your intuition."

Conclusion

In conclusion, ART provides people with opportunities for family formation that they might not otherwise have had, but it is not psychologically benign and benefits from psychologically informed approaches to care, to research, and to service development.

Cross-References

▶ Culture and Women's Mental Health

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Menopause and Mental Health

9

Anita Riecher-Rössler

Contents

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_9

Abstract

Menopause is a natural event, which women experience around age 50. It is defined as the final menstrual period and is preceded by many years of "menopausal transition" associated with marked biological and hormonal changes. Although it is a physiological process, especially the fluctuations and final loss of estrogen activity may have a negative impact on mental well-being; lead to vasomotor symptoms, sleep disturbances, sexual problems, cognitive decline, and depressive symptoms; and may even contribute to an upsurge in the incidence of severe mental disorders, such as depressive disorders or schizophrenic psychoses. In addition to these biological changes, for women this phase of life is often burdened with numerous psychosocial stressors, role changes, losses, and the experience of aging.

This has many implications for the clinic and for research. In the clinic the specific diagnostic and therapeutic needs of women of this age group have always to be taken into account. Appropriate treatment strategies should not only include specific psychotherapeutic and psychosocial interventions but also consider estrogen replacement where indicated in addition to standard psychiatric care. The latter of course has always to be based on a thorough individual risk-benefit assessment and decided on in close cooperation with gynecologists and the well-informed woman herself.

While many studies suggest a benefit in perimenopausal depression, there still is a lack of well-designed studies on the indications and contraindications of estrogen replacement in perimenopausal women at risk for or suffering from other mental disorders. Further research is needed, especially regarding perimenopause and schizophrenic psychoses, the relative risk of hormone replacement as compared to treatment with psychoactive drugs, or the best augmentation strategies. Last but not least, we need more research on psychotherapies addressing the specific needs of women of this age group.

Keywords

Menopause · Estrogens · Mood disorders · Schizophrenic psychoses · Hormone replacement · Psychotherapy

Introduction

Women typically experience menopause, defined as the final menstrual period, at a mean age of 49 years with a wide variation ranging from 46 to 52 years, as shown by Schoenaker et al. (2014) in a recent meta-analysis. Mean age might be lower in Africa, Latin America, Asia, and the Middle East (Schoenaker et al. 2014). The menopausal transition with menstrual cycle irregularities and hormonal changes already starts 5–8 years earlier (Roberts and Hickey 2016).

Menopause is a natural event, and transition to menopause is a physiological process which is associated with marked biological and hormonal changes. During menopausal transition, the ovarian production of the hormones estrogen and progesterone decreases, accompanied by strong fluctuations of hormonal blood levels. Then, with menopause, hormone production of the ovaries and menstrual periods stop permanently, and women are no longer able to bear children. Especially the fluctuations and final loss of estrogen activity may have a negative impact on mental well-being; lead to vasomotor symptoms, sleep disturbances, sexual problems, cognitive decline, and depressive symptoms; and may even contribute to an upsurge in the incidence of severe mental disorders, such as depressive disorders or schizophrenic psychoses. In addition to these biological changes, for women this phase of life is often burdened with numerous psychosocial events and stressors of midlife and with the aging process (Hoga et al. 2015). Not only do they sometimes realize their physical aging quite harshly during this process, but at the same time often first health problems arise in themselves, their partners, or parents. Sexual and relational problems might occur. Children might leave the house. And women might feel the need to reevaluate their life expectations.

Nowadays, the average life expectancy of women in many societies exceeds 80 years. Consequently, women now spend more than one-third of their lives after menopause. This has not always been the case. Not more than one century ago, women's life expectancy was so low that they often did not live much longer than until the age of menopause. That means, historically we are confronted with a relatively new situation. The great challenge for doctors, psychiatrists, and psychotherapists now is to secure women's mental well-being and physical health during the menopausal transition and the long period thereafter.

What Is Menopause?

Definitions and Timespan

"Menopause" refers specifically to the last menstrual period, which can only be confirmed retrospectively. The term "perimenopause" (also called "menopausal transition" or "climacteric") refers to the period with irregular menstrual cycles prior to menopause through to a year after the last period. "Postmenopause" refers to all years following the final menstrual period (Table 1). According to the widely accepted STRAW (STages of Reproductive Aging Workshop) staging system, the perimenopause can further be subdivided into three stages: (i) early menopausal transition or early perimenopause with persistent irregularity of the menstrual cycle; (ii) late menopausal transition or late perimenopause, characterized by an interval of amenorrhea of $\geq$60 days in the prior 12 months; and (iii) early postmenopause, corresponding to the 1st year following the final menstrual period.

Apart from that, there can be "premature ovarian insufficiency/failure" with a cessation of menses prior to the age of 40 years, and there can be "surgical menopause," when ovaries are removed for various reasons.

Table 1 Definitions

Menopause	Permanent cessation of menstruation resulting from loss of ovarian follicular activity (at least 12 months amenorrhea)
Perimenopause	Period immediately before menopause – when endocrinological, biological, and clinical features of approaching menopause begin – till the end of the first year after menopause
Postmenopause	After menopause

Source: Riecher-Rössler and de Geyter (2007)

Physiological Changes

The main cause of the menopausal transition seems to be the natural depletion and aging of the finite ovarian reserve of oocytes. This is characterized not only by a marked decline and often dramatic fluctuations of sex hormones but also by increasing follicle-stimulating hormone (FSH) levels. Then, with menopause there occurs a sharp decrease in estradiol and progesterone production by the ovaries. This substantial fall in circulating estradiol levels impacts many tissues from the brain to the skin (see below).

General Symptoms

The main symptoms of menopause seem to be vasomotor symptoms, vaginal dryness/dyspareunia, difficulty sleeping/insomnia, and adverse mood/depression (Santoro et al. 2015). Table 2 shows an overview of all symptoms based on a review by Monteleone et al. (2018). Up to three quarters of all women experience vasomotor symptoms with hot flushes and sweating, sometimes followed by a feeling of cold and shivering (Monteleone et al. 2018). These symptoms, which continue for 4 years in approximately half of all women and in some women much longer, can massively influence the quality of life and sleep as well as work performance. About 30–60% of women suffer from vulvo-vaginal atrophy with vaginal dryness and pain during intercourse (Santoro et al. 2015; Monteleone et al. 2018).The prevalence of some symptoms seems to vary considerably between geographical regions and ethnicities (Monteleone et al. 2018).

Diagnosis

According to the National Institute for Health and Care Excellence (NICE) guidelines (Lumsden 2016), clinically menopause and perimenopause should be diagnosed as follows:

In otherwise, healthy women aged over 45 years with menopausal symptoms diagnose:

- Perimenopause based on vasomotor symptoms and irregular periods
- Menopause in women who have not had a menstrual period for at least 12 months (and are not using hormonal contraception)
- Menopause based on symptoms in women without a uterus

Table 2 Overview of menopausal symptoms

Central nervous system	Vasomotor symptoms
	Sleep disruption
	Depression and anxiety
	Cognitive changes
	Migraine
Skin, mucosal, and hair changes	Reduced skin thickness
	Reduced elasticity
	Reduced hydration
	Increased wrinkling
	Hair loss
Weight and metabolic changes	Weight gain
	Increased visceral adiposity
	Increased waist circumference
Sexual function	Decreased sexual desire
	Dyspareunia
Urogenital system	Vaginal dryness
	Vulvar itching and burning
	Dysuria
	Urinary frequency
	Urgency
	Recurrent lower urinary tract infections
Musculoskeletal system	Joint pain
	Sarcopenia

Source: Monteleone et al. (2018)

In younger women under age 45 years with menopausal symptoms and change in their menstrual cycle, an additional FSH test can be considered (with an increase of FSH indicating perimenopause).

Influence of Menopause on Mental Health

Controversial Issues

There are many controversial issues around the topic of menopause. Thus, for instance, there is a lot of discussion whether the incidence of mental disorders, such as depression, is really increased around or after menopause. And if so, the reasons for that are far from clear. Is it mainly the impact of hormonal changes occurring with menopause? Or is it more the influence of general biological changes emerging with aging? And/or is it rather the psychosocial changes happening during this age period in many women's lives? It has also been questioned whether women in and around menopause really have specific diagnostic and therapeutic needs or whether this would be just a "medicalization" of a physiological process. Especially harsh and often led by ideology rather than by evidence were the discussions about hormone replacement for women in that age group.

In the following it will be tried to resolve these questions and controversies as far as possible.

Methodological and Other Problems

Research on the relationship between menopause and mental health shows some difficulties and methodological limitations, which shall be briefly described here before reviewing the results of studies.

First of all, "menopause" has sometimes not been clearly defined and not well distinguished from "perimenopause" and "postmenopause." Often, also no distinction was made between early and late postmenopause, although they differ in many respects. Furthermore, studies sometimes do not clearly state if results concern only natural or also premature or surgical menopause.

Many studies have only examined cross-sectionally. Certain questions, e.g., regarding an increase in the incidence of mental disorders, however, can only be answered by longitudinal studies. Longitudinal studies that did find associations between psychopathology and the menopausal transition used binary or dichotomized outcomes, which may be problematic from a methodological and conceptual point of view (Rössler et al. 2016). Some studies were conducted only retrospectively. Another problem is that some studies did not clearly differentiate between incidence and prevalence or between a simple deterioration of mental well-being and the onset of a severe mental disorder. Also, studies were often only based on clinical samples as opposed to community-based samples. Results of such studies cannot be generalized to the general population of all menopausal women.

Further problems arise from the fact that the interpretation of the impact of menopause on psychological symptoms is very difficult. Hence, it can be hard to differentiate between the influences of normal aging and those of menopausal transition, i.e., the manifold biological and psychosocial changes occurring during this time period anyway and the influence of hormonal changes.

Regarding the impact of the loss of sex hormones themselves, it is not clear if the main problem is the actual loss or rather the fluctuations of hormones and if it is only the direct estrogen effects on the brain or also the vegetative effects of fluctuating estrogens such as hot flushes and night sweats which influence mental well-being (domino theory). Finally, it has to be kept in mind that the menopausal transition usually should not be regarded as *causal* factor but rather as a trigger that can provoke mental symptoms or even disorders in predisposed, vulnerable women.

How Can Estrogens Influence Mental Health?

The main physiological changes during transition to menopause are the strong fluctuations and decrease of estrogen levels. These changes might negatively influence mental well-being, since at the same time estrogens are known to have many neuro- and psychoprotective properties.

This is especially true for 17-β-estradiol, the natural estrogen that is most active in the brain (McCarthy 2008). It is known to promote neuronal sprouting and myelination, to enhance synaptic density and plasticity, to facilitate neuronal connectivity, to act as an anti-inflammatory and antioxidant, to inhibit neuronal cell death, to improve cerebral blood flow and glucose metabolism, and it might mediate BDNF expression and activity and positively influence mitochondrial function (for reviews, see McEwen and Milner 2017; Riecher-Rössler 2017; Shimamoto and Rappeneau 2017). Most relevant in the context of mental health is the fact that 17-β-estradiol obviously can modulate different neurotransmitter systems, such as the serotonergic, the noradrenergic, the dopaminergic, the glutamatergic, and the cholinergic systems (for reviews, see Barth et al. 2015; Gogos et al. 2015; Riecher-Rössler 2017).

It has even been suggested that 17-β-estradiol should be regarded as a neurotransmitter itself (Balthazart and Ball 2006), and it has been called nature's psychoprotectant (Fink et al. 1996).

Estrogens not only act via the classical genomic pathway but also have nongenomic, rapid interactions. Estrogen receptors are expressed in many areas of the human brain associated with neuroendocrine function as well as with emotion, memory, and cognition. Estrogens seem to have multiple effects on mental functioning (for reviews, see Gillies and McArthur 2010; Watson et al. 2010; Riecher-Rössler 2017). They seem to increase affective symptoms (Soares et al. 2001; Rasgon et al. 2002; Schiff et al. 2005; Karsidag et al. 2012; Gleason et al. 2015; for reviews, see Gillies and McArthur 2010; Fischer et al. 2014; Soares 2014; Toffol et al. 2015), aggressive and suicidal behavior (for review, see Riecher-Rössler 2003), and cognitive functioning (for reviews, see Maki and Dumas 2009; Pompili et al. 2012b; Boss et al. 2014; Fischer et al. 2014; Weickert et al. 2015; Brzezinski et al. 2017); seem to be stress-protective (Goldstein et al. 2010; Albert et al. 2015); and have antipsychotic properties (for reviews, see Riecher-Rössler and Kulkarni 2011; Seeman 2012; Brzezinski et al. 2017).

Based on this short overview of estrogen's properties, it seems likely that the fluctuation and loss of this hormone in the perimenopausal transition might also influence women's mental health, at least in those who are vulnerable for developing mental problems.

Other Medical Aspects

Mental well-being of women in the perimenopause might deteriorate not only because of direct hormonal influences on the brain and the suffering from vegetative symptoms of menopause but also because of the manifold other physical problems that can occur with declining estrogen levels (see Table 2). These problems overlap with the general physical process of aging. In women with mental disorders, there may be additional medical problems, as will be discussed in the sections below.

Psychosocial Influences

Women of the age group in which menopausal transition usually occurs, that is, age 40–55 years, are at the same time often also confronted with manifold losses, role changes, and psychosocial stressors (Hoga et al. 2015). Children might leave the home in this phase of women's lives. They might also lose their partners or parents and feel lonely. They might be burdened by the illness of parents, close relatives, or friends. They might have to face multiple role transitions privately and also professionally. For example, if they did not have a fulltime job during motherhood, they will have to newly define their professional goals. All in all, long established roles in partnership, family, and profession might have to be re-evaluated.

Complex Interactions

Some of these problems are interconnected with the menopausal changes. Thus, for example, night sweats might contribute to sleep disturbances, resulting in irritability and as a consequence of this possibly also relationship problems. The loss of libido or dyspareunia some women experience might contribute to partnership problems or at least not be helpful in resolving them. The relationship problems then might contribute to depressive symptoms. Skin and hair changes as well as weight gain induced by hormonal changes might reduce self-esteem and thereby further contribute to the development of depression. Changes in the muscular-skeletal system with joint pain might prevent women from physical activities and sports, which usually would be protective factors for mental health and helpful coping mechanisms.

All in all, there seems to be quite a lot of interplay between aging, hormonal changes, and psychosocial changes in women of this age group, which can make them especially vulnerable.

Menopause and Specific Mental Disorders

Mood Disorders

Depression

Perimenopause seems to be clearly associated with an increase in depressive *symptoms*. However, there has been an ongoing debate whether it is also associated with an increased incidence of major depressive *disorders* (Riecher-Rössler and de Geyter 2007; Soares 2014; Rössler et al. 2016). First prospective cohort studies had not found an association between menopausal transition and mood (Vesco et al. 2007), while more recent longitudinal studies performed in the USA have reported an increase of depressive symptoms (Cohen et al. 2006; Freeman et al. 2006; Bromberger et al. 2010, 2011) and major depression (Cohen et al. 2006; Freeman et al. 2006; Bromberger et al. 2010, 2011).

Thus, Freeman et al. (2006), in a population-based cohort of 231 women aged 35–47 without previous depression, whom they followed up for 8 years, found new onset depressive disorders to be 2.5 times more frequent during the menopausal transition as compared to premenopause. Depressive symptoms correlated with an increase of FSH, LH, and inhibin B and a greater variability of estradiol and FSH, suggesting that fluctuating rather than absolute hormone levels trigger depressive symptoms. They concluded that cyclic fluctuations of estradiol might have a destabilizing effect on women's mental health. Similarly, Cohen et al. (2006), in a population-based cohort of 643 women aged 36–45 without previous depression (follow-up 36 months), found a twofold increase of depressive symptoms and depressive disorders during menopausal transition, especially in those with hot flushes. Depressive symptoms were additionally associated with adverse life events. Interestingly, depressive disorders were not increased in women who took hormone replacement. Bromberger et al. (2010, 2011), in two population-based cohorts of 3,302 and 221 women aged 42–52 during a follow-up of up to 10 years, found a significant increase of depressive symptoms and a two- to fourfold increase of major depressive disorders in the perimenopause and early postmenopause. This finding was independent of the presence of vasomotor symptoms or stressful life events. A history of depression was the strongest predictor of depression.

In the Zurich study (Rössler et al. 2016), 168 women from a population-based Swiss community cohort study were prospectively followed up from age 21 to 50. Irritability/nervousness was increased in perimenopausal women, but not the prevalence rates of major depressive episodes. Preceding mental health problems and neuroticism trait scores as well as concurrent psychosocial distress were significantly related to mental health problems occurring between ages 41 and 50.

With regard to risk factors for depressive symptoms in the menopausal transition, some studies pointed to psychosocial factors such as changes in family structure and losses, role transitions, stressful or adverse life events, or low social support (Weissman 2000; Hardy and Kuh 2002; Cohen et al. 2006; Vesco et al. 2007; Bromberger et al. 2010). Personality traits like neuroticism might be another predictor (Li et al. 2008; Rössler et al. 2016). However, most studies found prior depression to be the main risk factor, particularly prior depression that was related to hormonal changes, e.g., prior postpartum depression or prior premenstrual mood dysphoric disorder (PMDD) (Freeman et al. 2004; Vivian-Taylor and Hickey 2014). This suggests that belonging to a subgroup sensitive to estrogen withdrawal increases the risk for developing depressive symptoms in the menopausal transition (Bloch et al. 2000). Furthermore, a decline in physical health, in libido, and in the "reproductive potential" as well as negative attitudes to aging and menopause may negatively impact on mood (Vivian-Taylor and Hickey 2014). Women who suffer from general menopausal symptoms such as hot flushes, sleep disturbances, or vasomotor symptoms also seem to be at increased risk for depressive symptoms

Table 3 Risk factors for depressive symptoms in the menopausal transition

Prior depression
Belonging to a subgroup sensitive to estrogen withdrawal (e.g., prior postpartum depression, or premenstrual mood dysphoric disorder)
No hormone substitution
Surgical menopause
Late or prolonged menopausal transition
Hot flushes, sleep disturbances, vasomotor symptoms
Psychosocial factors:
Changes in family structure, losses, role transitions
Stressful or negative life events
Low social support

Sources: Bloch et al. (2000), Weissman (2000), Dennerstein et al. (2004), Freeman et al. (2004), Freeman (2010), Bromberger et al. (2010), Kornstein et al. (2010)

(Freeman et al. 2004; Freeman 2010; Bromberger et al. 2010). The same might be true if the menopausal transition is very late or prolonged (Dennerstein et al. 2004; Kornstein et al. 2010), if there is an abrupt surgical menopause (Dennerstein et al. 2004) and no hormonal substitution (Dennerstein et al. 2004). So, all in all, prior depression seems to be the main risk factor for perimenopausal depression. Estrogen withdrawal and fluctuations seem to play a role as trigger especially in a subgroup sensitive to this. Psychosocial stressors can be additional triggers interacting with biological changes (Table 3).

With regard to later *post*menopause, studies are more contradictory (for review, see Riecher-Rössler and de Geyter 2007). In this context, it is very interesting to look at the so-called gender gap in the incidence and prevalence of depression, which refers to the fact that depressive disorders are about twice as frequent in women as in men from young adulthood onwards (Seedat et al. 2009; Steel et al. 2014; Boyd et al. 2015; Jacobi et al. 2015), and this preponderance of women in depression continues into old age as a recent epidemiological modelling based on 98 million cases globally showed (Ferrari et al. 2013).

It has also been shown that depression in younger women is sometimes associated with early ovarian insufficiency long before the normal age of perimenopause. The reason for this and the causal direction are not clear. It might be due to the stress associated with depression and/or antidepressant medication (Young et al. 2000; Harlow et al. 2003).

Schizophrenic Psychoses

Also the risk for women of developing schizophrenic psychoses around the age of menopause is significantly increased.

Already in the last century, Manfred Bleuler noted that “late-onset schizophrenia,” i.e., schizophrenia with onset after age 40, was much more frequent

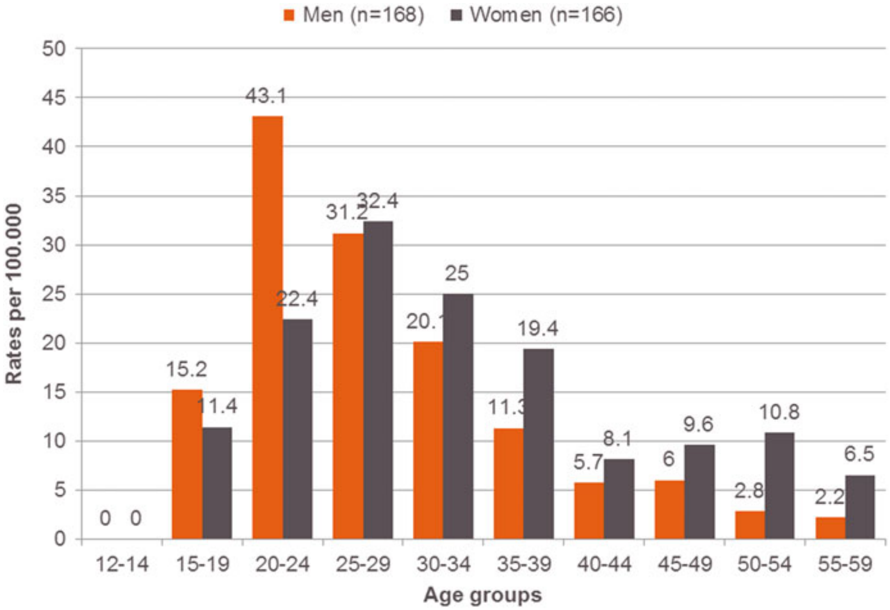

Fig. 1 Sex-specific age distribution at first admission for schizophrenia, narrow definition (ICD-9: 295) (ABC study). For broad definition (ICD-9: 295, 297, 298.3; 298.4) (see Häfner et al. 1991a, b)

in women than in men, a finding he attributed already then to the "loss of ovarian function" starting at around that age (Riecher-Rössler and Häfner 1993). In a study of a large representative population of 392 first-admitted patients with schizophrenic psychoses from a big catchment area of 1.5 million inhabitants (Riecher-Rössler et al. 1997), we were able to replicate this finding on a methodologically sound basis. The incidence of schizophrenic psychoses in the age group 40–60 years was about twice as high in women as in men. First admission for schizophrenic psychoses after age 40 occurred in only 10% of all men but in about 21% of all women. The first signs of the disorder had occurred on average 4 years before first admission in both sexes. The yearly incidence rate in women over age 40 was 8.9 per 100,000 inhabitants, whereas it was only 4.2 per 100,000 inhabitants in men (Riecher-Rössler et al. 1997) (Fig. 1). Various epidemiological studies have in the meantime confirmed that women develop schizophrenic psychosis on average 4–5 years later than men and also exhibit an additional peak of onsets after age 40 (Riecher-Rössler 2017).

These findings have been explained with the "estrogen protection hypothesis," which postulates that estrogens, especially 17-β-estradiol, are protective against psychosis (Riecher-Rössler and Häfner 1993). This hypothesis has ever since gained support from many laboratory, epidemiological, and clinical studies (for review, see Riecher-Rössler 2017).

According to the estrogen hypothesis, women are to some extent protected against schizophrenia between puberty and menopause by their relatively high gonadal estrogen production during this time (Riecher-Rössler and Häfner 1993). They therefore develop the disorder on average 4–5 years later than men (Häfner et al. 1991a, b, c). Then, after age 40, several years before menopause sets in, estrogen production begins to fall, and thus women lose the protection of estrogens, which could account for their second peak of illness onset after age 40 years (Riecher-Rössler and Häfner 1993).

In addition, we had a very interesting finding regarding the symptomatology and disease course of these late-onset women: Men with onset over age 40 showed significantly milder symptoms and spent less time in hospital than early-onset men, whereas late-onset women suffered from the disease almost as severely as patients who fell ill early in life (Riecher-Rössler et al. 1997).

An explanation for this could again be the protective effect of estrogens: If illness onset in women with a relatively high vulnerability is delayed by estrogens, this high vulnerability will be "unmasked" by the loss of estrogen protection around the time of the menopause (Riecher-Rössler et al. 1997). This would explain why these women are not only more frequently represented in the late-onset group but also have more severe symptoms and a worse course of illness. In addition, this may be related to the depletion of dopamine receptors with age – a decline which seems to be more precipitous in men than in women (Riecher-Rössler 2009).

Well in line with this are the results of long-term schizophrenia studies which have shown that the course of schizophrenia in women tends to deteriorate during the peri- and postmenopause (for review, see Riecher-Rössler 2003, 2005).

In this context, it is important to note that the loss of estrogens certainly is not a causal factor for psychosis but rather a trigger or biological "stressor" in the vulnerability-stress model of the pathogenesis of psychoses. Abnormalities in the cerebral metabolism of dopamine and other neurotransmitters in (genetically) vulnerable women are thought to be involved in causing psychotic symptoms, whereas the loss of estrogenic activity with its dopamine-modulating properties merely seems to trigger the onset in vulnerable women around menopause or might worsen its symptomatology and course.

Premature Ovarian Insufficiency in Women with Schizophrenic Psychoses

Many women with schizophrenic psychoses also seem to suffer from premature ovarian insufficiency or failure. They show menstrual irregularities and reduced blood concentrations of estradiol and progesterone as well as abnormalities of gonadotrophins (follicle-stimulating hormone, luteinizing hormone) accompanied by anovulation and reduced fertility (for review, see Riecher-Rössler 2017). This premature ovarian failure is probably mainly due to hyperprolactinemia, which can suppress gonadal function and is often found in patients with schizophrenic psychoses (Riecher-Rössler 2017). Hyperprolactinemia is a side effect of many antipsychotics but obviously also occurs independently from antipsychotics. Thus, the above-named clinical signs have also been shown long before the introduction of antipsychotics. And women with first episode psychosis retrospectively often reported signs of ovarian insufficiency long before the onset of the disease (Riecher-Rössler 2002). Recently hyperprolactinemia has also been shown in antipsychotic-naïve first episode psychosis or even in at-risk mental state patients, particularly in women.

As a consequence, women with psychosis might develop reduced bone mineral density (Markham 2012; Maric et al. 2005) and possibly other problems connected to the early loss of estrogens – similar to those of natural menopause (Riecher-Rössler et al. 1998, 2009) (see above).

Therapy and Prophylaxis

Estrogenic Replacement

Intervention Studies

In women with mental problems during menopause, many intervention studies with estrogen replacement have been performed, especially in depression (Soares et al. 2001; Rasgon et al. 2002; Schiff et al. 2005; Karsidag et al. 2012; for reviews, see Riecher-Rössler and de Geyter 2007; Gordon and Girdler 2014; Fischer et al. 2014; Soares 2014; Rubinow et al. 2015; Toffol et al. 2015) but also in schizophrenic psychoses (for reviews, see Brzezinski et al. 2017; Riecher-Rössler 2017).

In women with *schizophrenic psychoses*, the addition of transdermally delivered 17-β-estradiol to standard antipsychotics seems to be associated with a significant reduction of psychotic and other, particularly depressive, symptoms and potentially also with cognitive improvements (for review, see Riecher-Rössler and Kulkarni 2011). However, most studies have been performed in young women, although the greatest effect of estrogen treatment would be expected in *peri- and postmenopausal* women with estrogen fluctuations and deficiency. There was only a small study by Good et al. (1999) in postmenopausal women with schizophrenic psychoses who showed a significant improvement of verbal memory with hormone replacement. A community study of postmenopausal women with schizophrenia showed less severe negative symptoms in those with hormone replacement therapy. Furthermore, in this study hormone replacement therapy seemed to reduce the need for antipsychotics, as shown by lower doses (Lindamer et al. 2001). There are also some case reports with positive results of hormone replacement therapy in postmenopausal women with schizophrenia (Lindamer et al. 1997; Bergemann et al. 2007).

In women with *perimenopausal depression*, intervention studies with estrogens show clearer results with quite positive therapeutic effects. In a first meta-analysis of 26 studies, estrogen substitution was shown to be helpful in mild depressive symptoms, especially in the perimenopause, less so in postmenopause (Zweifel and O’Brien 1997). Also more recent randomized placebo-controlled studies showed significant positive effects of estrogen replacement on mood (Onalan et al. 2005; Schiff et al. 2005; Karsidag et al. 2012). They have found estrogens even to be effective in depressive disorders fulfilling DSM criteria (Schmidt et al. 2000; Soares et al. 2001; Rasgon et al. 2002; Cohen et al. 2003; Morgan et al. 2005). There are also studies at odds with this finding (Morrison et al. 2004; Kornstein et al. 2013). Thus, in the (STAR∗D) study women with hormone replacement had no better remission than those without (Kornstein et al. 2013). On the other hand, it has to be noted that many studies were small, started with hormone replacement only years after menopause or used less potent forms of estrogens (Wharton et al. 2013). Or they did not treat women with depression but rather measured the effect on mood in healthy women (Onalan et al. 2005; Gleason et al. 2015).

Recent studies suggest that especially transdermally applied 17-β-estradiol shows very good remission rates in women with onset of depression during perimenopause (for review, see Gordon and Girdler 2014). This is probably due to the fact that 17-β-estradiol is the estrogen most active in the brain and also shows the best bioavailability and the most constant blood concentrations. The latter is believed to be important to stabilize the fluctuating estrogen levels and thereby to reduce women's sensitivity to stress (Gordon and Girdler 2014).

Critical Reappraisal of Estrogen Replacement

Estrogen replacement in perimenopause and postmenopause has been challenged by several studies, especially by the Women's Health Initiative (WHI) study, because of suspected side effects (Hlatky et al. 2002; Rossouw et al. 2002). However, the WHI study was criticized by many experts (Birkhäuser et al. 2008; Santen et al. 2010; Gurney et al. 2014) for methodological flaws, particularly the high age of the women studied (mean age 63) and their high prevalence of cardiovascular risk factors. Thus, many of the complications reported were probably associated with pre-existing risk factors. A reanalysis of the WHI data could not confirm the complications, but rather showed a cardiovascular benefit when estrogen replacement was started early after menopause (Rossouw et al. 2007). There seems to be a "window of opportunity" for starting hormone replacement (Rossouw et al. 2007; Santen et al. 2010; Azcoitia et al. 2011; McCarrey and Resnick 2015). Furthermore, the WHI study had used continuous conjugated equine estrogen rather than physiological estradiol which is known to have fewer side effects. They also gave it orally rather than transdermally as recommended in the meantime. And they combined it with the progestogen medroxyprogesterone acetate, which may be responsible for a slightly increased risk of breast cancer if given for more than 7 years (Santen et al. 2010; Cobin et al. 2017). If treatment starts early and 17-β-estradiol is given, also a protective effect on memory has been shown (Sherwin 2005; Azcoitia et al. 2011). A recent meta-analysis has indicated an increased risk for certain ovarian cancers (Collaborative Group on Epidemiological Studies of Ovarian Cancer et al. 2015), a finding which certainly has to be further studied. However, a recent meta-analysis on 43 RCTs found menopausal hormone therapy not to increase mortality, neither all-cause nor cardiac deaths or those from stroke or cancer (Benkhadra et al. 2015) (see also Table 4).

A very important argument in the controversy about the advantages and disadvantages of estrogen substitution is the distinction between a preventative application and a therapeutic use. In women with a mental disorder, estradiol would be used

Table 4 Some important effects of estrogen replacement in the menopause

Positive	
Perimenopausal complaints ↓	
Physical: hot flushes, genital discomfort, aging of collagen (skin, joints, intervertebral discs) ↓	
Mental: depression, irritability, emotional lability, sleep problems in those with vasomotor symptoms (psychotic symptoms?) ↓	
Risk of osteoporosis and fragility fracture ↓	
Delay of cognitive decline and Morbus Alzheimer?	
Cardiovascular protection? (only if started right after menopause)	
Negative	
Endometrial carcinoma ↑ if unopposed estrogens are administered	→ In women without hysterectomy combine with micronized progesterone!
Risk of breast cancer ↑? probably due to combination with progestogen	→ Do not apply in patients with a familiar or own risk and usually not longer than 7 years!
Risk of thrombosis and cerebral insult ↑?	→ No prescription for patients at risk!
Risks of coronary heart disease ↑?	→ Rather use 17-β-estradiol and transdermal application
	→ Start only within the first 10 years after menopause and do not apply in patients aged >60!
Risk of ovarian cancer ↑?	

Sources: Rossouw et al. (2007), Riecher-Rössler (2009), Santen et al. (2010), Pompili et al. (2012a), NICE guideline – Menopause: diagnosis and management (2015), de Villiers et al. (2013), L'Hermite (2013), Rozenberg et al. (2013), Gurney et al. (2014), Cobin et al. (2017), Collaborative Group on Epidemiological Studies of Ovarian Cancer et al. (2015), Cintron et al. (2017), The 2017 hormone therapy position statement of The North American Menopause Society (2017)

therapeutically. Potential side-effects here would have to be outweighed by the benefits and compared to the side effects of antipsychotics and other adjunct medications. *Prophylactic* estradiol replacement as used in the WHI study has to fulfil much higher safety requirements. Nevertheless, it was suggested by a recent study for prophylaxis of depression in perimenopausal and early postmenopausal women (Gordon et al. 2018).

In any case, pros and cons have to be carefully assessed in each woman individually, and the final decision has to be made by a well-informed woman herself based on an individual risk-benefit assessment. It goes without saying that estrogens should only be substituted in women without risk factors, in close cooperation with a gynecologist, and with close monitoring. The challenge here is that after the first alarming results of the WHI study (Rossouw et al. 2002), not all professionals and patients have been kept updated with newer, contrasting results and now "overestimate the risks and contraindications, and underestimate the impact of menopausal symptoms on a woman's quality of life" (NICE guideline – Menopause: diagnosis and management 2015).

Psychiatrists should have sufficient knowledge to be advisors of their patients and cooperation partners of gynecologists. To this end they should know the best mode of hormone replacement (Riecher-Rössler and Kulkarni 2011). The natural

Table 5 Therapy of depression in perimenopausal women – indications for estrogen replacement

In perimenopause (not in postmenopause)?
Especially, if first lifetime onset in perimenopause
If estrogen-sensitive depression (history of PMDD or of postpartum depression)
In mild to moderate depression
If no risk factors/contraindications
If a well-informed woman wishes estrogens
If additional indications for estrogen replacement (e.g., no FDA approval for depression)
For therapy, not prophylaxis
Not after age 60
Use of 17-β-estradiol
Low dose
Prefer transdermal application
For endometrial protection a progestogen has to be added (unless patient had hysterectomy). Prefer low-androgenic progestogens and add sequentially (e.g., micronized nature-identical progesterone, dydrogesterone, or cyproterone acetate)

Bloch et al. (2000), Schmidt et al. (2000), Altshuler et al. (2001), Joffe et al. (2003), Riecher-Rössler and de Geyter (2007), Birkhäuser et al. (2008), McCarthy (2008), Sturdee et al. (2011), Rozenberg et al. (2013), Gordon and Girdler (2014)

17-β-estradiol seems to be the estrogen with the best benefit-risk profile and transdermal application (patches or gel) to have fewer side effects (L'Hermite 2013). Progestogens have to be added to estrogens for endometrial protection if a woman still has her uterus. Here the natural, "body identical," micronized progesterone seems to be the one with the least side effects (L'Hermite 2013).

Consequences for Prophylaxis and Therapy

Taken together, hormone replacement in the perimenopause is a possible therapeutic option for some women after careful consideration of pros and cons. In women with *schizophrenic psychoses*, it could be used as an augmentation strategy/adjunct to antipsychotic medication. Possibly the dose of antipsychotics could then be reduced and corresponding side effects of antipsychotics minimized.

Also in women with perimenopausal depression, hormone replacement could be an option, especially in certain cases as summarized in Table 5. In some cases of only mild depression, this treatment might be sufficient. In women with more severe depression, antidepressants are also needed (Riecher-Rössler and de Geyter 2007; Birkhäuser et al. 2008; Sturdee et al. 2011).

It has to be noted that there is no official approval in many countries for estrogen replacement for treating mental disorders, but there are often additional approved indications for its use in the individual woman. Thus, estrogen replacement for women of this age group has been recommended, for example, as prophylaxis of osteoporosis. Most importantly, estrogen replacement in women with mental disorders might not only have direct but also indirect positive effects on mental well-being. Thus, by attenuating perimenopausal complaints such as hot flushes, night sweats with sleep disturbances, and general irritability, it might contribute to a general improvement of the mental state and prevent relapses. Other important positive effects of estrogens for these women could be the supposed improvement of cognition, stress vulnerability, aggression, and suicidality (see above and Table 4).

Further research into estrogen treatment as additional indication in perimenopausal women with schizophrenic and depressive disorders is urgently needed.

Novel Compounds: SERMs and Other Hormones

Alternatives to conventional hormone replacement are being investigated to avoid the side effects of hormonal therapy. Possible candidates are selective estrogen receptor modulators (SERMs) which – depending on the target tissue – have agonistic or antagonistic properties. Raloxifene, for example, which exerts its main effects on the bone, might also act on different brain receptors (Landry et al. 2002). In postmenopausal women with schizophrenia, it might improve negative and total symptoms and possibly also cognition (for reviews, see Seeman and Fitzgerald 2000; Riecher-Rössler 2017). In a recent meta-analysis, Wang et al. (2018) also found beneficial effects on psychotic symptoms in postmenopausal women with schizophrenia. It might also improve depressive symptoms (Usall et al. 2011). However, results are variable, which might be due to different individual genetic profiles of women (Gonzalez-Rodriguez and Seeman 2018). Although the use of raloxifene is relatively safe, a low risk of blood clots and deep vein thrombosis was reported (Cobin et al. 2017; Weickert et al. 2015) as well as other risks and side effects (Gonzalez-Rodriguez and Seeman 2018).

Management of Premature Menopause

As there is growing evidence for quite a number of women with depression and especially with schizophrenic psychoses having a premature ovarian insufficiency, this condition should be taken more seriously in future. That means that history taking also in younger women should always include questions regarding menstrual irregularities, amenorrhea, loss of libido, anorgasmia, infertility, and galactorrhea. If there are any clinical suggestions of estrogen deficiency, prolactin levels should be tested. In case of hyperprolactinemia, prolactin-sparing antipsychotics should be preferred (Riecher-Rössler 2017). However, switching to such an antipsychotic cannot be done without prior contraception counselling, because when prolactin production has gone back to normal, gonadal function and ovulation will be restored with a high risk of unplanned pregnancy. Alternatively, if switching the antipsychotic is not an option, hormone substitution even in these young women has to be taken into consideration (Riecher-Rössler 2017).

Psychopharmacotherapy

Psychopharmacotherapy for peri- and postmenopausal women should follow the usual guidelines for the respective disorder. Estradiol can be used in a first step or added as an adjunct in the above described cases.

Generally, there seems to be a lack of attention to the special needs of peri- and postmenopausal women regarding psychopharmacotherapy. Special requirements for women should always be considered, such as gender differences in pharmacodynamics and pharmacokinetics or the interaction of medication with sex hormones (for review, see Haack et al. 2009; Sramek and Cutler 2011; Gonzalez-Rodriguez and Seeman 2018).

Selective serotonin reuptake inhibitors (SSRIs) are not only effective against depression but also seem to reduce hot flushes and can be used for this indication in women who cannot or do not want to use estrogens (Cobin et al. 2017). In this context it is important to note that estrogens increase serotonergic activity in the brain and that postmenopausal women show a decreased response to SSRI (Sramek and Cutler 2011), while perimenopausal women *with hormone replacement* show an improved response to SSRIs (Stahl 2001; Morgan et al. 2005). As a caveat it has to be noted that in breast cancer patients, fluoxetine and paroxetine can often not be used because they inhibit the effect of tamoxifen (Cobin et al. 2017).

In women with schizophrenic psychoses, an increase of metabolic, cardiovascular, and neurologic side effects, such as tardive dyskinesia, was described (Gonzalez-Rodriguez and Seeman 2018; Seeman and Fitzgerald 2000). Therefore, antipsychotic treatment may need to be modified, and cardiac and metabolic health indices need to be more closely monitored (Seeman 2013). This increase of side effects in postmenopausal women might be due to estrogen withdrawal (Seeman and Fitzgerald 2000) and might also be a consequence of the higher doses of antipsychotics required after menopause due to increasing psychotic symptoms (Gonzalez-Rodriguez and Seeman 2018).

Psychotherapy

Psychotherapy in this age group should not only pay special attention to the manifold ongoing stressors and losses but also to women's subjective experience of the menopause, including their physical complaints, their fears and beliefs regarding menopause and the experienced changes, and their femininity and sexuality (Hoga et al. 2015).

Psychotherapy for women in general has to consider sex-specific risk and influencing factors. This is not only true for younger women but also for women in the perimenopause. Gender-specific socialization, gender roles, and gender role stereotypes as well as low self-esteem have often prevented women from pursuing their goals. With all the role changes in the age around perimenopause, they might for the first time realize this. Old, suppressed role conflicts might get virulent and have to be worked on in psychotherapy.

The role changes often imposed on women in this age group should be addressed as should the ongoing burdens and conflicts, such as dependencies in partnership and professional life – be it emotionally or financially – or experiences of discrimination, violence, and abuse (Garcia-Moreno and Riecher-Rössler 2013). Further topics can be the lack of appreciation women often experience, especially in this age group, or the lack of support or poverty. All these are risk factors for depression (Kuehner 2003, 2017). Women in this age group are also often burdened by the problems of others in their social network, which has been called “cost of caring.” Psychotherapy should help women to cope with the multifold role changes, conflicts, and burdens and to develop more self-confidence. Women often have to be “empowered” so that they can actively cope with their situation, discover their resources, pursue their goals, or redefine them. Most importantly, psychotherapy should enable women to counteract their well-known tendency to internalize conflicts, to ruminate, and to develop feelings of insufficiency and guilt and thereby depression (Nolen-Hoeksema 2012; Riecher-Rössler 2016; Belz and Riecher-Rössler 2017).

Women with schizophrenia, moreover, often have a very small social network and suffer from loneliness, which might even get worse with aging. They often have not married, are not in stable partnerships, and have no children. Previously supportive parents might now not be able to care for their daughter anymore, or the death of the parents might mean that she loses her main relationships. They might also lose other relatives or caretakers. They might not have regular work and contact with colleagues, and their socioeconomic situation might be especially poor, which might be even more stressful with increasing age. Thus, women with schizophrenia often need a lot of social support, especially in this age group around and after menopause.

Other Therapeutic Approaches

Treatment recommendations for women in this age group of course do have to consider not only hormone replacement, medication, and psychotherapy but also women’s physical condition and their social needs and desires. Ultimately, a combination of effective biological plus psychosocial treatments tailored to the patient’s individual needs, to her illness, as well as to the age group and the menopausal status are needed.

Complementary and “alternative” medicine has become increasingly popular in the last decades (Peng et al. 2014), especially after the confusion about risks and benefits of hormone therapy. In the meantime, a wide array of botanic medicine is offered, but evidence on efficacy and safety is very limited (Taylor 2015; Comhaire and Depypere 2015; Peng et al. 2014).

More methodologically rigorous studies in this area are needed and a better communication between health-care providers and patients. Women also require more information about menopause and the physiological changes occurring with it, in order to increase self-management and improve symptom management and coping strategies (Yazdkhasti et al. 2015). Menopause awareness has to be increased and the stigma often still associated with it to be challenged. Courses for such empowerment have been developed (Bellot et al. 2018).

As described above, in addition to their mental problems women might suffer from manifold physical problems due to menopause, both often being very much intertwined. Women with mental disorders are even at an excess risk for physical problems. This can be on the one hand due to their illness behavior, such as physical inactivity, poor diet, or excessive smoking, and on the other hand due to long-term medications, which can be associated with all sorts of side effects, such as metabolic syndrome, osteopenia, or osteoporosis. Moreover, thyroid function may be altered after menopause and influence mental well-being. Other frequently occurring medical illnesses are respiratory ailments or cardiovascular problems, especially in women with schizophrenia. Unfortunately, this patient group is at great risk for neglecting their psychiatric as well as their general health needs, and this might especially be a problem in the elderly. Thus, for example, in a study by Lindamer et al. (2003), elderly women with schizophrenia were less likely to have had pelvic examinations and Pap smears or mammograms than women without psychiatric diagnoses. Women of this age group should therefore be carefully monitored regarding their physical health with routine physical checkups, including blood pressure, weight, and laboratory tests (glucose, lipids, etc.), EEG, mammography, and Pap smears.

Conclusions

Menopause is a physiological event but is accompanied by massive hormonal and other biological alterations and often also manifold psychosocial changes. All these changes can obviously trigger or aggravate mental problems and disorders in vulnerable, predisposed women. This has especially been shown in schizophrenic psychoses and depressive disorders.

This enhanced vulnerability around menopause and the manifold interactions between biological and psychosocial risk factors for mental disease in this age group have multiple implications.

In the *clinic*, women in the perimenopause have specific diagnostic and therapeutic needs, and consideration of the menopausal status should be part of standard clinical care for mentally ill women. The appropriate treatment strategy in perimenopausal women should not only consider the use of specific psychotherapeutic and psychosocial interventions but also the potential benefits of estrogen replacement in addition to standard psychiatric care.

The application of estrogens should of course always be decided on the basis of an individual risk-benefit assessment in close cooperation between psychiatrists and gynecologists. It goes without saying that the final decision has always to be made by the woman herself after thorough information. Preferably the decision should also be based on additional nonpsychiatric indications.

Although many promising studies suggest that the neuroprotective properties of estrogens justify their use as an adjunctive strategy to traditional psychopharmacological therapies, further *research* in this age group is needed, especially regarding schizophrenic psychoses. This means more research on indications and contraindications of estrogen replacement for women in the perimenopause who are at risk for or suffering from mental disorders, especially also on the relative risks of hormone replacement as compared to treatment with psychoactive drugs or on the best augmentation strategies. We also need more research on specific psychotherapies and alternative treatment strategies in the perimenopause.

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Severe Mental Illness and Reproductive Health

10

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_10

Abstract

Severe mental illness (SMI) during pregnancy and the postpartum has the potential to impact negatively on the well-being of the mother, the mother-infant dyad, and her family. Untreated SMI can lead to poor attendance to antenatal care, impair mother-infant attachment, and, in rare cases, lead to suicide and infanticide. The wider usage of newer antipsychotics, deinstitutionalization, lessened stigma, and greater opportunities for social interaction have allowed many women with preexisting severe mental illness to embrace the possibility of, and plan for, parenthood. However, mothers with SMI in general continue to experience multifaceted risks such as unplanned pregnancies, obstetric complications, comorbid substance abuse, poor social support, and interpersonal violence which impact on outcomes and stretch available health resources. Mental health services and clinicians need to be aware that their female patients with SMI of reproductive age can and often do become pregnant and that preventative strategies (preconception counseling) for those who plan to become pregnant and contingent strategies (timely referral pathways and specialist consultations) for those who have unplanned pregnancies should become part of their core business. Obstetric and child health services need to work in conjunction with mental health services in identifying the needs of high-risk women, who may develop index episodes of severe mental illness during their perinatal period, particularly in the postpartum. As psychotropic medication is the mainstay of treatment for women with SMI, a necessary impetus is on the need for robust safety data in pregnancy and breastfeeding, so the woman and her family can make informed choices. Equally important though are the relational and sociocultural forces that pervade the lives of pregnant women with SMI, which need to be explored and addressed. Despite advocacy from caregivers, women's groups, and health professionals, services for mothers with mental illness are unevenly distributed worldwide with majority of the services only available in developed or high-income countries. In low- and middle-income countries (LAMICs), where high rates of maternal morbidity have been reported, the focus is predominantly on physical health with a less emphasis on mental health services. Strategies to overcome this challenge will be needed. In this chapter, we focus on the spectrum of perinatal healthcare for women with SMI.

Keywords

Severe mental illness · Pregnancy · Postpartum · Mother-infant dyads · Perinatal services

Introduction

Motherhood is an exciting time full of anticipation for many women and their families. For some it is a time of stressful adjustment, which includes the need to manage physical and mental ill-health, relationship tension, and social adversities. It is known that women with severe mental illness (SMI) struggle with all aspects of their sexual and reproductive health.

Howard et al. (2002) found that women with psychotic disorders have reduced fertility rates compared to controls, although it is likely that psychosocial causes such as lowered marriage rates and long-term relationship attainment and social isolation play more important roles than physical causes such as high prolactin levels associated with antipsychotic use (Abel and Morgan 2011). Miller and Finnerty in their study found that women with schizophrenia and related disorders reported high rates of sexual assaults, as well as unstable, less satisfying relationships than their non-mentally ill counterparts (Miller and Finnerty 1996). In addition the studied women had low rates of contraception use and therefore were exposed to the risk of unwanted pregnancies. When pregnant, they face birth complications, risks of relapse of their disorders, and losing child custody.

Suicide remains a leading cause of maternal mortality in high-income countries and possibly in low- and middle-income countries (LAMICs) as well if reporting is better. That being so, such a finding belies a complexity beyond the biomedical model, where cycles of poverty, social inequity, and intimate partner violence interact with inadequately treated mental illness, to lead to women feeling "… humiliated, entrapped and isolated" and thus susceptible to suicide (Fisher 2016, p. 192). Beyond these catastrophic but thankfully rare outcomes, maternal severe mental illness can devastate the individual and their family in multifaceted ways, often with negative downstream effects in terms of child development (Stein et al. 2014).

In high-income countries, the focus of reproductive mental health has largely been on screening for depression and anxiety during the perinatal period. While important as a public health measure, the use of the Edinburgh Postnatal Depression Scale (EPDS) (Cox et al. 1987) has major limitations in application to those disabled by SMI but do not necessarily have significant depressive or anxiety symptoms. Programs for screening of high-prevalent disorders during pregnancy may need to be adapted to target those with low-prevalent but high-risk SMI. Notwithstanding this recognized limitation, the care of women with SMI has evolved from the initial attention on new mothers with psychotic disorders (postpartum psychosis) to the mental health of pregnant women in general and the developmental trajectories of children of parents with mental illness (Boyce 2017). The postnatal has become perinatal with a broader period of time (preconception to a 1000 days postpartum) in which services and clinicians can provide flexible and patient-centered assessment and intervention.

Emergent evidence suggests that the postnatal period can be a specific risk phase in a woman's life. Early epidemiological data on the heightened risks of psychosis in the first month after giving birth (Kendell et al. 1987) have been supplemented by information on potential mechanisms, highlighting a biological vulnerability model involving an interaction between the endocrine, immunological, and neuropsychiatric systems (Bergink et al. 2013). The postpartum period is seen as a convergence of vulnerabilities, which in turn necessitates a focus on identification of risk factors during the antenatal period. As a corollary, the growth in the understanding of developmental origin of fetal health and disease (DoHAD) has also focused on pregnancy health and exposures (such as maternal mental ill-health, stress, and teratogens) and their epigenetic impact on child development (Lewis et al. 2014). A recent study (Ursini et al. 2018) showed the importance of placental functioning in the mediation of the interaction between obstetric complications and schizophrenia genetic-risk foci. These findings lead to a need for targeted interventions such as enhanced antenatal care for women with schizophrenia, in whom it can be conceptualized as a preventative strategy. The optimum antenatal care also has the potential to address modifiable risk factors such as weight and physical activities, nutrition, micronutrient deficiencies, as well as interpersonal violence, in improving quality of life.

The definition of "severe" or "serious" mental illness can sometimes depend on factors beyond the usual psychiatric nosology. Availability of mental health provision, or psychiatric expertise, can sometimes determine definitions, through a process of inclusion and exclusion. In the perinatal field, severe mental illness is often defined as schizophrenia, bipolar disorder, and affective psychosis, including postpartum psychosis (Jones et al. 2014). In low- and middle-income countries (LAMICs) like India, acute transient psychosis can be a common presentation during postpartum period (Chandra et al. 2015), as is catatonia, which is increasingly recognized in developed countries as well. Catatonia during postpartum period can have significant impact on the mother's health and infant care and is considered a psychiatric emergency (Nahar et al. 2017).

The focus on the psychotic disorders, while important in terms of highlighting risks and management complexity, may reflect a biomedical bias and neglect the fact that other disorders, such as personality disorders, eating disorders, post-traumatic stress disorder, obsessive compulsive disorder, and mental and behavioral sequelae of substance dependence, are also severe in the way they fragment a person's sense of self and function. Pregnant women with borderline personality disorders and eating disorders have been shown to be at risk of obstetric and neonatal complications, as well as mother-infant relational disruptions. Models of care that are needs-based that attend to the physical, psychiatric, and the associated relational contexts will likely benefit all women with SMI irrespective of their diagnoses.

A detailed discussion of the role of fathers, intimate partner violence, comorbid substance abuse, and medical disorders for women with SMI is beyond the scope of this chapter and will only be referred to in relevant sections.

Women with SMI from Low- to Middle-Income Countries (LAMICs)

Globally, the high-impact social determinants for mental ill-health in LAMICs are seen to be poverty and social exclusion, gender disadvantage, and loss, trauma, and displacement (Patel 2007). The specific impacts of these risk factors on the perinatal mental health needs of women from these countries are only recently investigated.

There is scant literature for the reproductive health of pregnant women with severe mental illness from LAMICs, and to date, there is no intervention targeting this group. Nevertheless, one can extrapolate using the findings for women with common perinatal disorders such as depression and anxiety in LAMICs, as the social determinants for these disorders will likely to be of relevance in moderating more severe conditions such as psychotic disorders.

Fisher and colleagues in their seminal review found that the prevalence rates of both antenatal and postnatal nonpsychotic common perinatal disorders were higher in LAMICs than in high-income countries (Fisher et al. 2012). Risk factors for these disorders were found to include a past history of mental health problems, intimate partner relationship difficulties (partner lacking empathy or openly antagonistic), exposure to violence, and a lack of reproductive autonomy (Rahman et al. 2013b). Additionally, disruptive relationships with mothers-in-law, infant gender disappointment, ethnic and religious minority, and relative rather than absolute social disadvantage (Fisher et al. 2012) were also found to predispose women to mental health problems. Baron and colleagues (2016) carried out a situational analysis in Ethiopia, India, Nepal, South Africa, and Uganda and found a number of challenges to the delivery of optimal perinatal mental healthcare for women living in these countries. Among the important findings, two issues are noteworthy: firstly, there is generally a lack of any mental health information system, so that data available on prevalence and outcomes of severe mental illness are not clear. Secondly there is no dedicated perinatal mental health service, with a consequent lack of prescription guidelines for pregnancy and breastfeeding. However, in all the countries studied, referral mechanisms were in place, mostly to general mental health services and inpatient units (Baron et al. 2016), suggesting that all is not dire. Overcoming access barriers, training, and integration of mental health into maternal and child health programs (Rahman et al. 2013a) may be sustainable solutions going forward.

There is evidence to suggest that interventions which are community based with outreaching capabilities, which involve the family and emphasize community participation, lead to better outcomes for people living with severe mental illness in LAMICs (Patel 2007). In a mother and baby unit in India, the woman and her baby are often admitted with a family member (usually a female relative of the mother) (Chandra et al. 2015), which represents both a cultural adaptation of an intervention developed in high-income countries and an opportunity for systemic intervention that can sometimes be overlooked.

Women living in high-income countries who are part of an indigenous minority or who come from culturally and linguistically diverse backgrounds (often LAMICs) represent another group that is understudied. Healthcare providers for these women need to be aware of gender roles, family structures, and philosophies, as well as personality and self-esteem in the context of extended family settings. Better understanding of the cultural meaning of childbirth and culturally sanctioned dependency for the individual woman (Henshaw et al. 2017) will also be needed.

Prevalence and Course of SMI During the Pregnancy

Studies from high-income countries have demonstrated that the prevalence rates for SMI during pregnancy are: 0.4% for psychotic disorders, 2.8% for broadly defined bipolar disorders, 0.3% for eating disorders, and 0.7% for borderline personality disorder (Vesga-Lopez et al. 2008; Howard et al. 2018). As yet, there is no prevalence data on pregnant women with SMI in low- and middle-income countries (LAMICs); however it is possible that rates of some SMIs are higher in these countries given that the rates of common perinatal psychiatric disorders are higher (Fisher et al. 2012).

The literature on the course of psychotic disorders such as bipolar affective disorder during pregnancy often has methodological limitations with conflicting results with some studies indicating that pregnancy may have a protective or neutral effect (Sharma and Pope 2012). What is clear however, is that the discontinuation of mood-stabilizing pharmacotherapy during pregnancy exposes the pregnant woman with bipolar to a heightened risk of relapse (Viguera et al. 2007; Sharma and Pope 2012). This is more so if she is primiparous, has obstetric complications, or is treated with unopposed antidepressants (Sharma and Pope 2012). In the same way, stability of illness control during the pregnancy appears to be protective against the development of postpartum episodes (Sharma and Pope 2012). For pregnant women with schizophrenia, rates of relapse during pregnancy requiring admission varied significantly but can be as high as 40.8% in one study (Harris et al. 2018). Women who experienced psychiatric admissions during the pregnancy were shown to have reduced antenatal care attendance as well as adverse psychosocial outcomes such as child protective services involvement (Harris et al. 2018).

The Preconception

Family Desire, the Motherhood Journey and Preconception Care

Successful motherhood can be seen as a marker for recovery for many women with severe mental illness. Nevertheless, even for women who have been stable for prolonged periods of time, the journeys to become parents are often strewn with challenges, ranging from the feelings of guilt to stigma to coping with the dual identity of needing help for their illness while at the same time being expected to be a competent mother (Dolman et al. 2013). The adage of “when a child is born, a mother is also born” highlights the transformative effect that motherhood can bring, a process that can be challenging for women with SMI who have been struggling with an identity tightly woven around illness and recovery. While little studied in women with SMI, the psychological transformation and reorganization of the maternal identity can be further impaired in those who have histories of poor parenting, abuse, and neglect (Judd et al. 2018).

Women with SMI’s narratives on motherhood also mirror those without mental illness, in that the general challenges of not knowing what to do with the baby and managing conflicting work and relationship demands are important to their family planning (Dolman et al. 2013; Nguyen et al. 2015). There may also be felt guilt around exposing the unborn child to the risks of medication, psychiatric destabilization, as well as pregnancy complications. Notwithstanding these challenges, a metasynthesis by Dolman and colleagues highlighted that motherhood can be esteem enhancing and is seen as *central* to the lives of women with SMI (Dolman et al. 2013). Furthermore, many women with SMI appear to have strong maternal desires (Nguyen et al. 2015) which can motivate their behaviors and engagement with their psychiatric treatments. An important study by Kendler and colleagues (2017) on pregnant women who abused illicit drugs showed that the risk of drug use was reduced during the pregnancy, as well as the postpartum, suggesting a protective effect of pregnancy on addictive behaviors. The social and interpersonal processes associated with maternal caregiving can therefore have the potential to interrupt brain-based neuro-adaptation (Massey and Wisner 2018) which in turn may have implications for those suffering from SMI. Pregnancy is an opportunity for women with SMI to minimize and cease maladaptive behaviors (illicit substance use treatment) and optimize adaptive behavior (compliance with medication, relationship counseling, mobilize support network).

Clinicians also need to be aware of the determination by women with SMI to take care of themselves and to exert personal agency in their motherhood journeys, and if relapse happens, then they would "deal with it and…come out of it" (Phillips and Thomas 2015, p. 4). This resilience is sometimes discrepant to the treating professionals' attitudes, which can be around symptom control and risk appraisals, with the sidelining of maternal desire as unrealistic or secondary goals.

The NICE guidelines (NICE 2016) suggest that all women with SMI should be given information about how their treatments might affect them and their babies, should they become pregnant. Along this line, it is worthwhile for mental health clinicians, particularly those caring for patients with psychotic disorders, to have a "surveillance of pregnancy intentions" (Stephenson et al. 2018, p. 1838) in their patients. This can be part of routine physical healthcare. Women with SMI who are actively planning a pregnancy should have an opportunity to have a preconception counseling discussion, preferably with a perinatal specialist.

A suggested content of such discussion together with general aspects of sexual and reproductive healthcare for women with SMI is listed in Table 1.

Reproductive Safety of Antipsychotics, Mood Stabilizers, Clozapine, and ECT

It is important to frame the discussion of psychotropic use during pregnancy and breastfeeding around the risk-benefit analysis of treatment rather than just focusing on the safety of medication. A pregnant woman with SMI has the right to receive treatment and to remain well, which would give her and her unborn child the best chance of success. It is necessary to address drugs and alcohol consumptions, and sometimes there is a need to highlight the patient's dissonance in withholding

Table 1 Sexual and reproductive health and preconception care for women with SMI

Sexual and reproductive health for all women with SMI of childbearing age
Health and social screening
STI screening
Pap smears
Screen for intimate partner violence
If has children, how are they caring for their children
Review the utility and safety of psychotropics in women of reproductive age
Teratogenic potential given high rates of unplanned pregnancies
Impact on fertility
Address smoking, alcohol, and illicit drug use
Optimize physical health, and manage any comorbid disorders such as premenstrual dysphoric disorder or polycystic ovarian syndrome
Family planning
Contraception, e.g., long-acting reversible contraceptives (LARC)
Plan for unexpected pregnancy, i.e., contact healthcare and do not suddenly cease medication
Access to reproductive choices (support around termination and pregnancy loss)
Engage with regular GP
Trauma-informed principles in psychiatric care
Avoid re-traumatization
Affect management (managing arousal in nondestructive ways)
Empowering women
Working collaboratively with flexibility
Working through grief and loss associated with past trauma
Preconception counseling
Review past and recent history of SMI, including risks when unwell, hospitalization, and impact on function and relationships
Discuss known safety data of psychotropics during pregnancy and breastfeeding
Individualized risk-benefit analysis
Measure prolactin level, and consider switching to another agent if hyperprolactinemia, provided clinically safe to do so
Explore maternal (and paternal) desires, fears, stigma, appropriate sources of information
Explore and process anxiety around the risk of their children inheriting the condition
Review and counsel on any cigarette, alcohol, or illicit drug use
Optimize weight, diet, and exercise
Micronutrient and vitamin supplementation (folate, iron, Vit D)
Relationship with intimate partner – explore practical and emotional availability of partner and quality of relationship
Review support network, particularly for available support postpartum

Frayne et al. 2009; Bloomfield and Rasmussen 2012; Acera Pozzi et al. 2014; Hauck et al. 2015

necessary medication for fears of negative effects on the fetus yet continuing to smoke, or use alcohol and drugs, which can all have deleterious effects on the pregnancy and child developmental outcomes. Non-pharmacological options for management of anxiety and stress should be discussed.

Table 2 Obstetric and neonatal risks for women with SMI

Risks	Schizophrenia	Bipolar	Other SMIs
Antenatal	Later presentation to antenatal care	Placenta previa	BPD
		APH	Low engagement with
	APH	Preeclampsia and gestational hypertension	Antenatal care
	Preeclampsia and gestational hypertension		GDM
			PROM
	GDM	GDM	Thromboembolic disease
	Thromboembolic disease		Chorioamnionitis
	IUGR		Eating disorders
	Psychiatric hospitalization		Gestational weight gain disturbance
Delivery	Preterm birth	Preterm birth	BPD
	Placental abruption	Caesarean or instrumental delivery	Preterm birth
			Caesarean delivery
			Eating disorders
			Preterm birth
	Fetal distress		Caesarean delivery
	Induction of labor		
	Non-elective caesarean delivery		
Neonatal/ infant	Stillbirth	Reduced Apgar scores	BPD
	LBW		Low Apgar scores
			Resuscitation
	Cardiovascular congenital abnormalities	SGA	LBW
		LGA	Child protection involvement
	Reduced Apgar scores		Eating disorders
			LBW and SGA
	Child protection involvement		Early cessation of breastfeeding
		Mood episodes in the postpartum	

Jablensky et al. 2005; MacCabe et al. 2007; De Genna et al. 2012; Nguyen et al. 2013; Judd et al. 2014; Blankley et al. 2015; Kimmel et al. 2016; Pare-Miron et al. 2016

APH antepartum hemorrhage, *GDM* gestational diabetes, *IUGR* intrauterine growth retardation, *LBW* low birth weight, *LGA* large for gestational age, *PROM* premature rupture of membranes, *SGA* small for gestational age

Table 2 summarizes the obstetric and neonatal risks associated with severe mental illness during the pregnancy and postpartum. It is often difficult to untangle the effects of the illness and its comorbidities (obesity, diabetes, social adversities, substance use, exposure to violence) and the use of psychotropics on the pregnancy (McAllister-Williams et al. 2017). There is evidence suggesting that some of the risks highlighted occur in both treated and untreated women with SMI (Boden et al. 2012).

The impact on the child of untreated depression and anxiety is well known (Stein et al. 2014) and can range of developmental problems as well as socio-emotional disorders such as ADHD and affective illnesses. In terms of child outcomes for women with psychotic disorders (particularly schizophrenia), there are additional risks having child protection services involvement and having their children placed in care. It is likely that child protection risk is an interaction between the untreated mental illness, domestic violence, substance abuse, and social instability and lack of adequate support.

As pregnant women cannot be enrolled in randomized control trials, it is vital for clinicians and their patients to be aware of and place context on the sometime conflicting findings based on observational studies. In so far as data available, critical analysis of the literature is needed and requires an understanding of the research design (retrospective versus prospective), including potential confounding factors as well as the statistical tests employed (Einarson 2014). For example, some studies have shown an increased relative risk of septal heart defects with selective serotonin reuptake inhibitor (SSRI) exposure, but the absolute risk remains small. There is also a need to differentiate between an association and causation, and many studies have failed to provide data in support of a biologically plausible mechanism for their findings. Another important aspect relates to whether a finding, even if statistically significant, is of clinically relevance.

A detailed discussion of the safety of psychotropics is beyond the scope of this chapter, and only a brief synopsis is provided here. The reader is advised to consult other texts such as *Psychopharmacology and Pregnancy: Treatment Efficacy, Risks, and Guidelines* (Galbally et al. 2014) and up-to-date reviews.

Studies on the SSRIs as a class often have methodological limitations with conflicting results. While the use of SSRIs during pregnancy has been associated with some negative outcomes, such as increased risk of miscarriage, septal heart defects, prematurity, low birth weight, poor neonatal adjustment, and potential neurodevelopmental problems, it is often difficult to determine whether these outcomes are due to the medication or the underlying illness, or a third set of factors, such as maternal obesity and smoking and alcohol use.

Evidence available suggests that both first-generation antipsychotics (FGA) and second-generation antipsychotics (SGA) are not major teratogens (McAllister-Williams et al. 2017). A recent large and powered study (Huybrechts et al. 2016) into the more common atypical antipsychotics use during pregnancy (quetiapine, aripiprazole, olanzapine, risperidone, and ziprasidone) concluded that antipsychotics exposure during early pregnancy do not increase the risk of major congenital malformations overall.

As SGAs are associated with metabolic risks in general, women who take these medications during pregnancy may be at an increased risk of gestational diabetes (Galbally et al. 2019), excessive gestational weight gain, and gestational hypertension (McAllister-Williams et al. 2017). There is evidence of poor neonatal adjustment and increased in neonatal motor tone, particularly in high doses. Longer-term data on neurodevelopmental outcomes of antipsychotic exposure during pregnancy are limited but reassuring (Haskey and Galbally 2017).

A recent review on clozapine exposure during pregnancy (Mehta and Van Lieshout 2017) concluded that there remains very limited data to address safety. Clozapine's use during pregnancy may lead to maternal complications such as diabetes, as well as perhaps a moderate increased risk of congenital malformation and poor neonatal adjustment necessitating close obstetric and neonatal management. Monitoring of serum levels and fetal well-being is advisable (Nguyen et al. 2019). It is important to acknowledge that patients who take clozapine have often failed in other therapies, so there are limited alternatives.

Lithium's use during pregnancy is associated with an increased risk of malformation, although the magnitude of this risk may not be as high as previously thought (Patorno et al. 2017; Munk-Olsen et al. 2018). There is a documented increased risk of Ebstein Anomaly, with an absolute risk of 1/1000. It is likely that lithium may also affect other aspects of the pregnancy such as fetal growth, obstetric complications (polyhydramnios), as well as neonatal adjustment difficulties although the extent of the risks and whether they are related to serum levels or not remain unclear (Poels et al. 2018). While the aim would be to maintain the lowest serum lithium level required to maintain psychiatric stability during pregnancy, regular monitoring is required due to fluid shifts across the trimesters (see Table 2). Despite these risks, lithium remains the treatment of choice throughout the pregnancy and the peripartum for women with severe bipolar affective disorder. The limited data on lithium exposure during pregnancy showed no evidence of neurodevelopmental deficits (Haskey and Galbally 2017). Valproate should be avoided in women with reproductive age group as it is considered as a major teratogen (McAllister-Williams et al. 2017).

Electroconvulsive therapy is a necessary treatment for severe postpartum mood disorders associated with psychosis, catatonia, or suicidal and physical health risks. In pregnancy, evidence available suggests that it is a safe treatment (especially in the second trimester), and the risk of adverse effects, such as anesthetics complications, fetal bradyarrythmias, and premature labor, appear low (Anderson and Reti 2009).

As an estimated 50% of pregnancies are unplanned, there is often an urgent need for easy-to-retrieve, reliable, and up-to-date information for both patients and primary healthcare staff. Websites such as https://mothertobaby.org/news-press/birth-defects-prevention-theres-an-app-for-that/ and www.mothersmatter.co.nz provide easy to understand information that is often updated. The provision of written information via printable pamphlets is helpful in the risk-benefit analysis discussion, which can be given to family and other health providers involved.

Dosett and colleagues posed the question in their editorial, No Perfect Choice: "How can we, as physicians, bridge the gap between treatment options we can offer patients and what they are willing to accept?" (Dossett et al. 2017, p. 29). An answer might lie in a therapeutic relationship characterized by flexibility and heuristics. A heuristic can be defined as "a simple procedure that sets out to find adequate though often imperfect solutions to complex questions" (Kahneman 2011, p. 98).

To take the example of bipolar disorders, which are high-risk disorders in the perinatal period, it has been suggested that three pharmacological strategies are employed (Boyce and Buist 2016):

- Medication free with close monitoring – may be suitable for women with a prolonged period of stability, few past episodes, good support network, and low risk of self-harm.
- Partial prophylaxis – the woman remains medication free in the first trimester, but having it (atypical antipsychotics or lithium) reinstated from the second trimester or immediately postpartum.
- Full prophylaxis throughout the peripartum – for women with severe disorders and at high risk of relapse.

Contingency planning is needed in all cases, and any heuristic algorithm has to be adapted with emergent information.

There are many benefits to breastfeeding, not the least of which it enhances attachment and provides a safe source of nutrition for babies born to women in LAMICs. To this end, women with SMI and their clinicians should actively discuss breastfeeding and proactively navigate the complex issues around medication safety, agency and patient preference, guilt, societal and family pressure, and the risks of relapse with sleep deprivation. Many psychotropics are compatible with breastfeeding in the context of an individualized risk-benefit analysis. Lithium has highly variable milk excretion levels, but is not considered to be a contraindication in breastfeeding by some experts. Clozapine is not recommended for use in breastfeeding. Breastfeeding and medication data collection such as *Lactmed* https://toxnet.nlm.nih.gov/newtoxnet/lactmed.htm and updated editions of *Medication and Mothers Milk* (Hale 2017) provide a relatively up-to-date safety data on most psychotropics. In all cases of breastfeeding on psychotropics, the baby should be monitored for growth and development.

Ethical Issues: Obtaining Informed Consent

Snellen and colleagues (2014) provide a succinct summary of the ethical principles relevant to the prescription of psychotropics during pregnancy, including the historical struggle between *beneficence*, which is to do good or act for the benefit of another (which is sometimes used to justify paternalism and authority of the doctor), and *autonomy*, the patient's right to self-determinism, including the right to make unwise decisions. Local laws and ethical guidance aside, the nuanced and real-life application of the process of obtaining informed consent, which is central to the practice of psychiatry, is often challenging. It requires the assessment and processing of *competence*, *voluntariness*, adequate *disclosure* of risks, *understanding*, and *joint decision-making* (Snellen et al. 2014).

In relation to perinatal mental health, four other aspects are important. Firstly, the mother must make a decision that will have effect on her child, and she may forgo her needs in service of those of the child. Secondly, there is a lack of established safety data, and often discussions around risks are speculative. Thirdly, while these ethical principles emphasize the rights of an individual, many pregnant and postnatal women from LAMICs live together with their extended family, where there may be rigid roles and hierarchies and where collectivistic decision-making occurs. Finally, given the relapsing nature of chronic psychosis, patients may have intermittently impaired capacity. Using a preventative ethics model with the aim of assisted decision-making, anticipating potential peripartum difficulties, such as having a birth plan which includes staff and equipment support, and appropriate notification of relevant psychiatric and obstetric staff of acute issues (Acera Pozzi et al. 2014) will be needed. It has also been proposed that a substitute judgment, that is, patient preferences expressed during periods of psychiatric stability, and an identified surrogate decision-maker, be used in case the patient has impaired capacity (McCullough et al. 2002).

Pregnancy Care

Imagine a woman with SMI on medication discovering an unplanned pregnancy. She would have searched the Internet for information on the potential toxicity of medication or just assumes the worse. Upon hearing confusing, sometimes pejorative comments from families and even healthcare professionals, she would cease her medication. Her partner may be supportive but not attuned to her anxiety or distant and dismissive. She would have to wait to get an appointment with the general practitioner or an obstetrician. She may need to commute a long distance to get to her antenatal care. In the meantime, her anxiety would be heightened, and she would be besieged with guilt about the impact of medication already taken on her unborn child or her illness relapsing because she has ceased her medication. At her first antenatal appointment, she would worry that if she discloses her illness, staff might not think she is capable of caring for her child and notify child protection services. What ought to be a natural and even celebratory process can be filled with angst and despair.

In high-income countries where there are available resources, early intervention using integrated models of care, in the forms of specialist multidisciplinary stand-alone antenatal clinics or a psychiatric liaison service embedded in the obstetric service, will be needed in managing pregnant women with SMI (Galbally et al. 2010; Nguyen et al. 2013; Judd et al. 2014). Given the high rates of medical comorbidities for pregnant women with SMI, it is necessary to envisage antenatal care for women with SMI to have similar approaches to well-established services for medically high-risk pregnancies, such as the Maternal-Fetal Medicine Specialty (Galbally et al. 2017).

Enhanced Multidisciplinary Antenatal Care

The principles of enhanced antenatal care for a pregnant woman with SMI and her family can be summarized as *comprehensive*, *consistent*, and *collaborative* which are the basis of good care for any pregnant woman (Health 2018) or for that matter any person suffering from a mental illness (Patel and Hanlon 2018).

Women with SMI are at risk of obstetric and neonatal complications yet often present late in their pregnancies and have fewer antenatal appointments (Miller and Finnerty 1996). Phillips and colleagues (Phillips 2017) in their study found that pregnant women with SMI often perceive not getting enough information about the first antenatal appointment or conversely can be overwhelmed by information. Their anxiety can be further compounded by a lack of clear guidance on addressing their mental health needs during pregnancy care, or being exposed to conflictual information, possibly reflecting uncertainty or lack of knowledge from staff (Dolman et al. 2013).

Studies have found that among publicly funded maternity services, women with SMI often struggle with not having the same midwife allocated to them throughout the pregnancy (Hauck et al. 2013; Phillips and Thomas 2015). In a retrospective study of pregnant women with SMI attending a specialist clinic in Western Australia, factors such as continuity of care with the same midwife and obstetrician can personalize the care encounter and engender trust and understanding without stigma (Hauck et al. 2013). The consistency in care allows for sharing of information, collaborative development of management plans and support networks, as well as utilizing the local resources available (Health 2018).

There is evidence that women with schizophrenia have lower rates of undergoing the oral glucose tolerance test (OGTT) (Ben-Sheetrit et al. 2018), which is particularly concerning as both SMI and antipsychotic treatment separately have been shown to increase the risk of metabolic dysfunction including diabetes. Psychiatric treatment during pregnancy potentially increases the patient's attendance with antenatal care (Ben-Sheetrit et al. 2018) further highlighting the obstetric-psychiatric bridge. To this end, it is important to address the low rates of psychiatric treatment for pregnant women with psychiatric disorders (Vesga-Lopez et al. 2008), and strategies to address any health disparity, stigma, and the lack of collaboration between obstetric and mental health services will be needed. Beyond optimizing antenatal attendance, women with SMI often present with complex needs and tools such as the Camberwell Assessment of Needs for Mothers (Howard et al. 2008) are useful in capturing the multifaceted needs of these at-risk women.

In Western Australia, a specialist antenatal clinic provides a "one-stop shop" for pregnant women with SMI. The weekly antenatal clinic comprises a multidisciplinary team of designated obstetrics, midwifery, psychiatry, mental health nursing, and social work staff, who provide care for pregnant women, in liaison with their primary care and their usual mental healthcare providers (Nguyen et al. 2013). Hospitals that do not have dedicated perinatal services include women with SMI, as part of a *complex care team*, as a way of acknowledging their needs, and their cases can be discussed and planned for in a multidisciplinary setting.

A pregnant woman with SMI is encouraged to (and should be supported to) access specialist care as soon as the pregnancy is discovered, ideally before 10-week gestation (NICE 2016). The first antenatal appointment can be crucial as it sets the tone for the women's whole pregnancy care and therefore needs to be an opportunity for a comprehensive assessment, all the while emphasizing engagement, collaboration, and woman-centric approaches (Health 2018). While the literature remains inconclusive about the ideal number of antenatal visits to constitute good or adequate pregnancy care in LAMICs, perinatal mortality may be increased with reduced visits. For women with SMI who may lead chaotic lives, strategies to maximize antenatal attendance (text reminder, assertive follow-up of nonattendance, enlisting assistance from families and local care networks) will be needed.

The role of fathers and partners cannot be overestimated. A supportive partner can modulate outcomes for the mother and baby and therefore should be encourage to engage with antenatal care, aside from situations of intimate partner violence, in which sensitive approaches need to be employed. Frayne and colleagues (2014) found that men who are partners of pregnant women with SMI experience psychosocial difficulties (SMI, substance abuse, previous history of domestic violence) and yet may have unrealistic appraisals of impending fatherhood. A study from Ethiopia showed that male partner attendance at antenatal care correlated positively with women complying with pregnancy investigations and counseling about complications (Forbes et al. 2018). Thus antenatal care services for pregnant women with SMI need to be father and partner-inclusive, with particular attention to those expecting their first child.

An example of the steps in the enhanced antenatal care is outlined in Table 3.

An important aspect of pregnancy care for women with SMI is *pre-birth planning*. Many authorities recommend the development of advance care plans for all pregnant women with SMI (Health 2018). These care plans should include the patient’s identifying details, their support person and treating obstetrician and psychiatrist, as well as the nature of the illness, including relapse signatures and details of the treatment such as medication regime. Special instructions, such as tapering lithium or breastfeeding and sleep support, can also be included. The care planning forums are particularly important for women who present late in their pregnancy care. Factors such as inadequately treated illnesses (lack of insight and non-compliance) or illness-related dysfunction such as homelessness or destitution or a combination thereof may play a role in the late presentations. It can also reflect a resurgence or exacerbation of anxiety (reactivation of trauma or tokophobia) or as an attempt to avoid care due to fears of child protection services involvement.

It is advisable to be proactive about child care capabilities for pregnant women with SMI, which is seen as an interplay between individual vulnerabilities and the availability of support. The complex care meetings should comprise risks assessments as well as strength-based and solution-focused approach (Turnell and Edwards 1999). A map of the child’s and family circumstances is formulated, and ideally a decision about the extent of child protection involvement is made by 36 weeks gestation. Any plan for supervision or statutory action needs to be communicated to the hospital and the woman and her family in a timely manner (Harrison and O’callaghan 2014).

In LAMICs, the adult psychiatry service may be the focal point of delivery for all forms of care. This is challenging for women as they have to consult at various settings and often feel anxious to disclose about psychiatric illnesses to the

Table 3 Pregnancy and postpartum care women with SMI

Care procedure	**Timing**
Inform treating mental health professional and attend primary care for review	Confirmation of pregnancy
Dating scan	6–10 weeks
First antenatal appointment	
Formulation of a *care plan* – collaboration between obstetric and mental health services, primary care, the patient, and her family	10–12 weeks
EPDS, CAN-M	
B12, folate, ferritin, vit D, TFTs, fasting BSL, U&Es, LFTs, and ECG	
Subsequent antenatal appointments	
Social work review	
First-trimester U/S scan	13 weeks
High-resolution fetal anatomy scan	19–20 weeks
Monthly antenatal appointments to 32 weeks then fortnightly or weekly thereafter	
OGTT	28 weeks (earlier for women on atypical antipsychotics)
Growth U/S scan	32–34 weeks
Repeat EPDS	
Pre-birth planning discussion and birth plan	28–34 weeks
Tour of the delivery ward and introduction to staff	Near delivery
Other Interventions	
Psychiatric reviews (if available) at each antenatal visit or close liaison between obstetric and mental health services	Throughout pregnancy
Monitor weight gain (if on antipsychotics) at each appointment	
Dietetics review as needed	
Monthly lithium levels up until	
36 weeks then weekly	
Identify women at high risk of relapse – e.g., bipolar 3–5 days hospital stay – assist with breastfeeding, sleep, and mother-crafting. Monitor mental state	
Elective admission to MBU for high-risk women	Post-delivery
Monitor infant PNAS, tone, blood sugar level	
Postnatal 6-week check	

Adapted from King Edward Memorial Hospital (KEMH 2018) and Mercy Hospital (Galbally et al. 2010) Australia.

obstetrician. Therefore, it is essential that the case manager or psychiatrist initiates a multidisciplinary pre-birth planning (Brockington et al. 2011). Another barrier to care is that non-biomedical explanatory models are common in women with a history of psychosis including postpartum psychosis and cultural and social factors unique to childbirth appear to influence these models (Thippeswamy et al. 2015).

Help-seeking patterns are varied, and there is significant delay in seeking treatment with the most common reason being lack of resources (Thippeswamy et al. 2018).

Birth Plans

Individualized birth plans done in a collaborative and timely manner can foster trust and confidence among patients and staff alike. Important aspects include consistent messages from staff, clarify expectations, review consent issues, and plan for the availability of a support person. Regular liaison between obstetrics, psychiatry, and midwifery is needed to plan for adequate analgesia (such as early epidural), as well as pharmacological options for acute symptoms during delivery (Acera Pozzi et al. 2014). For women with history of borderline personality disorder, complex trauma, or tokophobia, a tour of the delivery suite and introduction to staff, as well as planning around managing dissociation risk (acknowledging distress and grounded techniques, mindfulness, and relaxation training), may be of benefits (Choi and Seng 2016; Austin et al. 2017).

Postpartum Care

Immediate Post-delivery

In high-income countries, there may be constraints to optimal postpartum care by activities related funding, which tends to focus on the obstetric aspects of care at the exclusion of mental health needs. For women with SMI, particularly those with severe mood disorders, the immediate postpartum represents a high period of risk in terms of psychiatric morbidity, particularly among first-time mothers. Navigating breastfeeding, mother-crafting, and maintaining adequate sleep, all the while fighting off the sedative effects of medication, can be a real challenge for a new mum with SMI, one that requires input from the family and sensitive, caring staff. There is a strong need for advocacy to counter the push to discharge patients early due to the patients being obsterically cleared. Given the accumulated literature on the impact of psychotropics and poor neonatal adjustment and risk of special care nurse admission, the involvement of the pediatrician is also warranted (Frayne et al. 2017). The baby will need to be carefully monitored for side effects of medication such as poor neonatal adjustment, extrapyramidal side effects, and hypoglycemia. Taken together, it is advisable for new mothers with SMI, particularly first-time mothers, to have a 3–5 days stay in hospital post-delivery, unless they have good support at home and there are available outreaching child health and mental health services.

Postpartum Psychosis

Around 1 in 1000 women will develop a psychotic episode soon after giving birth (usually within the first few weeks postpartum). Those with unmedicated bipolar I are at high risk, but the disorder can occur de novo, suggesting a confluence of risk factors including genetic vulnerabilities unmasked by sensitivity to hormonal changes, sleep deprivation and circadian disruption, and immunological changes associated with childbirth (Bergink et al. 2016). While a prodrome, if present, can be non-specific (insomnia, irritability, mood fluctuation), postpartum psychosis can have a very rapid onset and is often seen as a psychiatric emergency. The hallmarks of the disease are rapid mood fluctuation or mania, which is often accompanied by disorganization; obsessive thoughts, often related to the baby; disorientation; confusion; derealization; and depersonalization (Bergink et al. 2016). Inpatient treatment, with appropriate pharmacotherapy, such as the stepwise benzodiazepines, antipsychotics, and lithium algorithm (Bergink et al. 2015) or ECT and surrogate care for the baby in the acute phase will be needed. Prevention strategies which include psychoeducation, continuous or partial medication prophylaxis, and enhanced pregnancy and delivery management with optimization of sleep in the immediate postpartum may be of benefits with at-risk patients (Bergink et al. 2016).

Suicide and Infanticide

Whether the motives are known or not known, suicides are lonely acts born from the kindling of vulnerabilities ignited by desperate circumstances. The impact of suicide is widespread, from the devastation on family and friends to the admixture of guilt and anxiety on the part of the clinicians and services. Even though the rates of suicide are comparatively lower during pregnancy and postpartum period, compared to other non-perinatal period, a history of self-harm and having a severe mental disorder in the postpartum period is reported to increase the risk of suicide (Lysell et al. 2018; Mota et al. 2019)

The Confidential Enquiries into Maternal Deaths (CEMD) in the United Kingdom had brought maternal suicide to the forefront of understanding, irrevocably shifting the focus from preventable obstetric-related deaths to optimizing the mental health and welfare of pregnant and postpartum women (Oates 2003). Indeed, in the years since the 1997–1999 report, when suicide was identified as the leading cause of maternal death, consecutive reports have repeatedly highlighted the number of women who died by suicide after a pregnancy. As of the 2018 report (now called Mothers and Babies: Reducing Risk through Audits and Confidential Enquiries across the UK – MBRRACE-UK), maternal suicide is the third largest cause of death within 42 days of the end of pregnancy and the *leading* cause of death within 1 year of the end of the pregnancy (Knight et al. 2018).

Women with postpartum psychosis, with or without depressive illnesses, are particularly vulnerable to suicide as well as infanticide, usually in the context of altruistic delusions. That is, the commission of infanticide by the psychotic woman in the context of a belief of saving their child from a fate worse than death. Brockington reported a case series of maternal suicide and filicide that are both shocking and defy empathic understanding which further emphasizes the disruption of severe mental illness on the maternal mind (Brockington 2017). Much like the management of postpartum psychosis, it can be argued that suicides and infanticides in women with SMI in the perinatal period can be prevented if strategies aimed at both the individual (identification of those at risk, medication prophylaxis, follow-up care) and services and commissioners (coordination, liaison, crisis care) are employed (Bergink et al. 2016; Knight et al. 2018). Many countries are now incorporating amendments in their legal systems and approaches in handling mothers who have committed filicide including assessment of mental health status of the mothers, including a perinatal psychiatrist as an expert witness, and understanding the context of mental illness and filicide/infanticide.

The Need for Mother and Baby Units (MBUs)

The development of mother and baby units (MBUs) around the world is a powerful statement in psychiatry, that as Winnicott pointed out: there is no such thing as a baby or a mother, there is only both. MBUs serve as a measure that restores and enhances parenting and attachment, while acute psychiatric treatment takes place. Resource permitting, it can also be an opportunity to prevent psychiatric morbidity such as elective admissions for high-risk patients. Evidence suggests that MBUs are effective in terms of clinical outcomes for the mother as well as parenting outcomes (Christl et al. 2015), and thereby these services should be part of a continuum of care from preconception to parenting for women with SMI.

The MBUs' model of care often utilizes a multidisciplinary approach with specialist psychiatry and nursing input, mother-crafting support, monitoring child development, involving fathers and extended family, and networking with other services such as child protection and community mental health services. Therapy is also provided in many MBUs and ranges from restoring maternal competencies and enhancing parent-infant interactions to attachment and in-depth psychotherapeutic care. There can be a variation in the diagnostic makeup of women who are admitted with their babies to MBUs around the world, with a predominance of depression and anxiety in some countries and acute psychosis and catatonia in others (Chandra et al. 2015; Christl et al. 2015). This may reflect a number of differences including geography, availability of dedicated services, and socioeconomic factors. In the only unit in LAMIC in India, the emphasis of the reestablishment of breastfeeding takes on additional significance given hygiene issues and non-affordability of formula feeding (Chandra et al. 2015).

There is an inherent conflict in the need to maintain a therapeutic relationship in women with SMI and the duty to prevent harm for the children of those same patients. While the main aim of MBUs is to maintain the continuity of and enhancing the mother-infant relationship, on occasions, infants at risk will necessarily be separated and be placed out of home. The MBU may allow time for these difficult decisions to be made. In France (Glangeaud-Freudenthal et al. 2013), the rate of infant separation post-admission to the MBUs were 15%, while in India, no infant was separated from their mother. Unique to this latter unit, a female family member is often co-admitted. The cultural paradigm is therefore important in determining care as the Indian Mental Health Care Act, 2017, Sec. 21 clause 2 states that "A child under the age of three years of a woman receiving care, treatment or rehabilitation at a mental health establishment shall ordinarily not be separated from her during her stay in such establishment." The section also details the procedures that the psychiatrist needs to follow if there is an indication for separation of the child from the mothers. By necessity, this is a major step in developing perinatal services for mothers with mental ill-health, which has, at its center, the promotion of the mother-infant relationship.

Child Welfare, Attachment, and Development

While infant separation can only occur in the postpartum period, there is an impetus to identify women at risk and put in place a child protection framework prior to delivery. For women with SMI, the needs of parenting can be summarized as *basic care, safety, emotional warmth, encouragement of learning, the provision of a stable family base* and care in the context of *culturally acceptable* norms (Brockington et al. 2011). It can be argued that parenting capabilities is assumed to be present unless proven otherwise. In cases where child protection services are involved, there are often risk factors present such as poor symptom control and lack of insight, comorbid substance abuse, domestic violence, and lack of support. Studies have shown that compared to the general population, mothers with severe mental illness are almost three times as likely to have involvement with child protection services (Park et al. 2006), and approximately 50% of mothers with schizophrenia lose custody of their children either temporarily or permanently (Seeman 2012). Not all child protection involvement results in statutory action or child removal, which is an important discussion with the woman and her family whenever a referral is initiated. There is evidence of effectiveness for "wraparound" services or family-driven system of care (Seeman 2013) in families impacted by severe mental illness (Kessler and Ackerson 2005). The content of these "wraparound" services vary, but elements of success appear to involve case management, substance abuse counseling, liaison between mental health and other services, parenting classes, parent support groups, co-parenting support addressing attachment, and judicious use of the time limited admissions to the Mother and Baby Units if available.

The postnatal care of women with SMI and their babies will need to include a focus not just on enhancing attachment but the need to attend to the socioeconomic circumstances. The support needs to be practical, emotional, and financial. High socioeconomic status is a protective factor, although one that cannot be easily addressed by health staff. Parent education, home-visiting programs, and individualized video feedback to enhance maternal sensitivity are all promising effectiveness in terms of intervention (Stein et al. 2014). In LAMICs settings, while much of the focus is on the acute care of the illness, it is important to review the challenges and difficulties faced by mothers in their extended family and community settings after they have been discharged from hospital. Clear communication and liaison will be needed with providers of the physical healthcare of the child, to integrate immunization and prevention of infections, parenting support, and mental health monitoring for the mother. Children of parents with psychotic disorders, especially schizophrenia are at risk of intellectual disability (Di Prinzio et al. 2018) and therefore developmental tracking and appropriate early intervention are needed.

In terms of therapy, pregnancy until 3 years postpartum (also referred to as the first 1000 days) is a crucial period for socio-emotional development in the life of a child. Children of parents with SMI are likely to have attachment disruption, such as disorganized attachment. Mother-infant therapy can be seen as a potential preventive intervention to break the intergenerational transmission of parent-infant relational disruptions. While little research is available in this area, adapting from programs such as Circle of Security (Marvin et al. 2002) and Watch, Wait, and Wonder (Muir et al. 1999) may be useful, provided that the therapy occurs as part of “An integrated model of perinatal and infant clinical intervention” (Judd et al. 2018, p. 4) addressing the woman’s illness control and individual and systemic strengths and vulnerabilities and infant development.

Contraception

Women with mental illness tend to have higher rates of no contraception use or usage of less effective methods compared to the general population (Hall et al. 2015). Many women are concerned about the effect of hormonal contraception on their mental states, but summative evidence suggests that the use of oral contraceptives, levonorgestrel-releasing intrauterine devices, and depot medroxyprogesterone acetate do not have major negative mood effects (Hall et al. 2015). Given the issues around potential non-compliance, postnatal women with SMI should be reviewed for suitability for use of long-acting reversible contraception (LARC). Other than mitigating potential decompensation with the unwanted pregnancy, family planning also represents an opportunity for optimizing mental and physical health as well as strengthening intimate relationships (Acera Pozzi et al. 2014). A finding from a retrospective study showed that a significant proportion of women with schizophrenia had a relapse in the month around their estimated conception date, highlighting a need for inpatient mental health units to carry out pregnancy testing in admitted women of childbearing age and to proactively discuss contraception (Harris et al. 2018). An opportunity for a contraception discussion would also need to focus on other physical health issues, including screening for sexually transmitted infections, cancer screening, and other aspects highlighted under the section on preconception care in this chapter.

Conclusions

Severe mental illness during pregnancy and postpartum period can have significant impact on mother and infant health. It is important to recognize at the earliest opportunity and provide comprehensive, collaborative, and consistent care during pregnancy and perinatal period. Women with preexisting mental illness should be counseled about planning for pregnancy and motherhood. Preconception counseling provides an opportunity to mitigate many modifiable risk factors and provide better care. Perinatal services are not uniformly available across the world, and LAMI countries are lagging behind in providing the comprehensive maternal mental health services. Future directions would need to capitalize on evolving paradigms of care, equitable resource distribution, and integrating robust research in the physical and mental health programs.

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Part IV

Mental Health and Physical Health

Cancer in Women and Mental Health

11

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Contents

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_19

Abstract

Cancer is a global health problem, affecting mortality and morbidity as well as the physical and mental well-being of the survivors. Among women of a specific age group, cancer is the most common cause of death in the United States. Although the incidence rate of all cancers in women remained somewhat stable in the United States in the last decade, the rate went up in other developed countries. In almost all developed countries, the death rate and the five-year survival rate steadily improved, partly due to sophisticated screening methods, early detection, and secondary prevention of metastasis. This trend is encouraging; however, it also emphasizes the importance of understanding the challenges faced by the survivors at different levels of diagnoses and treatment. Psychological well-being is a crucial part of the survivors' journey through cancer diagnosis and treatment. In this chapter, we discuss the epidemiology of the most common and the most important psychiatric manifestations in the context of cancer in women. We also explore the psychological factors influencing risks and prognosis of cancer, pharmacological and non-pharmacological treatment approaches for psychiatric symptoms in cancer, the barriers in treatment at an individual and at the systems level, and the importance of palliative care, preservation of dignity, respect, and ethical standards.

Keywords

Cancer · Women · Breast cancer · Metastasis · Depression · Anxiety · Catatonia · Delirium · NMDA · Psychooncology · Mental health

Introduction

Cancer is a global health problem, affecting mortality and morbidity as well as the physical and mental well-being of the survivors. The statistics vary among countries, even among different states within the same country. In the United States, the incident rate of all cancers remained stable in women between 2005 and 2014, whereas the death rate from cancer went down by 1.5% annually (Siegel et al. 2018). In contrast, the incidence rate for breast cancer is projected to rise by 2% in the United Kingdom between 2014 and 2035 (Breast Cancer Statistics 2018). Currently cancer is the second most common cause of death in the United States among all age groups and gender, and the most common cause of death among females between ages of 40 and 79 (Siegel et al. 2018). The 5-year survival rate of women with metastatic breast cancer doubled in the last decade in the United States. With improved early detection, conservative treatment, and aggressive treatment of invasive and metastatic cancers, in the developed countries, women are living longer with a diagnosis and the burden of cancer and cancer-related illness.

Cancer mortality and survival vary among race and ethnicities and socioeconomic statuses, due to variable access to preventive care, differences in stages at presentation, and differences in screening and variable rates of chemo, radio, and immunotherapies. Non-Hispanic black and Hispanic women receive radiation therapy at a lower rate than their white counterpart, after limited resection for early-stage breast carcinoma. A similar trend is seen in cancer of lung and bronchus between 1999 and 2012, showing a lower age-adjusted incidence rate among white male and females across the United States (Tabatabai et al. 2016). A higher stage at the time of diagnosis and increased mortality were also associated with Medicaid and no insurance status in women. Data from the United Kingdom suggest a similar pattern of lower incidence rate of breast cancer in black women but a poorer prognosis overall (Jones et al. 2004). It points towards the increased proportion of the aggressive type of hormone receptor negative tumors and higher expression of p53 genes, when stage and tumor types are adjusted. Though healthcare access is more even in the United Kingdom, social factors like poverty, low educational attainment, and lower medical literacy leading to a later stage of presentation of breast cancer in women of an ethnic minority were proposed as causes of ethnic disparities in breast cancer outcome. In an Australian study (Australian Institute of Health and Welfare 2006), Indigenous females were found less likely to have breast cancer, but more likely to die from it. Noteworthy, Indigenous female group was also found less likely to accept curative treatment in another study (Condon et al. 2016).

In a report in 2007, the Institute of Medicine (IOM) (Institute of Medicine 2007) recommended recognizing psychosocial needs of cancer patients, discussing specific psychiatric symptoms and referral to appropriate psychosocial personnel to address their needs. Similarly, guidelines from the UK National Institute for Clinical Excellence (NICE) (National Institute for Clinical Excellence 2004) and the National Comprehensive Cancer Network (National Comprehensive Cancer Network 2008) have suggested screening for psychological distress in cancer patients. The 339 page IOM report called “Cancer Care for the Whole Patient” recommends describing the psychological problems in a cancer patient, stating how they interfere with biomedical care, and exploring available psychosocial health services and discuss their effectiveness. It also points towards 10 recommendations of actions, the first of which is stated as a standard of care. It calls for ensuring psychosocial health services for all cancer patients, along with referral, coordination, and management of all psychosocial needs.

In this chapter, we discuss the role of psychiatric disorders in predicting the risks and prognosis of cancers in women, the most common psychiatric symptoms, disorders, and syndromes in cancer, the relation between cancer treatment and psychiatric symptoms, psychological issues among survivors, specific psychiatric issues in certain types of cancers, screening and treatment of psychiatric conditions in women with cancer diagnosis, barriers of such treatment implantation, interface of psychiatry and palliative care in women with cancer, and brief discussion about death with dignity in the context of cancer in women.

Psychological Factors Affecting Risk and Prognosis of Cancer

Several studies looked into the relationship between psychological stress and/or depression and risk of developing cancer and risk of poorer progression and mortality. Designs of these studies and the criteria of stress used often varied, resulting in dissimilar outcomes about the association. In a large prospective cohort (Liang et al. 2017), more than 3,000 women with preexisting newly diagnosed depression had a modestly significant association with increased all-cause mortality and cancer-specific mortality rate among the late-stage breast cancer survivors. The study did not find any difference in breast cancer screening between depressed and nondepressed patients at baseline. A similar study (Brown et al. 2016) found neither a preexisting diagnosis of depression or antidepressant use was associated with an increased risk of breast cancer development, though earlier studies have shown some association.

In a population-based record-linkage analysis, conducted in Western Australia, the psychiatric patient population had a higher mortality rate from cancer, a higher rate of metastasis at presentation, a lower rate of surgery for breast and cervical cancer, and lower rate radiotherapy for breast and uterine cancer (Kisely et al. 2013). In this large population study, the incidence of cancer was found to be lower in dementia and schizophrenia populations. This strengthens the possibility that the higher mortality rate in a psychiatric population may not be fully explained by a poorer lifestyle, such as alcohol and or tobacco use. As the overall mortality rate for all causes was also higher in psychiatric population, it was suggested that psychiatric patients with cancer often have more medical comorbidities and may receive a less frequent primary and secondary health services, for example, routine care for blood pressure, body weight, hyperlipidemia, cardiac catheterization, and coronary artery bypass grafting.

Medical comorbidities are often associated with poorer overall health outcome in cancer patients. Whether a prior psychiatric diagnosis in these women with cancer had any association with subsequent medical comorbidities was explored in a few recent studies. A registry-based study (Schoormans et al. 2017), conducted in the Netherlands, found that among the women with breast cancer diagnosis, there was a significantly higher risk of development of cardiovascular disease in women who were treated with medications for anxiety in the year prior to their cancer diagnoses, after adjusting for depression, usual cardiovascular risk factors, and clinical characteristics. This study did not find a significant association between preexisting depression and risk of cardiovascular disease among breast cancer patients, unlike the findings of several past studies. Many studies have used depression and anxiety as an intermingled variable, which probably made it difficult to appreciate the risks of them separately. Nevertheless, in many studies preexisting depression was shown to be associated with both development and progression of cardiovascular diseases in general population, leading to the recommendation for management of depression, anxiety, and psychosocial risks factors to be a key for successful prevention for cardiovascular disease, by the Fifth Joint Task Force of the European Society of Cardiology (Perk et al. 2012). Noteworthy, the Beck Depression Inventory (BDI), a commonly used self-report depression screening scale, was found to have a predictive value for 25-year relapse-free survival and overall survival in breast cancer patients in Finland. An extensive 25-year prospective case-control study showed a lower score on BDI (<8) was associated with a better relapse-free survival and overall survival (Eskelinen et al. 2017). More importantly, the stage of cancer during the screening for depression also affects the results of these studies. Preexisting depression and anxiety are often shown to be associated with a poorer overall outcome, but one study showed depression during the postsurgery period in nonmetastatic breast carcinoma was also associated with overall poorer survival in women in an 11-year follow-up study (Antoni et al. 2017).

Whether screening of depression and treatment of depression and anxiety have a robust positive effect on the overall outcome in cancer patients is a difficult concept to study. The available studies in this area have several limitations, for example, small sample size, variable and ill-defined outcomes measures, variable, sample-specific cutoff scores, and limited follow-up period. Few recent studies followed women with early-stage nonmetastatic breast cancer for a more extended period to study the effect of group-based cognitive behavioral therapy. In a 15-year follow-up randomized study, post-resection cognitive behavioral stress management therapy was associated with significantly improved depressive symptoms and quality of life at the 15-year follow-up point, in women with nonmetastatic breast cancer (Stagl et al. 2015). In a nested case-control study from three breast cancer registries in Sweden, it was found that women with depressive disorder were less likely to adhere to endocrine therapy, while short-term use of selective serotonin receptor uptake inhibitors (SSRI) was significantly associated with reduced adherence (Valachis et al. 2016). The women who were on SSRI for a longer duration of time did not show any significant difference in breast cancer mortality compared to nondepressed women. Though there has been a debate on whether treatment of depression influences the overall survival, one secondary analysis of a randomized controlled trial found significant benefit from supportive-expressive therapy (SET) regarding survival time in patients with metastatic breast cancer. In this study, reduced depressive symptom correlated with improved survival rate, though the effect of SET on survival was not significant (Giese-Davis et al. 2011). Noteworthy, improvement in the depressive symptom in the first year of treatment was associated with improved survival even after many years. This finding emphasizes the need for early treatment of depression in breast cancer patients. As the results of these studies vary in regards to the effect of the treatment of depression on cancer mortality, there is no consensus on which treatment of depression might have a higher mortality benefit.

Psychiatric Disorders in Cancer

Depression and Anxiety

Epidemiology

Though the relationship between cancer and depression is well observed, the prevalence of major depressive disorder (MDD) varies in literature. When screening tools for distress are used to measure major depression, false positive results are high. A variable rate of 5–20% is stated in breast cancer literature, using a semi-structured interview to diagnose MDD equivalent to the DSM5 criteria, whereas the prevalence rate is much higher when self-reported symptoms were used to measure depression. On the other hand, it is widely described in the literature that depression is under-recognized in the cancer population, especially when the severity of depression is more. Considering the variable study population, research design, and the use of various measuring tools, the rate of depression varied from 10% to 25% in a review of epidemiological data in breast cancer patients (Fann et al. 2008). This review showed lack of robust association between depressed mood and advanced stage, but significant association with chemotherapy. In a more recent cross-sectional study of young women with metastatic breast cancer, 20% patients scored above the cutoff score in Hospital Anxiety and Depression Scale (HADS), depression subscale, with 9% of them scoring in the range of moderate to high (Park et al. 2018). Higher physical symptom score, white race, lower social support, and at least one college education were more likely to be associated with report of higher depression scores. Cross-sectional studies in Australia showed a variable prevalence of depression and anxiety symptoms ranging from 30% to 40%. A recent longitudinal study showed an 18% rate of anxiety, a 33% rate of depression, and a 35% rate of combined anxiety and depression in breast and gynecological cancer patients (Stafford et al. 2013).

Symptom Cluster

Depression is very often associated with a symptom cluster of fatigue, anxiety, and sleep disturbances. In a longitudinal study, depression, fatigue, and sleep disturbances were correlated at each study point, before, after, and at six- to eight-month follow-up in both pre- and postmenopausal breast cancer patients. Fatigue predicted postchemotherapy depression in premenopausal population indicating a potential target for early intervention. Both biological and behavioral theories were discussed as possible reasons for fatigue predicting depression (Ho et al. 2015). Depression, sleep, and fatigue have consistently shown coherent relation longitudinally during diagnosis, chemotherapy, and follow-up time in breast cancer. Symptom cluster research in breast cancer is expanding to look into the effect of the treatment of this cluster, instead of a single symptom, on the disease burden during and after chemotherapy. In a review of the randomized controlled trials including all these three symptoms, it was found that successful treatment of one symptom does not always result in a reduction of the other symptoms (Jain et al. 2015). In most cases, treatment of fatigue improved sleep disturbances and depression, but the association with depression was weaker. Depression was the symptom, least likely to improve during the study period. Stress and tumor necrosis factor alpha have been positively associated with symptom clusters, though the direct role of inflammation in causing the symptom cluster is not clear at this point.

Physical Symptom Burden and Depression and Anxiety

Physical symptom burden and psychological symptoms are often associated with breast cancer patients. The association is stronger with depression than with anxiety. Physical symptoms like pain, indigestion, constipation, problems with eating, breathing, getting around, nausea, tingling, etc. are often the results of surgery, radiotherapy, chemotherapy, and hormonal therapy in breast cancer. Most of these symptoms were associated with depression using HADS scores (does not use any physical symptoms) in a recent study (McFarland et al. 2018). Concomitantly, depression and younger age were associated with higher number of physical symptoms. Many prior studies indicated the strong correlation between cognitive symptoms and appetite changes with depression in all cancer population. The synergistic relation between physical symptom burden and depression is seen in cancer patients, irrespective of the type, stage, duration, chemotherapy status, and survival time. There might be a benefit in exploring the presence of depression in patients with ongoing physical symptoms, especially in younger age group.

Risk Factors Predicting Depression and Anxiety

Studies identifying independent risk factors for anxiety and depression in gynecological cancer are heterogeneous. Most of these studies conceptualize psychological morbidity as “distress,” a term that includes both anxiety and depression. Though anxiety and depression are often coexistent, they may present distinctively and may require symptom-specific focus and intervention. A recent 2-year prospective longitudinal study done in metropolitan Australia, preexisting of prior history of treatment for anxiety and depression, predicted a worse anxiety and depression severity in newly diagnosed gynecological cancer patients (Stafford et al. 2016). The subjects were followed every 8 weeks for a 96-week period. A higher neuroticism score at the beginning of the study was associated with greater anxiety and depressive symptoms. The results of this study were similar to another study indicating neuroticism being an independent predictor of persistent anxiety and depression in ovarian cancer patients (Goncalves et al. 2008). Women with a higher level of neuroticism may experience a smaller reduction in anxiety symptoms than women with a lower level of neuroticism. Careful history taking about prior anxiety and depression is helpful in initial evaluation of gynecological cancer patients to identify and treat psychological illnesses during the cancer treatment. A screening for neuroticism (see ▶ “Depression, Anxiety, and Physical Morbidity in Women” subsection) using a neuroticism scale might be helpful to plan a further intervention, like psycho-education and cognitive therapy. Another study based on Big Five personality dimensions, using NEO Five-Factor Inventory (NEO-FFI), classified patients in latent classes and showed the “distressed” class (with the highest neuroticism and the lowest extraversion scores) had higher depression, anxiety, and physical symptoms. This population also tended to be younger, more likely to care for another adult, less educated, and exercised less (Morgan et al. 2017). Family psychiatric history, pre- or postmenopausal status, inadequate social support, and low socioeconomic status were cited as other risk factors for an increased chance of MDD in gynecological cancer patients. Childhood and developmental factors like the early experience of abuse and style of attachment have shown to affect the patient-surgeon relationship, influencing treatment adherence.

Screening Tools and Diagnostic Methods

Many screening instruments are used in research and in clinical practice to identify depressive symptoms in cancer patients. Some of the instruments are heavy in physical-mimicking symptoms of depression, making them less favorable in this patient population, as physical symptoms are prevalent during almost every stage of the disease and its treatment. For example, fatigue is a known nonpsychological symptom caused by tumor burden, nausea/vomiting, inability to eat, medication use, and immobility. Weight loss can be a symptom of anorexia-cachexia syndrome. Difficulty in focusing and making decisions is seen in chemotherapy and radiotherapy-related cognitive impairment. Sleep disturbance can be related to pain and medication use (chemotherapeutic agents and corticosteroids). Some symptoms might mimic the symptoms of depression, like apathy, seen in hypoactive delirium in chemotherapy patients. So, it is important to use standardized, validated instruments in the screening of depression in cancer patients. American Society of Clinical Oncology published a set of practice guidelines for screening, assessment, and management of depressive symptoms in patients with cancer (Andersen et al. 2014). The society recommended Patient Health Questionnaire-9 (PHQ-9) as a suitable screening tool with a lower cutoff score of 8 (unlike a cutoff score of 10 in general population). This is based on the evidence from a large study that found a lower cutoff score might help reducing false negative results while retaining good diagnostic accuracy (Thekkumpurath et al. 2011). PHQ-9 is easily administered in primary care office, with nine items corresponding to the diagnostic criteria of MDD per the Diagnostic and Statistical Manual-IV (DSM-IV). The items assessing depressed mood and loss of interest can be administered first. Patients scoring 0 or 1 in these two items do not need to go further to finish the rest of the instrument, making it convenient to use in day-to-day practice. PHQ-9 is not explicitly validated in cancer patients.

Other widely used self-report measures are the Hospital Anxiety and Depression Scale with depression and anxiety subscales (HADS-D and HADS-A) (Zigmond et al. 1983), Beck Depression Inventory-II (BDI-II) (Beck et al. 1986), and Center for Epidemiologic Studies Depression Scale (CESD) (Radloff 1977). Table 1 described some commonly used instruments and the evidence for them. National Comprehensive Cancer Network (NCCN) recommended using Distress Thermometer (DT) and Problem List for management of distress in cancer patients (National Comprehensive Cancer Network 2016). A new instrument called Emotional Thermometer (ET) was built by expanding on the strengths of DT, adding visual analogs to rate depression, anxiety, and anger (Mitchell et al. 2010). In a large cross-sectional study, done in Singapore, ET and its subscales were validated and correlate positively with HADS-D and HADS-A (Beck et al. 2016). Noteworthy, ET depression and distress subscales had a positive correlation with HADS-D at a lower cutoff value, where ET anxiety subscale correlated with HADS-A at a higher cutoff value. HADS-D and HADS-A were also validated at cutoff scores of 7 and 5, respectively, in cancer patients.

Different assessment methods are suggested for the diagnosis of MDD in the cancer population. An exclusive approach eliminates loss of appetite and fatigue as criteria, whereas a substitutive approach replaces these overlapping symptoms with

Table 1 Different screening instruments used in the evaluation of psychiatric symptoms in cancer patients

Scale/instrument	Brief description	Accuracy in detecting symptoms/ diagnosis	Usefulness	Limitations
Distress thermometer (Mitchell et al. 2010)	Diagram of a thermometer, labelled from 0 (no distress) to 10 (extreme distress) Five domains: practical, family, emotional, religious, and physical Cutoff score is >4	Pooled sensitivity in 6 studies: 80.9% Specificity: 60.2%	Useful to rule out depression in primary care setting Helps identifying patients that need referral	Cannot be used to make a diagnosis Not validated widely in cancer population
Emotional thermometer (depression, anxiety, and distress) (Beck et al. 2016; Vodermaier and Millman 2011)	Three subscales Five visual analogue scales with four predictor domains (depression, anxiety, distress, and anger) and one outcome domain (need for help) Cutoff scores are 3, 4, and 2 for depression, anxiety, and distress subscales	Correlates well with HADS-D and HADS-A at the validated cutoff scores	Measures symptoms for screening in the primary care and oncology setting	Can be effectively used to filter patient subpopulation that needs further assessment
Hospital anxiety and depression scale (HADS) (Beck et al. 2016)	Two subscales: HADS-D, HADS-A Cutoff scores 5 and 7, respectively	HADS-D sensitivity 84%, specificity 50% HADS-A sensitivity 73%, specificity 65% HADS total sensitivity 80%, specificity 74%	HADS total and HADS-D scales are useful in screening for depression in cancer population	Both subscales have a lower specificity than the total scale

Originally prepared with data from the cited references

HADS Hospital Anxiety and Depression Scale; *HADS-D* Hospital Anxiety and Depression Scale, depression subscale; *HADS-A* Hospital Anxiety and Depression Scale, anxiety subscale non-physical symptoms. In either approach, there is a chance of high false negative, leading to the risk of a potentially preventable worse outcome. Currently, the consensus is to use an inclusive approach, considering all nine symptoms on PHQ-9, irrespective of their attribution to either depression or cancer. Neither of these approaches is proven to be better than the other; so, use of clinical judgment remains crucial.

PTSD

The diagnostic criteria for posttraumatic stress disorder (PTSD) have emerged with the changes in DSM. DSM-IV TR broadened the diagnostic criteria of PTSD to include trauma from life-threatening illnesses like cancer. Cancer literature expanded with the specific epidemiology of PTSD after this. In DSM-5, life-threatening illnesses and serious medical conditions are not necessarily considered as traumatic events, potentially influencing research in this field. Cancer-related PTSD diagnosis is often complicated with conceptual and methodological variability. In a review (Cordova et al. 2017), a wide range of 37–60% of patients met the DSM-IV TR diagnostic criteria for PTSD across. A meta-analysis (Abbey et al. 2015) of 25 studies revealed that studies using self-report PTSD symptoms showed a prevalence of 7.3–13.8%, whereas clinician evaluated method had a prevalence of 6.8% across all types of cancers. Pre-cancer lifetime trauma history, pre-cancer diagnosis of PTSD, young age, advanced disease, and invasive treatment were cited as risk factors. Results from these studies should be cautiously interpreted as most of them used DSM-IV TR criteria and cross-sectional design, limiting information about the onset of symptoms and the course of the disease. In breast cancer literature, the sample with PTSD is over-represented with white female population, affecting the generalizability of these findings. Most of these studies did not indicate the presence of adjustment disorder, which could be a common differential. The expanding but more stringent diagnostic criteria for PTSD in DSM-5 warrants more scrutiny about the methodological aspect of cancer-related PTSD literature.

A review (Gesi et al. 2017) of a few cross-sectional and one longitudinal study found a variable prevalence of PTSD in ovarian cancer patients, ranging up to 45%. Again, use of a dimensional tool to diagnose PTSD without preliminary questions about criterion A and B probably influenced the results. In an Australian study (Shand et al. 2015), using PTSD Checklist-Civilian Version and corroborating with DSM-IV TR diagnostic criteria, the rate of PTSD in ovarian cancer patients was found to be similar to that of the general female population.

Delirium

Delirium is not uncommon in the postoperative period and during chemotherapy. Advanced stage metastatic breast cancer patients have a higher risk of postoperative delirium. The incidence of delirium is high among advanced-stage cancer patients admitted to acute palliative care units. In a large study (De la Cruz et al. 2015b), more than half of all admitted patients with advanced cancer met the diagnosis of delirium, without any differences in age, sex, and type of cancer. A mixed subtype of delirium was the most common type, followed by hypoactive delirium. Only one-third of all delirium cases recovered, indicating a poorer survival associated with delirium in advanced stage cancer. A similar prevalence, ranging from 42% to 88%, was found in the palliative care inpatient unit in another systematic review (Hosie et al. 2013). A Multidimensional Frailty Score (MFS) and preoperative geriatric assessment might predict high-risk patients indicating more chance of postoperative delirium in older women undergoing curative surgery.

Delirium often goes underdiagnosed in cancer patients, given the overlapping symptoms of other causes of cognitive impairment and chronic alteration of attention and energy, including medications, and the disease itself. Hypoactive delirium is often hard to distinguish from depression in cancer patients. In a large study (de la Cruz et al. 2015a), 33% met a diagnosis of delirium when first seen by the palliative care consultant. Out of all cases, 61% were not diagnosed with delirium before the consultation was made.

Causes of delirium in cancer patients are multifactorial. Malignancy-related causes range from central nervous system tumors, primary or metastatic, leptomeningeal disease, or paraneoplastic syndrome. Autoimmune limbic encephalopathy is a relatively uncommon cause of delirium in patients with certain cancers, like small-cell lung cancer and ovarian cancer. Chronic anemia, hypoxia, and hypercapnia and hepatic encephalopathy are some cancer-related morbidities contributing to delirium. Some chemotherapeutic agents are known to cause or worsen delirium. Calcineurin inhibitors (tacrolimus, sirolimus) are known to cause posterior reversible encephalopathy, a condition presenting with headaches, visual disturbances, and delirium. Immunotherapy agents like pembrolizumab can cause autoimmune encephalopathy, while ifosfamide, used in endometrial, ovarian, and cervical cancers, can cause a distinct neuropsychiatric manifestation including delirium, hallucinations, and seizures, even without any brain metastasis (Lo et al. 2016). Corticosteroid is commonly used during chemotherapy, leading to a common occurrence of steroid-related delirium with excitability symptoms. Corticosteroids can also cause elevated mood with a grandiose and paranoid thought process, usually at a dose more than or equal to 40 mg/day or its equivalent.

Psychiatric Disorders in Specific Cancers

Cognitive Impairment

Up to a 70% cancer patients reported impaired attention, memory, and confusion after chemotherapy beyond the duration of treatment. A commonly occurring immediate neuropsychiatric phenomenon with confusion, inattention, impaired registration is known to last for few hours after chemotherapy. However, studies showed a more long-lasting impact on cognition, especially in the domains of executive functioning and episodic verbal memory, in a subpopulation of patients with breast cancer and gynecologic malignancy. At a 9-month follow-up point, after the end of oncologic therapy, 21% of breast cancer patients had significant long-term impairment in verbal-sematic memory, with a poor subjective report of day-to-day functioning (Weis et al. 2009). In a cross-sectional study of all gynecological malignancies, done in an ambulatory setting, a total of 60% of females had decreased cognition, measured by the Montreal Cognitive Assessment (MOCA) screening, with 24% scoring less than 22 on MOCA. Older age, non-white race, uterine and vulvar cancer, significant pain score, and lower education level were associated with a MOCA score of less than 22. Duration of cancer diagnosis and the number of cycles of chemotherapy were not significantly related to the decline in performance on MOCA (Van Arsdale et al. 2016). While estrogen deficiency in prophylactic oophorectomy patients was related to cognitive impairment, a more significant deterioration and persistent cognitive impairment were seen in breast cancer patients who went through both chemotherapy and estrogen therapy (Loibl et al. 2011).

Symptoms of cognitive impairment are easy to be overlooked in the clinic setting, as the focus remains on surveillance and further treatment of cancer. Depression, fatigue, and sleep disturbances influence cognitive function and need to be differentiated in these patients. Several theories, including oxidative stress and impairment in DNA repair, have been suggested as possible mechanisms of cognitive side effects of chemotherapeutic drugs. Alkylating agents lie 5-FU crosses blood–brain barrier and damages neural progenitor cells and oligodendrocytes. This medication might lead to long-term damage of neural conduction mechanism. Imaging studies (McDonald et al. 2013) have demonstrated volume-reduced gray matter density in left cingulate in nonmetastatic breast cancer patients, who received standard chemotherapy (without prior chemo and radiotherapy), including a taxane agent, when compared to women with breast cancer without chemotherapy and control group of women. The frontal gray matter changes were not evident in women that received anti-estrogen therapy and women that did not receive chemotherapy. Structural magnetic resonance imaging (Simó et al. 2013) showed reduced gray and white matter volumes in a subpopulation of breast cancer patients on a long-term follow-up. Genetic polymorphism in the regulation of neurotransmitters catecholamine-O-methyltransferase (COMT) and P-glycoprotein has also been proposed to increase the risk of chemotherapy-induced cognitive impairment.

Catatonia and Autoimmune Encephalitis

Though underreported, catatonia can be a presentation of autoimmune encephalitis (AE) in cancer patients, especially in ovarian malignancy. Autoimmune encephalitis can be diffuse or localized in the limbic area (limbic encephalitis: anterograde amnesia, seizures, and psychiatric symptoms), brainstem (cranial nerve symptoms), or basal ganglia (dystonia). A specific subpopulation has N-methyl-D-aspartate antibody (NMDA-A) in the cerebrospinal fluid. This subpopulation often presents with symptoms of delirium and catatonia, sometimes mimicking a new onset psychiatric phenomenology. Half of the NMDA-A positive autoimmune encephalitis patients had ovarian teratoma (Oldham 2017). Relapse is common; treatment consists of immunoglobulin and steroids as first-line agents, and mycophenolate and rituximab as second-line agents. Early recognition and treatment of catatonia help progression to malignant catatonia. Use of antipsychotics should be cautious in this population, for the same reason. There have been cases where electroconvulsive therapy was needed to treat catatonic syndrome in anti-NMDAR encephalitis in ovarian malignancy patients.

Other antibodies associated with autoimmune encephalitis in gynecological and breast cancers are Anti-Ri, Anti-Yo, Glu-A-1, Glu-A2, and Anti-GABA-A. Subacute onset mania, nonauditory hallucinations, catatonic symptoms, personality changes, delirium, fluctuating presentation over weeks to months, relapsing course, and rapid progression within an episode are some of the essential presenting features of AE. Viral prodromes are seen in almost half of the cases with anti-NMDAR encephalitis. Due to the common presentation with psychosis, mania, and catatonia, nearly 80% of all anti-NMDAR encephalitis initially presented to psychiatry, with 40% of them being initially admitted to a psychiatric hospital.

Psychiatric Aspects of Cancer Treatment

There is a growing need for awareness about psychiatric symptoms, risks of psychiatric disorders, and the importance of recognizing them early, at every stage of cancer treatment. Some of the more risk-prone stages of treatments, when there is a heightened risk of psychological distress and/or psychiatric disorder, are listed below. The National Comprehensive Cancer Network described this significant points in treatment.

- Finding a suggestive symptom and waiting for the diagnosis
- Learning the diagnosis for the first time
- Waiting for a treatment plan
- Discharge from hospital
- End of treatment or a change in plan
- Waiting for follow-up diagnostic results
- Survivorship period
- Recurrence of symptoms
- Approaching end of life

Understanding the vulnerable times in a woman’s life is essential in the overall treatment delivery plan and its outcome. As already discussed in the sections “Psychiatric Disorders in Cancer” and “Psychiatric Disorders in Specific Cancer,” early detection of possible distress symptoms and careful screening and referral for further assessment and management can make a significant change in the treatment outcome and psychological experience of a woman.

Table 2 Psychiatric and neurological side effects of medications used in cancer treatment in women

Medications	Neuropsychiatric side effects
Chemotherapy agents	
Cisplatin	Pain (sensory neuropathy)
5-Fluorouracil	Fatigue, confusion, delirium, seizures (rare)
Ifosfamide	Fatigue, delirium, hallucinations, seizures, cerebellar signs
Procarbazine	Depression, delirium, psychosis, rare serotonin syndrome, when used with antidepressants (due to weak monoamine oxidase inhibitor property)
Methotrexate	Transient delirium, acute and delayed leukoencephalopathy
Taxanes	Fatigue, depression, sensory neuropathy
Hormonal agents	
Tamoxifen	Irritability, sleep disturbances (depression is debated)
Corticosteroids	Delirium, mania, psychosis, anxiety, insomnia, irritability, hyperactivity
Biological agents	
Interferon alpha	Depression, delirium, mania, psychosis, suicidal thoughts
Cytokines	Delirium, persistent encephalopathy
Multikinase inhibitors	
Bevacizumab, Sorafenib	Posterior leukoencephalopathy syndrome

While treating cancer with non-psychiatric medications, many side effects tend to mimic the symptoms of a known psychiatric disorder, and thus knowledge about these side effects is helpful in differentiating them from a primary psychiatric disorder and managing them effectively. Table 2 describes possible psychiatric symptoms related to the use of cancer chemotherapy medications.

Treatment Interventions for Psychiatric Disorders in Cancer Patients

Psychopharmacological Methods

There is a variable pattern of using antidepressant medications in cancer patients worldwide. A study (Sanjida et al. 2016) showed a 15.6% prescription rate (higher than the rate in general population), with a higher rate in females (three times more than the rate in men) and breast cancer patients, and a lower rate from studies conducted in Asia. Most commonly used antidepressant is selective serotonin receptor uptake inhibitor (SSRI). Among breast cancer patients, SSRI medications were initiated along with tamoxifen therapy in 44% of cases. Currently, there is no clear guideline about medication versus psychotherapy treatment for MDD in cancer patients. No single antidepressant medication is proved to be superior to another, though some medications are widely reported to be associated with significant drug-drug interactions with chemotherapeutic agents. Potent inhibitors of cytochrome P 450 2D6 (CYP-2D6), like chlorpromazine, fluoxetine, paroxetine, and tricyclics, should not be the first choice for treatment in patients receiving tamoxifen. Tamoxifen is widely used in estrogen receptor-positive breast cancer and is known to cause depression. Tamoxifen is a CYP-2D6 substrate, to generate its active metabolite endoxifen. There have been some evidence that strong 2D6 inhibitor drugs (mentioned above) are associated with reduced efficacy of breast cancer treatment, with potential for an increase in all-cause mortality rate, as shown in a population-based study, conducted in Canada (Kelly et al. 2010). Haloperidol, methadone, and sertraline are moderate inhibitors of 2D6, whereas venlafaxine, citalopram, and escitalopram are weak inhibitors. It is unclear if the efficacy of tamoxifen therapy solely depends on the CYP-2D6 level, as studies have shown a variable result in regards to the relation between CYP-2D6 phenotypic expression and relapse-free interval in patients treated with tamoxifen (Pritchard 2010). A recent health record-based cohort study on a large number of early-stage breast cancer patients treated with tamoxifen and SSRI failed to show a significant association between antidepressant use and breast cancer recurrence in the same or contralateral side, including metastatic lesions (Haque et al. 2016).

High-risk breast cancer population, like young premenopausal females with early-stage disease or metastatic disease, might benefit from ovarian suppression therapy, which often improves cancer outcome but causes mild-to-severe vasomotor symptoms, affecting the quality of life. SSRI or serotonin norepinephrine inhibitors (SNRI) and mood stabilizers (gabapentin and pregabalin) are often used in moderate and severe symptoms. The benefits of using SSRI/SNRI were similar in breast cancer and non-breast cancer patients in regards to vasomotor symptoms (Leon-Ferre et al. 2017). Venlafaxine and citalopram might be preferred in patients on tamoxifen therapy for reasons of potential enzymatic inhibition. In a meta-analysis in breast cancer survivors, venlafaxine 75 mg/day or more was effective in relieving vasomotor symptoms (Ramaswami et al. 2015). Other treatments for hot flushes are clonidine and megestrol acetate.

Treatment of cognitive symptoms in cancer survivors has sparse evidence in the literature. Several agents including modafinil, erythropoietin, donepezil, and vitamin E have some data in the treatment of chemotherapy-related cognitive impairment in breast cancer patients. Among these, modafinil showed significant improvement in memory but not attention (Cognitive Drug Research tool was used) in patients with prior chemotherapy (Kohli et al. 2009). In a double-blind, placebo-controlled pilot study, erythropoietin showed moderate improvement in executive functioning during the time of chemotherapy, but the improvement was not sustained at 12 and 30 months follow-up after completion of treatment (Fan et al. 2009). In a randomized controlled trial, donepezil with vitamin E and ginkgo biloba failed to show any significant improvement in chemotherapy-related cognitive impairment.

Due to its antagonizing effect on 5HT-2 and 5HT-3 receptors and high affinity for histamine one receptors, mirtazapine is useful in symptoms of anxiety, sedation, appetite stimulation, and nausea. This property makes it effective for the use in anorexia-cachexia syndrome of advanced cancer. Similarly, stimulant medication is used to treat cancer and chemotherapy-related fatigue and depression. Paradoxically, there is some appetite stimulating effect of these medications in anorexia-cachexia syndrome. They also serve as an adjuvant to facilitate analgesic effect of opiate pain medications and help reducing opiate induced sedative effect in severely ill patients with advanced stage cancers. Olanzapine and haloperidol may be useful in treating nausea in cancer patients. Careful monitoring of QTc is needed while using antipsychotic medications, as many patients might be on several QTc prolonging medicines like ondansetron, antibiotics, tacrolimus, tamoxifen, and octreotide. They are also at a higher risk of developing hypomagnesemia, hypokalemia, and dehydration, compared to the non-cancer population.

Benzodiazepines are often used for acute management of anxiety and augmenting anti-emetics during chemotherapy. A careful history is essential, as anxiety should be treated with SSRI/SNRI when it is due to a primary psychiatric disorder. Low doses of antipsychotics can be used for a short duration of time for anxiety and agitation, related to chemotherapy, when not relieved by benzodiazepine. Use of lorazepam more than 2 mg or equivalent, dexamethasone more than 15 mg or equivalent, and morphine more than 90 mg or equivalent, per day, have been associated with increased risk of delirium in hospitalized cancer patients (Gaudreau et al. 2007).

Nonpharmacological Methods

Overall, psychotherapy is known to improve psychological well-being and health-related quality of life in women with cancer but does not have a significant effect on mortality. Women of all ages face a range of challenging problems, including, uncertainty, loss of control, inability to perform duties for their dependents, and loss of body image. Exploring their understanding of the disease and its suffering in the context of their purpose in life is a crucial beginning to determine a suitable plan for psychotherapy for an individual woman.

Targeted groups for specific cancers can help women in reducing their sense of isolation, psychoeducation, sharing information and experience, and helping with coping strategies. In 1989, supportive-expressive group therapy was developed with a focus on symptom management, physician-patient relationship, and strengthen social support. This approach has been tested in studies and was found to be helpful in reducing depression symptoms in a systematic review (Giese-Davis et al. 2011). Supportive-expressive group therapy was also effective in lowering re-experiencing and avoidance symptoms.

Among all psychotherapeutic approaches, cognitive behavioral therapy (CBT) approach has widespread evidence across all age groups. Despite being helpful in allowing survivors to gain a sense of control over the disease, the effectiveness of CBT has been inconsistently shown in the literature. This inconsistency might be due to the variable study designs, sample sizes, study population, and outcomes measures used in these studies. To mitigate this problem, a meta-analysis was done recently to review ten high-quality randomized controlled trials from all over the world (United States, Ireland, France, Australia, Netherlands, and China) (Ye et al.

2018). This analysis looked at the effect size of CBT (including at least three components of CBT) on non-metastatic breast cancer patients' quality of life, depression, and anxiety during their survivorship period. The study found a statistically significant benefit of CBT on depression and anxiety symptoms, as well as on the quality of life. The effect on depression was the most robust in the cancer survivors, and CBT was more effective for depression in the studies done in the USA. A smaller randomized controlled trial (Montgomery et al. 2017), using CBT and hypnosis, in breast cancer patients undergoing radiotherapy found a significant benefit of combined therapy in managing distress over a 4-week period of follow-up after radiation. Other than depression, anxiety, and distress, CBT has also been studied in pain, fatigue, sleep disturbances, and vasomotor symptoms. In a randomized controlled trial (among all cancer patients, 49% had gynecological cancers), looking into the effectiveness of CBT on managing pain, sleep disturbances, and fatigue symptom cluster found a significant reduction of symptoms cluster scores, with improvement in all three symptoms separately, in the treatment group (Kwekkeboom et al. 2012). Cognitive behavioral stress management (CBSM) showed significant benefit in intrusive thoughts and total PTSD symptoms in breast cancer patients (Antoni 2003).

Two meta-analyses (Chow et al. 2004; Smedslund and Ringdal 2004) and two systematic reviews (Newell et al. 2002; Edwards et al. 2008) did not show any improvement in survival with psychotherapy treatment, though they had definitive benefit in improving coping skills and quality of life. In the earlier systematic review of Cochrane Database, group therapy (both cognitive behavioral and supportive-expressive) showed only short-term psychological benefit, without any significant effect on survival. More recently, a systematic review showed survival benefit at 1-year follow-up in metastatic breast cancer, but no benefit at 5-year follow-up (Mustafa et al. 2013). As face-to-face intensive CBT could be difficult in cancer patients, given their various multispecialty appointments, fatigue, and inadequate social support, internet and web-based CBT have been introduced in many clinical settings. A pilot study is currently being conducted in the Netherlands, to look into the efficacy of Internet-based CBT in postmenopausal symptoms in breast cancer survivors. The preliminary findings in this study suggested an overall reduction in hot flushes, night sweats, and endocrine symptoms in survivors, with a high satisfaction rate among the participants (Atema et al. 2017).

Mindfulness-based therapy is another approach, widely used clinically in the cancer population. Its efficacy is reducing mood symptoms, and quality of life was tested in a randomized controlled trial (Hoffman et al. 2012). All these symptoms improved significantly, and the effect persisted at a 3-month follow-up in early nonmetastatic breast cancer patients. A more recent small Korean study found an improvement in pain and distress levels with the use of mindfulness-based stress management (MBSM) in metastatic breast cancer patients, but the effect was not significant on quality of life (Lee et al. 2017).

Role of meaning in one's life has been explored in regards to treating distress and managing stress. Breitbart et al. initially studied meaning-centered psychotherapy.

Both group and individual meaning-centered therapy showed improvement in psychological distress and facilitated spiritual well-being in cancer patients.

Combined psychotherapy and pharmacological approach are more effective in the treatment of chronic depression in cancer patients when compared with either psychotherapy or medication alone. However, patients with a childhood history of trauma respond better to psychotherapy. This concept is particularly relevant in the cancer population, given the vast scope of traumatic re-experience within the diagnosis and treatment of cancer.

Barriers to Implementation of Psychosocial Services

Since Institute of Medicine (IOM) and National Comprehensive Cancer Network's multiple updated recommendations, psychosocial interventions are being included in cancer care in most developed countries. However, variable levels of psychosocial care are seen in different countries, within different regions of the same country and different regions of the same state. This discrepancy points towards the need of exploring the barriers in the implementation of psychosocial care. In a report, IOM and National Research Council Cancer Policy Board (Breitbart et al. 2018) stratified the categories and nature of the barriers in implementing psychosocial care in cancer patients. Some of these are described in Table 3. Health care expenditure and systems of funding have an impact on the

Table 3 Barriers in implementing psychosocial care for cancer

Barriers in implementing psychosocial care in cancer patients
Barriers in access to care A. Insurance coverage: Women without health insurance are diagnosed with breast cancer at a later stage than women with insurance B. Women without health insurance have a poorer survival rate C. Quality of health insurance varies largely: Some of the treatment modalities are known to cause out-of-pocket costs D. Carve-out policy: With increasing influence of managed behavioral health organizations, mental health is often being carved out with a separate budget, network, and financial incentive agreements, leading to complex and inadequate actual coverage for mental health needs in cancer population E. Geographic barrier: In developing countries, access to specialized care remains heterogeneous. In developed countries, there are significant variations in geographical access to care as well
Barriers in systems of care A. Provider–patient communication B. Failure to implement practice guidelines C. Inexperience with psychosocial assessment and administration of tools D. Problems with coordination of complex multidisciplinary care E. Provider's unfamiliarity about available community resources F. Limited consistent quality assurance of standards of care and practice

Prepared with help from the Cancer Policy Board Report by IOM and National Research Council (Institute of Medicine (US) and National Research Council (US) National Cancer Policy Board et al. 2004) availability of psychosocial care. The system varies in different countries, ranging from managed care options in the United States to state or federally run funding program in Australia and out-of-pocket or private insurance payer system in the developing countries. Other than funding level barriers, many systems-level barriers are influencing the homogeneity of clinical practice. An Australian study explored oncologists' beliefs in the perception of barriers in implementing psychosocial care for cancer patients (Fagerlind et al. 2013). This study found that the less psychologically minded providers perceived more barriers. Limited consultation time and lack of knowledge about resources were some of the most cited barriers. As oncologists, social workers, and ancillary staff are often the first-line providers for cancer patients in oncology clinics, training in psychosocial aspects and psychiatric aspects of women's cancer will be helpful in bridging some of the system-based barriers in care.

Multidisciplinary Approach for Coordination of Care

At every stage of cancer diagnosis and treatment, women face unique challenges in balancing their responsibilities and preferences. Cancer diagnosis and care are usually complex, involving several specialties at times. Stress, anxiety, anger, resentfulness, and guilt are common at almost every stage of the disease and treatment progression. Implementing an integrated care approach is helpful for the ailing patients to manage the stressors from complicated treatment schedule. Consultation-liaison psychiatry specialist is often explicitly trained in this model of care, where collocating with the oncology team is encouraged. The three main principles of integrated care are patient-centeredness, multidisciplinary care, and organized care. In a review (Ouwens et al. 2009) of a total of 33 integrated care model trials, conducted in the UK (39%), USA (18%), and Canada (15%), it was found that information provided to the patient about the disease and "decision aids" had a good impact on intervention outcome and patient satisfaction. Follow-up by a specialist nurse, case management, and "one-stop" clinic had an impact on subjective feelings of anxiety and depression. A total of 42% of all studies were on breast cancer patients, and only two of them included all three principles of integrated care.

Cancer Morbidity and Survival: Decision-Making and Psychiatric Impact

Cancer survivors comprise of approximately 4% of the total US population. Almost 22% of them are breast cancer survivors, making it the largest group of cancer survivors (Antoni et al. 2017). With advances in medicine, women with cancer are living longer but facing a variety of life challenges during the survivorship period. Persistent guilt (about family, children, responsibilities), anticipation of recurrence, fear of ending treatment, difficult adjustment to physical loss, reduced self-esteem, problems with social acceptance and body image, difficulty in re-entry into previous life, perceived and actual loss of employment and insurance discrimination, and concerns about infertility are some of the unique and complex life situations faced by women who are cancer survivors. Active coping, supportive family and/or friends, and a perceived sense of purpose in life are some important avenues where the overall well-being of women can be facilitated.

Overall, women with advanced or incurable cancer choose palliative care more often within their end-of-life care. Probably both women and men adopt their beliefs about gender role from the prevailing societal norms of women being vulnerable, more expressive, and support seeking to feel comfortable. All these traits align with the philosophy of palliative care, probably facilitating women to accept it more naturally. However, as some of the cancers in women are detected at a late stage (e. g., ovarian carcinoma, endometrial carcinoma), they pose the unique challenges of parenting concerns and prognostic communications with their dependent children. In a web-based study conducted in 40 US states and five countries, parental concerns and inability communicate about prognosis with their children had a negative association with health-related quality of life in women with metastatic cancer who had dependent children. Of all gynecological cancers, uterine and cervical cancer patients use palliative care more often than the other types.

Conclusion

Cancer is a leading cause of disability, distress, and death in women worldwide. Incidence, diagnosis, treatment, and survival of cancer in women vary widely depending on ethnic, financial, geographical, and social factors, taking a disproportionate toll in the women of low- and medium-income countries. In developed countries, social awareness, advocacy, education, and funding for research contribute to improved overall treatment of cancers in women; but lower-income countries with poor healthcare resources often lag behind, causing premature death of women and disruption of family. Though women play an important role in shaping the future of education, the health of children, social advancement, and economic growth, only a small portion of global spending is directed towards the care of women's cancers. Cancer claims a significant part of global GDP as its economic burden, with a very insignificant portion of that spending going towards the resource-poor regions of the world. More investments should be made towards the overall treatment of cancer in women, including the much-needed psychiatric care, to ensure long-lasting social and emotional disabilities in women and their related families. Within the current scope of treatments, psychiatric knowledge should be effectively used to achieve the goal of care of women as a whole.

Cross-References

- ▶ Culture and Women's Mental Health
- ▶ Depression, Anxiety, and Physical Morbidity in Women

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Psychosis and Physical Comorbidity

12

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Contents

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_20

Abstract

The life expectancy of men and women who suffer from psychotic illnesses is substantially shorter than that of the general population, with 90% of deaths attributable to the sequelae of physical illness. Suicide, accidents, and homicide account for the remaining 10%. Many of the responsible physical illnesses are brought on by heavy smoking, drinking, and lack of activity in the lives of individuals with psychosis. Some of the comorbidity may arise from psychotic illnesses sharing susceptibility genes with seemingly unrelated physical illnesses. Many diseases result from the adverse effects of antipsychotic treatment. It is also reported that the high mortality is due, to some degree, to delays in diagnosis and treatment for which physician stigmatization of mental illness is partially to blame. In many of the comorbid conditions, men and women are unequally affected. This chapter reviews the physical illnesses that complicate the lives of individuals with psychosis and suggests that the responsibility for preventing them is shared among patients, healthcare providers, and health systems. New ways of approaching this escalating problem are urgently needed.

Keywords

Schizophrenia · Comorbidity · Antipsychotics · Prevention · Integrated care

Introduction

Psychosis is a mental state characterized by the blurring of internal and external reality during full consciousness. Its principal symptoms are delusions and hallucinations. The presence of these symptoms is central to the diagnosis of several psychiatric illnesses, notably schizophrenia, delusional disorders, and some affective disorders, and is also a hallmark of some endocrine, metabolic, and neurologic disorders. Psychosis can be a transitory, time-limited response to a trauma, a toxin, or a fever, or it can be a more or less permanent default state, as it is in schizophrenia. When the term severe mental illness (SMI) is used, it refers to mental illnesses of long duration that significantly interfere with everyday life; psychosis is usually, but not always, a component of SMI.

According to surveys conducted in many different parts of the world, the life expectancy of individuals who suffer from psychotic illnesses is reduced by 10–28 years compared to that of the general population (Walker et al. 2015). This is the case despite modern, relatively effective treatment available for psychosis. What is most problematic is that the mortality gap, rather than narrowing over time, appears to be widening. Death does not come as a direct result of psychosis. In approximately 10% of deaths associated with psychotic illness, death is due to self-inflicted or accidental harm attributable to delusions, to hallucinations, or to the cognitive impairment and low mood that are often linked to psychosis. Whether to escape from psychological torment or perhaps to combat adverse effects of medication, people who suffer from psychosis tend to use intoxicating substances, and this, too, contributes to accidental death and death by suicide. This chapter, however, is concerned with the other 90% of conditions that play a role in the high mortality rates associated with this population, the cardiovascular, metabolic, neoplastic, and infectious diseases to which individuals with psychosis are prone. In many instances, men and women are unequally affected by these conditions, and, when that is the case, this chapter will discuss potential reasons and ramifications.

The chapter addresses predisposition, incidence, quality of treatment, and outcome of selected comorbidities, those that most frequently accompany serious mental illness (SMI). Many types of comorbidities, such as cancer, epidemic infections, reproductive problems, and the sequelae of trauma and addiction, are well covered in other chapters in this book, so will receive only glancing attention here.

Possible Antecedents to Psychosis

Some physical problems potentially comorbid with psychosis are more precisely identified as antecedents; they begin prior to the onset of psychotic illness and then continue to impact the course of illness. It is difficult to differentiate among early-life health problems those that are early signs of psychotic illness, those that precede psychosis but are unrelated, and those that are etiological precursors without which psychosis would not develop. It has been estimated that approximately 12.5% of psychosis that starts in childhood or adolescence is preceded by one or more medical disorders that, in all probability, have contributed to its genesis (Sørensen et al. 2015).

Early-Life Morbidities

Any brain compromise in utero or in early childhood, initiated whether by the faulty configuration of a chromosome or by trauma, infection, lack of oxygen, nutritional deficiency, exposure to toxins, electrolyte imbalance, endocrine disruption, or neoplastic process, can add to the risk of schizophrenia in adulthood. It is known that, in general, boys are more at risk for congenital abnormalities than girls are.

Chromosome Abnormalities

Although there are several examples of syndromes resulting from chromosomal abnormalities and associated with schizophrenia, 22q11 deletion syndrome (velocardiofacial syndrome) being the best known (Bassett et al. 2000), the prototype presented here will be Turner's syndrome, a uniquely female disorder.

Sex chromosome abnormalities are the most common chromosomal abnormalities in humans. Via proteins that determine neuron differentiation and synaptic transmission, genes located within sex chromosomes significantly influence neurodevelopment. Abnormalities of these processes in early life can, and often do, result in psychotic symptoms.

Within the schizophrenia female population, there is a relatively high frequency of X aneuploidy (an abnormal number of chromosomes in a cell, e.g., a human cell having 45 or 47 chromosomes instead of the usual 46) such as Turner's syndrome. In this syndrome, which occurs in 1 out of 25,000 female births, one X chromosome is either completely or partially lost. Turner's is three times more prevalent in women with schizophrenia than it is in the general population. Clinical features vary but usually include short stature, a webbed neck, low-set ears, and infertility, plus various impairments of function. Perceptual reasoning, visuospatial memory, numerical skills, attention, and executive functions have all been reported as impaired in girls with Turner's syndrome. Most Turner females have a 45, X0 monosomy, but, interestingly, the mosaic (45,XO/46,XX) is more frequent among those who develop schizophrenia (Jung 2014).

Developmental Abnormalities

Minor physical anomalies, such as slight anatomical defects of the head, hair, eyes, mouth, hands, and feet, are thought to result from injury during the first or second trimester of fetal life and are reportedly more common in schizophrenia patients than in the general population. They may signal a genetic anomaly that impacts more than one organ. Obstetric complications, particularly those associated with ischemia and oxygen deprivation, are known to increase the risk for schizophrenia (Niemi et al. 2003). Low birth weight and delayed motor and language milestones in childhood and developmental illnesses such as autism spectrum disorder and attention deficit hyperactivity disorder, while not strictly comorbidities (because they may no longer be apparent by the time of schizophrenia onset), have been associated with schizophrenia-related illness in adulthood, and they may impact later symptoms. The neurodevelopmental theory of schizophrenia suggests that they may be early manifestations of psychotic illness, but an alternate view is that they so impair perception and social communication in childhood that they increase risk for the later emergence of psychotic illness. Childhood developmental illnesses are more common in boys than in girls.

Physical Trauma

Early child head trauma has historically been linked to schizophrenia. The annual incidence of pediatric brain injury is 400/100,000, with a 1.8:1 ratio for boys vs. girls (2.2:1 in children past toddlerhood). In very young children, the causes of such injuries are usually falls or parental child abuse. During ages 5–14, the causes shift to pedestrian and bicycle injuries, and, by adolescence, motor vehicle accidents take over as the most common cause (Guerreiro et al. 2009). The risk for schizophrenia developing later in life is significantly elevated after early head injury, the risk increasing with the severity of the injury. The path to psychosis may originate in the initial post-injury hemorrhage and lead from neuronal cell death to local ischemia, to inflammation, and to abnormal glial activity (McKee and Daneshvar 2015). It is estimated that psychotic symptoms (e.g., hallucinations and delusions), although present in the aftermath of as many as 20–25% of all traumatic brain injuries, are usually of transient duration.

Childhood Epilepsy

A recent systematic review and meta-analysis of all published literature on psychosis and epilepsy found a pooled odds ratio of 7.8 for the risk of psychosis among individuals with a history of epilepsy when compared with controls. The prevalence estimate of psychosis in the context of epilepsy was 5.6%, somewhat greater (7%) when the epilepsy was of the temporal lobe type (Clancy et al. 2014). The association could be due to a shared genetic susceptibility between the two disorders (neuropathology and neuroimaging show similar structural brain abnormalities – enlarged ventricles and deficits in gray and white matter), or it has been argued that multiple seizures kindle the brain and trigger psychosis. Studies addressing these questions have found that individuals with a parental history of epilepsy have a 2-fold increase in the risk of developing psychosis, while individuals with a parental history of psychosis have a 2.7-fold increase in the risk for epilepsy. The route of influence, therefore, appears to be bidirectional.

Not only can epileptic seizures kindle changes in brain function that result in psychosis, but antiepileptic medication may also play a role. High starting doses of these medications and a rapid titration schedule have been associated with greater psychosis risk. In the cases where psychosis comes first, secondary head trauma and/or substance abuse has been thought capable of precipitating epilepsy. A further consideration is the fact that many antipsychotic drugs lower the seizure threshold.

Some epilepsy syndromes show definite sex differences. For example, idiopathic generalized epilepsy and photosensitive epilepsy are more common in women than in men. Women tend to have more pre-ictal auras, which many consider to be psychotic-like phenomena. Catamenial epilepsy is a neuroendocrine condition in which seizures emerge in a cluster around specific times of the menstrual cycle, most often around the perimenstrual or periovulatory period. Catamenial epilepsy affects from 10% to 70% of women with epilepsy, and at least one in every three women with epilepsy shows catamenial seizure exacerbation, especially perimenstrual (Reddy 2014.) There is a parallel with schizophrenia and mood disorder with psychosis; in both, many women experience exacerbation of symptoms close to the time of the menstrual period.

Childhood Immune Disorders

Individuals with schizophrenia and their first-degree relatives show a relatively high prevalence of childhood autoimmune disorders, such as celiac disease or type 1 diabetes (Chen et al. 2012). This is usually attributed to a shared genetic susceptibility between psychotic and autoimmune disorders. In recent years, the role of the gastrointestinal tract in autoimmune disorders is being more intensively investigated, with the consensus that dietary components can trigger both immune and psychotic reactions via changes in the microbiome (Severance et al. 2016).

Celiac disease, which affects approximately 1% of the population, has long been viewed as a potential precursor to schizophrenia because it manifests early in life (although only one third of cases are diagnosed in childhood), and psychosis can sometimes be its presenting symptom. In a study of 7,997 people admitted to a Danish psychiatric hospital with an initial psychiatric episode, those with celiac disease were found to have a 3.2-fold increased relative risk of being diagnosed with schizophrenia (Eaton et al. 2004). Moreover, gluten-free diets have been reported to ameliorate the symptoms of schizophrenia. A few studies have suggested that schizophrenia and celiac disease may both be associated with similar or adjacent genes since some of the genetic susceptibility to schizophrenia appears to lie in the HLA region, the genomic region that includes genes for autoimmune disorders such as celiac disease.

The gender prevalence of celiac disease is said to be equal; age at diagnosis peaks in females between age 40 and 45, while males show a childhood peak (ages 10–15) and an adult peak (ages 35–40). For unknown reasons, two to four times as many women as men are diagnosed as adults, reflecting not the true prevalence of the disease but, rather perhaps, the failure to adequately diagnose adult males. The connection between psychosis and celiac disease, if there is one, remains a matter of debate.

Early Exposure to Infection

Many prenatal and early childhood infections have been associated with the later development of schizophrenia. For instance, both maternal influenza and rubella in early pregnancy have foreshadowed psychotic illness. Torrey and Yolken (2017) especially single out for attention the infectious agents *Toxoplasma gondii*, cytomegalovirus, varicella-zoster virus, and herpes simplex virus on the grounds that infections that target the eye are of particular significance to how children subsequently see the world. There may be unique effects of individual agents on the brain, or, alternatively, all may act through a common pathway, influencing the course of brain development through increases in the level of inflammatory cytokines. Later in childhood, infections of the urinary tract may predispose to psychosis because a high prevalence has been noted in the histories of adults with schizophrenia (Carson et al. 2017).

In general, males are more susceptible to infection than females. In contrast, females are more susceptible to autoimmune and inflammatory diseases (Marriott and Huett-Hudson 2006).

Health Problems in Adolescence and Early Adulthood

Health problems emerging at adolescence can serve to trigger psychotic episodes, probably in individuals with a prior genetic susceptibility or those exposed to situations of stress. A high fever due to infection can, for instance, precipitate a psychotic illness. It is possible that the triggering effect may be induced by the treatment of the illness (antibiotics, for instance) rather than the illness itself.

Eating Disorders

Eating disorders patients on starvation diets can develop electrolyte and metabolic imbalances that promote the emergence of psychotic symptoms. It has been suggested that starvation is especially psychotogenic when it occurs during adolescence, a critical period for brain structural, neurochemical, and molecular changes, especially those changes that are involved in regulating dopamine pathways (Jia et al. 2013). It is also possible that, in some cases, dopaminergic antidepressants such as bupropion, prescribed to eating-disordered patients in an effort to stimulate appetite, can act as a trigger. Eating disorders are far more prevalent in women than in men, but substance abuse (e.g., alcohol, cannabis, amphetamines, opioids, cocaine) during adolescence, which is more prevalent in men, is thought to be capable of harming the brain in a similar way.

Thyroid Disease

Several thyroid conditions starting in adolescence and early adulthood (all more common in women than in men) are known to be associated with psychosis. Severe hypothyroidism, whether from autoimmune Hashimoto’s disease or following upon thyroid surgery, can lead to “myxedema madness” (Heinrich and Grahm 2003). Graves’ disease or thyrotoxicosis can also be a precursor to psychosis. Thyroid disease is a particular risk for women during the postpartum period.

Autoimmune Disease

Essentially all autoimmune disease is more prevalent in women than in men and is present in about 3.6% of individuals with schizophrenia (Eaton et al. 2006). Not only the prevalence but also the severity of most autoimmune diseases are influenced in one direction or the other by female gonadal hormones.

Morbidities of Older Age

Women are overrepresented in the population of first-onset individuals who develop psychosis in older age (Riecher-Rössler et al. 1997). For instance, women constitute approximately 80% of first-onset samples over age 60. Several factors have been considered as possible explanations for the relatively high female prevalence of late-onset schizophrenia. They include the dramatic endocrine changes of menopause, the greater longevity of women, and the stresses of the caretaking roles often assumed by women at this age.

As a person ages, various afflictions associated with age have been reported as potential precipitants of psychosis. Infections and high fever are known culprits, as are sensory losses. Diminution of sight or hearing can lead to problems with communication, and increased isolation, which, in turn, can act as significant triggers of exaggerated feelings of suspicion, psychotic thinking, and hallucinations (Blazer 2018). Disabling hearing impairment, suffered by approximately 5.3% of the world’s population, is thought to increase the risk for delusions and hallucinations, but this remains controversial. With age, hearing at most frequencies declines more than twice as fast in men than it does in women, and the decline starts later in women, usually after menopause. In women, older age at menopause seems to be a risk factor for hearing loss (Curhan et al. 2017).

Age-associated visual impairments, such as cataracts or macular degeneration, have been linked to paranoid psychosis and visual hallucinations. Social isolation and cognitive deficits due to vascular pathology are also factors in late-onset schizophrenia or of symptom exacerbation in chronic schizophrenia. Sleep loss associated with old age may play a part. After an experimental sleep loss condition, research participants report significant increases in paranoia, hallucinations, and cognitive disorganization. There appears to be a consensus that insomnia plays a causal role in the occurrence of some psychotic experiences (Reeve et al. 2018).

Medical Conditions with Psychotic Symptoms (Table 1)

The lifetime prevalence of all psychotic disorders is approximately 3%: 0.9% schizophrenia, 0.2% delusional disorder, 0.2% bipolar I disorder, 0.4% major depressive disorder, 0.4% substance-induced disorder, and 0.2% psychotic disorders due to a general medical condition (Perala et al. 2007). Genetic diseases (Niemann-

Table 1 Conditions associated with psychotic symptoms

Auditory and visual nerve damage
Autoimmune disease: systemic lupus
Brain disease
Dementia
Delirium
Embolism
Encephalitis
Epilepsy
Hemorrhage
Huntington's disease
Migraine
Multiple sclerosis
Neoplasm
Uremia
Vasculitis
Wilson's disease
Electrolyte imbalance: hyponatremia
Endocrine disease: hypo- and hyperthyroid states, Addison's disease
Head trauma
Infection with high fever
Porphyria
Toxic states: substance abuse, poisonings
Vitamin deficiency: thiamine, vitamin B12

Pick disease, Wilson's disease, porphyria, and homocystinuria), brain diseases (encephalitis, brain tumors, cerebrovascular disease, migraine, multiple sclerosis, Alzheimer's disease, Parkinson's disease, Huntington's disease), autoimmune diseases (especially systemic lupus erythematosus), thyroid diseases, and auditory and visual nerve damage can present with psychotic symptoms.

Illness Resulting from Treatment for Psychosis

The manifestations of psychosis are such that they not only cause great distress to patients and to their families but they also, not infrequently, pose risks to others and sometimes lead to suicide, the suicide rate in this population being approximately12 times higher than among age peers. For these reasons, the treatments used in attempts to reduce psychotic symptoms have historically been relatively harsh, e.g., isolation, chaining, sterilization, malaria induction, scalding and freezing baths, dental extraction and other surgery, shock therapies, exorcism, frontal lobotomy, and many other forms of healing that sound more like torture than treatment to modern ears. Harsh treatment inevitably brings repercussions that negatively affect health. A good example is the tuberculosis-schizophrenia-institutionalization link. Schizophrenia was linked for many years with tuberculosis (TB) because TB was historically very common in institutional settings that were crowded and unsanitary. Even today, in some countries, the prevalence of TB is as much as 16 times higher in institutionalized patients than it is in the general population (Rasolofo-Razanamparany et al. 2000). Where individuals with schizophrenia live in poverty, close quarters, and squalid surroundings, the tuberculosis rate continues to be high. The lesson here is that, sometimes, the treatment of psychosis, rather than the psychosis itself, is responsible for ill health.

The antipsychotic (AP) medications in use today, though very effective for many of the symptoms of psychosis, can also promote the emergence of a variety of illnesses (unless stated otherwise, the information in this section of the chapter is taken from the papers reviewed for Solmi et al. 2017). Some patients are more susceptible to drug reactions than others, perhaps because of genetic vulnerabilities, perhaps because their APs interact negatively with other drugs they take, or perhaps because their prescribed dose is unnecessarily high. The elderly are especially vulnerable to overdosing because age-associated liver and kidney impairments prevent the adequate elimination of APs. In general, women are more vulnerable to side effects of drugs than men are. This may be because of the idiosyncracies of the female immune system or because female pharmacokinetics and pharmacodynamics result in blood levels that are too high (Rademaker 2001).

The prevalence of specific AP side effects differs according to the age of the patient – e.g., in the pediatric population, the main side effects of APs are extrapyramidal; in the adult population, they are mainly metabolic (e.g., obesity, lipid disturbances, altered glucose homeostasis); in the over 65 population, they are mainly cardiovascular (coronary heart disease, thrombophlebitis) and neurologic (stroke and dementia) (Correll et al. 2015).

Obesity

Individuals diagnosed with schizophrenia have a 2.8–3.5 increased likelihood (over that of the general population) of reaching a body mass index of 30 or higher and, thus, qualifying as obese. The percentage of patients gaining weight during antipsychotic treatment can be as high as 80%, depending on the drug used, with approximately 30% of patients developing obesity (Correll et al. 2015). Because the spike in obesity in this population correlates in time with the introduction of second-generation antipsychotic drugs, these agents have been held responsible for this phenomenon. In fact, most antipsychotics substantially increase weight, which first leads to obesity and then to metabolic syndrome. This syndrome is defined by the presence of three or more of five criteria: central obesity, elevated blood pressure, low levels of high-density lipoprotein cholesterol, hypertriglyceridemia, and hyperglycemia. Patients with metabolic syndrome are subsequently at increased risk for cardiovascular disease. Being overweight also increases the risk for respiratory problems, osteoarthritis, liver problems, and certain cancers, not to mention the social opprobrium, physical discomfort, and lowered self-esteem that obesity entails. For women, extra weight also leads to reproductive problems and potential harm to the fetus and neonate. Seven of 16 categories of birth defects have been attributed to overweight mothers, most linked putatively to undiagnosed gestational diabetes. There is no hard evidence, however, that the use of weight-inducing antipsychotics during pregnancy increases the risk for congenital malformations.

The weight-gain liability of antipsychotic drugs has been attributed to histamine (H1) receptor binding, which increases appetite, increases food intake, and delays the perception of satiety (De Hert et al. 2011).

Diabetes

There is evidence that the prevalence of type 2 diabetes is two- to threefold higher in schizophrenia than in the general population, the precise cause remaining in dispute. Schizophrenia itself confers a high endogenous risk for diabetes, putatively attributable to shared susceptibility factors. Through their weight-gain potential, APs contribute to the elevated risk and, furthermore, can do so independently of weight gain by directly promoting insulin resistance through action on muscarinic receptors (Rado 2017).

Cardiovascular Disease

The Blockade of Cardiac Potassium Channels

The blockade of cardiac potassium channels by APs and the subsequent prolongation of ventricular repolarization as shown by the length of the QTc (rate corrected QT interval on the electrocardiogram) is one of the best examples of sex differences in response to drugs (Darpo et al. 2014). QTc prolongation is a marker for a rare, drug-induced ventricular arrhythmia called torsades de pointes (TdP) that is life-threatening. Two thirds of cases of drug-induced TdP occur in women. The degree of QTc prolongation is dose-dependent and varies among antipsychotics, a reflection of their different capacities to block cardiac ion channels. Arrhythmias are more likely to occur if drug-induced QTc prolongation coexists with other risk factors, such as heart failure, electrolyte imbalance, overdose, use of physical restraints, old age, hepatic or renal impairment, and slow metabolizer genetic status. Patients with schizophrenia have been reported to be two to three times more likely to experience sudden cardiac death than other individuals. TdP is a potential cause of sudden cardiac death (Correll et al. 2015).

Orthostatic Hypotension

Because of adrenaline alpha-1 receptor blockade, many antipsychotic drugs cause orthostatic hypotension, which can manifest as fainting, transient ischemic attacks, and falls that, in turn, can result in serious fractures. Among second-generation APs, clozapine and quetiapine have been most implicated in causing this effect

Myocarditis, Cardiomyopathy

Clozapine and quetiapine also pose the greatest risk for myocarditis, a rare side effect demographically associated with young male patients. Cardiomyopathy and heart failure have also been associated with clozapine.

Vascular Effects

Antipsychotic drugs exert direct and indirect effects on the vascular system, often leading to severe complications via thromboembolism. Embolism from peripheral vessels and from the heart increases the prevalence of strokes in patients on antipsychotic medication. This is especially the case in elderly patients.

APs also induce a hypercoagulability state that raises the risk for venous thromboembolism, pulmonary embolism, and cerebrovascular accident. Surgery and the immediate postpartum period in women are times of particular risk. APs are said to increase the rate of fatal pulmonary embolism 13-fold. The association is strongest in smokers. Contraceptives, hormone replacement, pregnancy, and obstetrical complications are supplemental risk factors for women.

Hypercoagulability and hyperlipidemia secondary to AP decrease the diameter of cardiac arteries and may, although there is no hard evidence for this association, increase the risk of myocardial infarction.

Low-potency antipsychotic drugs that induce sedation, e.g., clozapine, are more strongly associated with venous thrombosis than are high-potency drugs, the risk being highest during the initial months of treatment when sedation is a prominent side effect.

Hypertension

Despite the fact that most antipsychotic drugs decrease blood pressure, hypertension has become a common problem in the SMI population as part of the metabolic syndrome. Partial dopamine agonists such as aripiprazole directly increase blood pressure (Solmi et al. 2017).

Neurologic Effects

Cerebrovascular Accident

Stroke is the third leading cause of death and the most common cause of permanent disability in the general adult population, with men showing greater susceptibility than women. Patients with schizophrenia-related disorders, men and women, are especially vulnerable. A comparison of individuals with schizophrenia and a control group with similar risk factors found a fourfold increase of cerebrovascular morbidity in the schizophrenia group. The investigators attributed the risk to the duration of time on APs (the longer, the greater likelihood of stroke) and to polypharmacy, the practice of taking two or more different antipsychotics simultaneously.

Although more men than women suffer a stroke, a study from Israel showed that more women than men died as a result. In that study, the in-hospital mortality rate among women with stroke was 13.2% compared to 5.8% in men. This was explained by the fact that women more often than men suffered from associated diabetes, hypertension, and hypercholesterolemia (29.1% of women vs. 14.3% of men) (Hochner-Celnikier et al. 2005).

Seizures

Antipsychotic drugs lower the seizure threshold and can, therefore, induce epileptic seizures. Of the first-generation antipsychotic medications, chlorpromazine is associated with the greatest risk of seizures. Clozapine is the second-generation antipsychotic most frequently associated with seizures. Rapid dose titration and drug-drug interactions increase the likelihood of seizures. Clinical variables, such as young age, and high antipsychotic dose may help to identify subpopulations at relatively high risk for treatment-emergent seizures. While the precise mechanism is not known, a role of D2 and D3 receptors has been suggested for the pathway from drug to seizure. Drug-induced stuttering, which is considered to be a form of myoclonus, has been strongly associated with clozapine treatment.

Sedation

Most AP drugs induce sedation, which increases the risk of falling, can lead to respiratory compromise and, potentially, to fatal kitchen accidents or to road accidents. Sedation is linked to the blockade of histaminergic and adrenergic receptors. An important issue for women with psychotic illness is child custody determination based on a mother's perceived ability to take effective care of her children. The sedation caused by APs has been used as a reason to take infants away from their mothers, and the fear of losing their children has caused mothers with psychosis to stop taking their drugs and, as a consequence, relapse and, in turn, lose their children (Seeman 2012).

Extrapyramidal Side Effects

Extrapyramidal side effects of APs include bradykinesia, muscle rigidity, tremor, dystonia, akathisia, and tardive dyskinesia. These effects are all linked to the degree of dopamine D_2 receptor occupancy of the various APs. They are mainly associated with first-generation APs and can cause more than discomfort and unsightliness. Tooth grinding or bruxism contributes to dental problems. Dystonias can cause dysphagia, which can lead to choking, or laryngeal dystonia, which interferes with speech and produces abnormal vocal pitch. APs can cause blepharospasm and oculogyric crises, the latter sometimes fatal. While these reactions disappear once the offending drug is withdrawn or the dose reduced, tardive dyskinesia (TD), a disorder that involves involuntary choreoathetoid repetitive movements such as chewing and tongue protrusions, is difficult to reverse. It paradoxically worsens when the drug is stopped. The mean prevalence of TD in the population taking antipsychotics is 20–25%. That percentage is significantly higher in patients on first-generation AP drugs and climbs steeply with every year of patient age. Tardive dyskinesia can manifest as postural instability that leads to falls and bone fractures. Even when it spares function, TD is noticeable and increases mental illness-associated stigma. In women, the risk for TD increases after menopause because of the rapid loss of the antidopaminergic effects of estrogens at that time (Turrone et al. 2000). Traditionally, it has been taught that women were more susceptible than men to TD, but a relatively recent meta-analysis fails to confirm this finding (Tenback and van Harten 2011).

Antipsychotics interfere with gait and mobility, partly because of the extra weight gain but also because of Parkinsonian rigidity. When compared to controls, patients show a significantly decreased gait velocity, predominantly due to a shorter stride length. This is especially marked in those treated with first-generation antipsychotics. Handwriting is also cramped, as is the handwriting of Parkinson's patients.

Cognitive Impairment

Cognitive impairment resulting from APs is mediated by anticholinergic effects and aggravated by the use of adjunctive anticholinergic medications often prescribed to counteract extrapyramidal side effects. The cognitive effect of antipsychotics can be influenced by baseline cognitive ability, anxiety, and mood. The concomitant use of anticholinergic antidepressants substantially adds to the risk of cognitive impairment (Solmi et al. 2017).

Hyperprolactinemia Effects

Antipsychotic medication blocks dopamine (D2) receptors on the lactotrophs of the anterior pituitary gland, releasing these cells from dopamine inhibition, which results in hyperprolactinemia. This effect is most closely associated with first-generation antipsychotics and also with amisulpride and risperidone. These drugs can raise prolactin levels tenfold above their pretreatment values. Prolactin elevation, defined as a level above 18.77 ng/ml for males and above 24.20 ng/ml for females, is found in almost half of men and postmenopausal women on AP but in over 65% of reproductive age women. Because high prolactin inhibits the pulsatile production of gonadotrophin-releasing hormone from the hypothalamus and the ovarian secretion of estrogen, approximately one third of premenopausal females whose prolactin is elevated have low estrogen levels. Hyperprolactinemia stimulates the production of dehydroepiandrosterone sulfate within the adrenal gland, which is metabolized to testosterone in peripheral tissues (Solmi et al. 2017).

Osteoporosis

Because of low estrogen levels, individuals taking APs are at increased risk for osteoporosis and bone fractures. Hip fractures are of special importance because of their association with high mortality. This is a risk for both sexes in older age and a particular risk for women after menopause when estrogen levels precipitously drop.

Tumors

Several cases have been reported associating prolactinoma with antipsychotic use. High prolactin levels have also been reported to be associated with an increase in the risk for breast and prostate cancer, but no causal linkage has been demonstrated.

Sexual and Reproductive Dysfunction

Sexual dysfunction, including decreased libido, erectile dysfunction, dyspareunia, and anorgasmia, is frequent during antipsychotic treatment and is probably mostly due to hyperprolactinemia. Compared with sex-matched controls, the odds ratio for sexual dysfunction is 15.2 for women and 3.7 for men, an often underappreciated fact. Gynecomastia and galactorrhea can occur in both sexes, and in women, high prolactin levels can also lead not only to amenorrhea but also to infertility (Solmi et al. 2017). Switching to prolactin-sparing AP drugs is the answer to hyperprolactinemia, but reproductive age women must be warned about the subsequent possibility of unwanted pregnancy.

Acne and Hirsutism

The drop in estrogen leads to a high androgen-to-estrogen ratio that can manifest as acne and facial hirsutism, common and distressing complaints of women. Obesity, smoking, and oral contraceptives heighten the risk of hirsutism and acne in women taking AP drugs.

Autoimmune Disease

Hyperprolactinemia is associated with autoimmune diseases such as systemic lupus erythematosus, rheumatoid arthritis, Sjogren's syndrome, Hashimoto's thyroiditis, celiac disease, type 1 diabetes mellitus, Addison's disease, and multiple sclerosis. This is probably a result of a prolactin-induced proliferation of immature autoreactive B lymphocytes, immunoglobulins, and autoantibodies. Schizophrenia has been associated with a nearly 50% higher lifetime prevalence of one or more autoimmune disorders, most of them more prevalent in women than in men (Solmi et al. 2017). Very often, however, these conditions precede treatment and, therefore, cannot be attributed to APs.

While many APs raise prolactin levels, hyperprolactinemia in schizophrenia can exist independently of APs, especially in women (Riecher-Rössler 2017). Elevated levels of prolactin have been found in antipsychotic-naïve patients at-risk-for-psychosis and in first episode patients. Prolactin levels are known to rise in response to stress (Bernard et al. 2019; Ittig et al. 2017).

Other Antipsychotic Effects

Respirology

APs have been blamed for increasing the risk for pneumonia in parallel with increased drug dosage. This is particularly the case with clozapine because of the hypersalivation and the subsequent risk of aspiration that is especially troublesome during the early weeks of treatment. Pneumonia is of greatest danger for elderly patients. Polypharmacotherapy may further increase pneumonia risk. In cases of overdose of AP, respiratory depression can occur as well, due to central sedation and peripheral respiratory muscle impairment. Sleep apnea (perhaps because of its association with snoring) is thought of as a male disorder, but women are not exempt. Sleep apnea has been shown to be more frequent in patients taking second-generation APs, probably because of the induced weight gain.

Sleep

Several case reports have described sleep disturbances in association with antipsychotics, but there is no clear evidence as yet of a direct association.

Gastroenterology

Gastrointestinal motility is also reportedly increased by APs. This means that all medications taken by the patient will be poorly absorbed. Clozapine prolongs colon transit time almost fivefold, leading to severe constipation, a complaint often associated with other APs as well. Constipation can be serious, leading to paralytic ileus, fecal impaction, bowel obstruction, and intestine/bowel perforations. Partial D2 agonists such as aripiprazole can induce nausea, especially at the start of treatment. Dry mouth is a frequent result of APs, an anticholinergic side effect that increases the risk of dental caries. It contributes to poor oral health because saliva is essential to lubricate, cleanse, remineralize, buffer, and protect teeth and gums against infection. Lack of sufficient saliva leads not only to dental caries but also to periodontitis, stomatitis, gingivitis, and candidiasis. Users of xerogenic (mouth drying) medications are characterized by bad breath and missing teeth.

Long-term use of antipsychotics is associated with abnormal liver function tests in almost 80% of patients, notably those taking chlorpromazine or clozapine. Abnormal test results are usually, however, transient. Predisposing factors to liver damage include older age, high doses, alcohol abuse, and a history of prior hepatic disease.

Nephrology

Most APs are excreted in urine, which can lead to their accumulation in the elderly who suffer from age-related renal impairment. Oral aripiprazole and ziprasidone are excreted in feces and are, therefore, safest for people with kidney disease.

Urology

AP drugs with strong anticholinergic properties can induce acute urinary retention, while APs with strong sedative effects can lead to urinary incontinence. Incontinence is a major problem in older people. It can occur within hours of initiating an antipsychotic. The bladder is vulnerable to the adverse effects of drugs because drug metabolites are excreted through the kidney and into the bladder. In women, stress incontinence worsens with the drop in estrogen that comes after menopause so that women experience urinary incontinence twice as often as men.

The mechanism of clozapine-induced urinary incontinence is thought to be an effect of alpha-adrenergic blockade on sphincter tone. Double incontinence (urinary and fecal) has been reported with risperidone, olanzapine, and clozapine.

Hematology

Neutropenia, thrombocytopenia, pancytopenia, and agranulocytosis occur with AP treatment, most notably with clozapine. Thought to be an immune reaction, clozapine-induced agranulocytosis is among the least understood adverse drug reactions in psychopharmacology, although female sex and polypharmacy are generally considered risk factors. No differences in age or gender distribution of the other blood dyscrasias have been found. Although blood dyscrasia in infants whose mothers take clozapine during pregnancy is a theoretical risk, it has never been reported.

Sexual Dysfunction

As discussed earlier, sexual dysfunction can be brought on by hyperprolactinemia but also by α-adrenergic antagonism. Some APs induce priapism and retrograde ejaculation in men. Moreover, drug-induced sedation diminishes sexual arousal and desire in both sexes.

Electrolyte Imbalance

Hyponatremia risk is increased with antipsychotic treatment, but data are available only in the form of case reports and observational studies. A problem in establishing cause and effect is that many SMI patients concomitantly take drugs other than APs and, in addition, suffer from psychogenic polydipsia, which can account for the hyponatremia (Sahoo and Grover 2016).

Neuroleptic Malignant Syndrome

Neuroleptic malignant syndrome (NMS) is a serious side effect of antipsychotic medication, characterized by hyperthermia (>38 °C), muscular rigidity, clouded mental status, and autonomic deregulation (sweating, hypersalivation, rapid heartbeat, low blood oxygen, labile blood pressure) that can sometimes lead to death. NMS can occur with both first- and second-generation APs. It frequently starts shortly after the initiation of drug treatment (mean onset time is 10 days after starting a new medication). Several factors, such as the use of high doses, abrupt withdrawal of anticholinergic drugs, polypharmacy, physical restraint, dehydration, older age, and multiple medical comorbidity, increase the risk.

Hypothermia

Sporadic cases of hypothermia have been described in association with antipsychotics, especially in older age and in the presence of diabetes and, typically, when a new (for the person) antipsychotic is being introduced. Serotonin antagonism has been suggested as a mechanism but without robust evidence. Body temperature is downregulated by dopamine and upregulated by serotonin so that drugs potent at both these receptors (like olanzapine) are the ones most likely to cause hypothermia, especially at drug initiation or whenever the dose is rapidly increased. Hypothermia has been known to occur after even one dose of a new potentially offending drug when taken by a susceptible subject.

Dermatology

Antipsychotic medication can cause a number of adverse skin reactions such as urticaria, photosensitivity, pigmentation, and angioedema, sometimes accompanied by dangerous systemic symptoms (Steven Johnson syndrome). Antipsychotics can induce hair loss, not only from the scalp but also from eyebrows. Drug-induced hair loss causes hair follicles to go into their resting phase (telogen) and to fall out prematurely; usually there is a loss of 100–150 hairs a day that begins within 2–4 months after starting the offending drug. The severity of hair loss depends partly on dose but mainly on individual sensitivity.

Ophthalmology

Most antipsychotics, especially first-generation APs, have been implicated in the formation of ocular cataracts, and ocular pigmentation has been observed with chlorpromazine, thioridazine, and clozapine treatment.

Antipsychotic Drug Withdrawal

Withdrawal syndromes (nausea, emesis, anorexia, diarrhea, rhinorrhea, diaphoresis, myalgia, paresthesia, anxiety, agitation, restlessness, and insomnia) related to antipsychotic treatment are often experienced, especially in relation to APs with a short half-life, such as quetiapine. Aripiprazole has a long half-life, while the other AP drugs lie in between the two. The most important determinant of rebound syndromes (psychotic relapse) after drug discontinuation is the duration of drug attachment to the D2 receptor. Clozapine, for instance, spends very little time at the receptor, so that even one missed dose can provoke a return of psychotic symptoms, whereas haloperidol attaches for a relatively long period of time (Seeman 2011).

Undercare and Overcare

In general, patients with psychotic disorders are relatively neglected and undertreated, which causes considerable distress and ill health. Paradoxically, they are sometimes overtreated in the sense that they receive ill-advised polypharmacy and off-label medication or overly high drug dosages (Heald et al. 2017). The problem is intensified when patients are seen by many doctors and, therefore, many prescribers, each of whom adds on new drugs, often without being fully informed of existing regimens. Drug doses that are raised during acute episodes of psychosis unnecessarily stay at the same level after the episode is over. There is also a belief among some practitioners that all traces of psychosis need to be eliminated, so doses are raised in the hope of achieving this unrealistic goal. A further key contributor to overcare is the separation between the mental healthcare sector and the general healthcare sector (Horvitz-Lennon et al. 2006). The poor integration between these two health systems poses major challenges for holistic treatment.

With increasing age, both women and men show the negative impact of too high a dose of AP, but there are notable gender differences. With advancing age, women's blood concentrations of AP are 20–30% higher than those of men taking the same dose. This is perhaps because, as the response to APs diminishes after menopause in women (González-Rodríguez et al. 2016), AP doses are increased in order to address persisting symptoms.

Seventy-five percent of antipsychotic drug users report side effects (importantly, twice as many women as men) (Iversen et al. 2017). For most care providers, the benefit of antipsychotic medication clearly outweighs the costs (Correll et al. 2018), but beyond treatment during the acute stage of illness, many patients do not agree (Bjornestad et al. 2017).

Psychosis Secondary to Drugs for Other Conditions (Table 2)

Autoimmune disorders, allergic disorders, and rheumatologic disorders all sometimes require the use of corticosteroids, which themselves induce psychotic symptoms and can worsen symptoms in patients with schizophrenia. There are case

Table 2 Potential psychosis-causing drugs

Adrenergics
Antiarrhythmics
Antibiotics
Anticholinergics
Antidepressants
Antihistamines
Antimalarials
Antituberculars
Corticosteroids
Dextromethorphan
Dopamine agonists
Interferon
Thyroid hormones

reports on a variety of medications other than steroids that produce psychotic symptoms in vulnerable individuals. Depending on circumstances and on the amount taken, these include mind-altering drugs (LSD, mescaline, ecstasy), thyroxine, adrenergic cold medications, diet pills, tuberculosis drugs (isoniazid, ethambutol, cycloserine), antiepileptics, malaria drugs, dopamine agonists used in Parkinson's disease, antidepressants (ketamine, bupropion, St. John's Wort, citalopram), isotretinoin for acne, interferon, fluoroquinolones for infections, stimulants for attention deficit disorder, bromocriptine for lactation suppression, and anticholinergics. Psychosis can also occur upon withdrawal from psychotropic medications (Griswold et al. 2015).

Comorbidities Attributable to Lifestyle

The "lifestyle" of patients with schizophrenia varies with the opportunities and constraints that they face and, as shown above, also by the treatments they receive. The term, "lifestyle" as applied to schizophrenia in the Western world, usually refers to life outside of institutions in downtown urban settings, in boarding homes or temporary shelters or in the family home. The person most often described is without regular occupation, on a limited budget, dependent on the mental health system for provision of healthcare, medication, social outlets, and recreation. Life is very often linked to heavy use of tobacco; drugs such as alcohol, cannabis, cocaine, and amphetamines; unhealthy diets; absence of physical activity; relative lack of hygiene; transient relationships; substantial obesity; poor health; medication side effects; and perceived stigmatization. This applies to both men and women; men, however, use drugs and alcohol more frequently and more extensively than women. The relative dearth of social relationships with family members, neighbors, work colleagues, and childhood friends is particularly important with respect to health in that the quality and extent of such relationships are known determinants of physical and mental health.

Results of Loneliness, Social Exclusion, and Sexual Exploitation

Loneliness and social exclusion are common, emotionally distressing experiences for individuals with SMI. The relatively small size of social networks and diminished family support that characterizes this population translate, among other disadvantages, into a paucity of advice or guidance about health matters.

HIV Infection

Lack of guidance with respect to safe sex is one reason why the prevalence of HIV in persons with schizophrenia is between 2 and 20 times higher than it is in the general population, although this depends on the source of the study sample. The high degree of substance use is undoubtedly an added factor. There are other factors – many people with schizophrenia are poorly acquainted with world news and have a relative lack of knowledge about HIV-related risks. They may unknowingly, for reasons of loneliness and isolation, engage in sexual behavior that is high risk for sexually transmitted disease (STD), for instance, sex with strangers or sex without a condom. Because of their financially straitened circumstances, they may be tempted to exchange sex for money or for drugs and cigarettes. Voluntary testing for HIV is infrequent in this population, and it is not ethically permissible to conduct mandatory testing in psychiatric facilities (although testing for syphilis many years ago used to be routinely done, the rationale was different; its purpose was to rule out syphilis-induced psychosis) (Meade and Sikkema 2005).

Women with mental illness contract HIV at higher rates than their male counterparts (Seeman 2015). That is probably because women are exposed to more risks than men. Women with SMI, more so than men, engage in the bartering of sex for necessities. They may be coerced into sex in the context of domestic violence or rape while having limited access to STD protection. In some parts of the world more than in others, gender norms limit female assertiveness when negotiating for safer sex. Female genital mutilation, a risk factor for STD, is practiced in some cultures. Many women who become infected with HIV acquire the infection from their primary male partner. If they fear the partner's rejection or if they fear physical abuse, they do not insist on the use of condoms during sexual intercourse. Furthermore, their wish to become pregnant may override their fear of STDs. Women sometimes expose themselves to pregnancy while infected, which then poses risks for the child.

Results of Poor Hygiene

Many persons with schizophrenia, because of negative symptoms such as apathy and indifference to social demands, tend to neglect everyday routines such as showering, clothes laundering, tooth brushing, or hair combing. The neglect of teeth and gums plus the tendency of psychotropic medication to cause mouth dryness lead to the poor dental status of this population, which is a source of infections and, potentially, of deadly infections such as endocarditis. Poor hygiene and inattention to appearance influence the reactions of others and contribute to stigma, discrimination, and substandard health provision.

All infectious disease, respiratory, urinary, and gastrointestinal is increased under poor hygienic conditions.

Results of Unemployment and Poverty

Lifelong unemployment and social exclusion lead to poverty, and poverty determines where people live, what they eat, who their friends are, what they do with their time, and what self-management strategies they use to maintain their health. Poverty determines attitudes towards health, exposures to health threats, risk behaviors, and the response of health providers. Poverty also governs ease of access to medical care.

Results of Substance Abuse

Substance abuse in this population is comprehensively dealt with in a companion article in this series. It is mentioned here in the context of facilitating exploitation and victimization of individuals with SMI. This can lead not only to STDs as described above but also to physical trauma and its many sequelae.

An annual prevalence rate of 25% was found in Chicago for very serious victimization (robbery, rape, sexual assault, murder) among SMI patients (Oram et al. 2016). Women are at higher risk than men of alcohol-induced injury, liver disease, cardiomyopathy, myopathy, brain damages, and mortality. Women also experience more side effects from other substances of abuse, such as heroin, marijuana, and cocaine, and they are more vulnerable than men to the side effects induced by the medications used to treat substance abuse (Mendrek and Fattore 2017).

Results of Negative Symptoms, Cognitive Deterioration, and Depression

Patients with psychotic illnesses suffer from negative symptoms and also from depression, which makes them neglect not only personal care routines but also routine doctor visits, flu shots, and other preventive health measures such as cancer screening.

For instance, the mortality rate from breast cancer is unduly high in women with schizophrenia partly because they do not take advantage of breast-screening opportunities so that their cancers progress to late stages before they are diagnosed (Seeman 2017). The barriers to cancer screening in the schizophrenia population are multiple, the first obstacle being the apathy and lack of motivation characteristic of schizophrenia patients. Furthermore, mental healthcare providers tend to be unaware of breast-screening guidelines. In addition, many patients harbor wrong beliefs and concerns about the pain and risks of cancer screening.

Practical obstacles in this population are lack of insurance, lack of a regular primary care physician, transportation problems, and lack of timely reminders. Mailed reminders are easily lost because this population changes address frequently. In addition, many patients with schizophrenia sleep during the day and are awake at night. This interferes with their ability to attend appointments. Poor communication between service user and health provider and a relative absence of collaboration in the tasks of healthcare contribute to the lack of follow-through on health recommendations.

Result of Smoking

More men than women are smokers. While cigarette smoking is usually held responsible for lung problems, a study of over 5000 SMI patients found that the use of antipsychotic drugs was associated with a 1.66-fold increase in the risk of acute respiratory failure within the first 14 days of starting drug treatment. This demonstrates that the cause of most diseases is multi-determined, usually the result of an interaction among genetic predisposition, behavior, and treatment variables (Wang et al. 2017).

Chronic obstructive pulmonary disease (COPD) includes end stages of lung diseases such as emphysema, bronchitis, asthma, and bronchiectasis. In a recent study from the United Kingdom, COPD was found to be the third most chronic disease found in patients with SMI (after hypertension and hyperlipidemia) (Dornquast et al. 2017).

For unknown reasons, the risk of tobacco-induced lung disease and tobacco-induced coronary heart disease is higher for women than for men.

Result of Homelessness, Poor Diet, and Lack of Social Supports

The homelessness that can result from SMI leads to accidental injury, musculoskeletal problems, malnutrition, skin aging from sun exposure, infectious disease, dental problems, chronic lung disease, and victimization (Decker et al. 2010).

People with SMI living on the street or in transient housing are not likely to spontaneously report physical symptoms to doctors. When alienated from family, they are unlikely to report symptoms to anyone. For instance, a study from Britain found that, on the basis of medical record documentation, psychiatrists were relatively unaware of their patients' physical comorbidities (Dornquast et al. 2017).

Result of Stigmatizing Attitudes on the Part of Care Providers

A danger for persons with SMI is that, instead of investigating complaints, healthcare providers may attribute them to psychosis and may, therefore, be less likely than they would otherwise be to refer patients for tests or for specialized assessment. This is commonly referred to as "diagnostic overshadowing." Other stigmatizing attitudes on the part of healthcare professionals are evidenced by comparably less time spent in the office with psychosis patients and less frequent follow-up care. Many healthcare professionals share the public's fear of the potential dangerousness of individuals with SMI. Because of behavior and hygiene, these patients are often not welcome in the waiting room. Communication with patients with SMI may be difficult; patients may not willingly disclose health problems because of mistrust of the medical profession; they may have a higher pain threshold than the general population; they may not follow through on appointments; because of cognitive problems, they may not understand instructions, may not fill prescriptions, and may not adhere to a prescribed treatment regimen.

In other words, the substandard treatment often provided to patients with psychosis by healthcare professionals is not all attributable to stigma but, rather, to a combination of factors. Patients suffer from cognitive deficits that make it difficult to accurately interpret the significance of medical symptoms, they often lack the motivation to seek medical care, and they are often fearful and suspicious of medical intervention.

Concern regarding the potential violence of individuals with schizophrenia may also negatively influence medical care in that physicians and other health personnel prefer to avoid them.

It has been reported that three quarters of all patients with psychotic disorders have experienced discrimination, especially those whose symptoms are severe, those who suffer from comorbid substance abuse, or those who are homeless or have a history of criminal behavior. The yearly prevalence of victimization among psychiatric patients varies from 16% to 92% depending on the definition used (Khalifeh et al. 2015).

In the general population, men are at higher risk of physical victimization, while women are at increased risk of domestic and sexual violence. In the SMI population, women are at greater risk than men for all forms of victimization.

Prevention

While many comorbidities identified above cannot be prevented, some can. Antipsychotic-induced side effects can be reduced by keeping doses low and avoiding polypharmacy wherever possible. The persistence of low-intensity psychotic symptoms without the adverse effects of medication is probably a better alternative than a more complete remission with illness-inducing side effects. The analogy is chronic pain, which is extremely distressing and which people do everything to avoid, including taking analgesics to which they can become addicted. The disability that ensues is not so much due to the pain but rather to attempts at eradication rather than at accommodation (Goubert and Trompetter 2017). The same can be said for chronic psychosis; a good life is possible despite the continuation of low-level psychotic symptoms. In most parts of the world, however, neglect and undertreatment of symptoms is, unfortunately, a more common occurrence in psychotic patients than overtreatment. More persons with psychosis die as a direct result of their illness than of its treatment.

Comorbidities, whether aggravated by under- or overtreatment, can be screened for. Caught at early stages, they can be addressed in a timely fashion and prevented from spreading. This includes screening for breast, cervical, prostate, and colon cancer and also for osteoporosis. Other preventive measures are annual influenza and other (pneumonia, shingles) vaccinations. Cardiometabolic parameters can also be periodically checked, as per established guidelines (Green et al. 2018).

There are three sources of barriers to prevention. There are patient barriers: severe symptoms, cognitive deficits, communication constraints, erroneous beliefs, knowledge gaps, and financial and logistic problems. There are also clinician barriers (lack of time, overshadowing, bias against mentally ill patients, underestimation or overestimation of patients' abilities to follow through on recommendations) and organizational barriers (professional silos, lack of communication across silos, problems with insurance coverage) (Yarborough et al. 2018). All three sources of barriers need to be kept in mind.

Treatment Concerns

The likelihood of recovery from comorbid illness depends on the severity of the illness and the number of simultaneous illnesses but also on the timeliness and quality of treatment. Many reports attest to the fact that medical illnesses in individuals with psychotic illness are diagnosed later in their course than they would be in the absence of psychosis. SMI patients reportedly wait longer for treatment to start and suffer more complications from treatment. Patients with SMI undergo fewer cardiac procedures after a myocardial infarct than does the rest of the population. Treatment for diabetes and for myocardial infarction in patients with schizophrenia has been judged substandard (Attar et al. 2017; Barker et al. 2018). This has been attributed to an absence of advocates to ensure that patients receive the services to which they are entitled.

Again, there are patient factors that are partly responsible. SMI patients are more likely than others to refuse or delay treatment, to miss their appointments, or to drop out of treatment altogether. It is also true, however, that some treatments are too expensive for people on disability pensions and that clinical trials of new treatments are not made available to patients with SMI.

It has been shown that physicians spend relatively little time with their severely mentally ill patients. They do not invite their SMI patients to share in decision-making probably because they underestimate their decisional competence and their ability to adhere to treatment protocols. Patients with SMI report significant problems communicating with their doctors. The blame for the low levels of primary care utilization and the relatively poor medical treatment of SMI patients is a shared one. As mentioned, the deficiencies are attributable to barriers erected by patients, providers, and health systems (Moore et al. 2015).

Eskelinen et al. (2017) found, on direct examination of SMI patients, that a large variety of their healthcare needs were being neglected. These investigators noted three main areas of inadequacy: appropriate housing (a basic necessity for good health), access to wholesome nutrition (another necessity), and the provision of sufficient symptom relief (the absence of which may account for the high levels of substance abuse).

Role of Psychiatry

Ehrlich et al. (2018) recommend ways of integrating the medical and psychiatric systems. They promote the idea of psychiatrists playing a pivotal role in detecting medical problems in their patients, managing these problems whenever possible, and maintaining communication with other involved specialists as necessary. They suggest inviting a primary care team to work within mental health settings. They recommend an overarching primary care/mental health organization with a common source of funding. They are in favor of specific guidelines ensuring cooperation and defining goals and standards, with periodic audits to ensure that the integration of medicine and mental health is achieved and sustained. They believe that more research is needed into the pathophysiology of coexisting conditions. They outline what is required: better screening, diagnosis, and treatment and improved communication and collaboration. In their opinion, roles need to be clarified, and comprehensive, continuous care better organized. They suggest that psychiatrists and the other mental health professionals need better training in teamwork and interdisciplinary care and that their performance needs to be better monitored. Ungar et al. (2013) provide an instructive, successful example of collaborative and shared care.

Concluding Remarks

During World War II, between 1940 and 1944, at least 40,000 psychiatric patients died in psychiatric institutions in France. This tragedy has been called "extermination douce" (gentle extermination), because it was not deliberate. Patients died because crops from local farms failed and because of a national wartime food shortage. They died because of meager rations, unequal distribution of food, overcrowding and infection, and unwillingness or inability of families to take patients home or to visit or send care packages. The deaths were not ordered by the German occupying force (as they were within Germany itself), and the Vichy government, despite its other eugenic policies, did not intentionally reduce food rations in psychiatric hospitals. Mental health professionals saw what was happening, spoke about it at conferences, and wrote academic articles about it. The profound effects of starvation were considered scientifically interesting, and psychiatric careers were advanced by describing these effects, but while mortality rates soared, very few mental health professionals (though there were some) did anything about it (Bailly-Salin 2006). The analogy can be made with what is happening today to severely ill psychiatric patients. They are dying at shockingly high rates from neglect and substandard treatment but also from comorbidity and adverse effects of medications.

Cross-References

▶ Depression, Anxiety, and Physical Morbidity in Women
▶ Menopause and Mental Health
▶ Overview of Women and Addiction
▶ Severe Mental Illness and Reproductive Health

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Depression, Anxiety, and Physical Morbidity in Women

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Contents

Abstract

A higher prevalence of anxiety and depressive disorders in relation to chronic medical illnesses has been observed and poses unique challenges in management of these conditions. Depression is the most common disorder, accounting for approximately 50% of psychopathology in the medically ill, with the remainder made up of various anxiety disorders and mixed sub-syndromal symptoms of anxiety and depression. Many underlying etiologies have been suggested for the same, including biological as well as behavioral factors that influence the course and prognosis of either of the conditions. The coexistence of anxiety and depressive disorders with a medical condition may have

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_21

divergent clinical implications on the treatment-seeking patterns, identification, course, management strategies, and thus, the outcome of the illnesses. In this chapter, we discuss the physical morbidities of cerebrovascular disease, diabetes mellitus, thyroid disorders, cancer, and coronary artery disease co-occurring with anxiety and depressive disorders and the reciprocal relationship between these comorbidities, particularly in women. We also briefly discuss regarding the nosological issues and various pharmacological and psychological methods utilized in treatment of these conditions, with interactions pertaining to presence of comorbidities.

Keywords
Depression · Anxiety · Diabetes · Cancer · Coronary artery disease · Stroke

Introduction

This chapter deals with anxiety and depressive disorders that occur in relation to physical health morbidity (noncommunicable diseases in particular) and the implications of the same in this context. We also discuss the variety of ways in which specific psychological or behavioral factors impact medical illnesses, their management, and vice versa.

In evaluating patients with mental symptoms, one must review the history, physical examination, and the laboratory tests to rule out the presence of a general medical condition that could possibly explain the mental symptoms in question, while looking for temporal correlations and keeping in mind well-documented associations between mental illnesses and certain physical conditions. Similarly, in the course of treating chronic medical conditions, the contribution of psychological factors must be borne in mind.

Chronic medical conditions are frequently associated with a relatively higher prevalence of anxiety and depressive disorders. A depressive disorder secondary to a general medical condition is characterized by pervasive low mood or loss of interest and by evidence of a general medical condition capable of causing such symptoms. Pathological anxiety secondary to a general medical condition may occur in the form of well-circumscribed and transient panic attacks or in a generalized, more chronic form.

Many underlying causes may take a final common pathway of producing such a condition and may have divergent implications for prognosis and management. In some cases, it appears to result from specific biologic factors associated with chronic medical conditions. In other cases, it appears to be related to certain behavioral mechanisms, such as withdrawal from rewarding activities due to the limitations on activity imposed by the physical illness (Prince et al. 1998).

The coexistence of mood and anxiety disorders with a medical condition will have important clinical implications, which will be discussed in the following parts of the chapter.

Epidemiology and Comorbidity

Prevalence

There is a higher prevalence of major depressive disorder in medically ill subjects. It is also true that medical illness is a risk factor for depression.

Depression is the second most common chronic condition treated in general medical practice (Whooley and Simon 2000), making the prevalence and burden of depression in the medically ill a substantial problem. Evidence suggests that 1 in 10 primary care patients may experience depressive disorder at some point, but many of these cases are unidentified or improperly treated (Whooley and Simon 2000).

Depression has been better studied in the medically ill than any other psychiatric syndrome. Major depressive disorder has been reported in 15% of patients with coronary heart disease, in 3–31% of subjects with cancer, and odds at two times in patients those suffering from diabetes (Colquhoun et al. 2013; Krebber et al. 2014; Roy and Lloyd 2012). Slow progressing illnesses causing higher severity of incapability show a high percentage of comorbid depression.

Patients in general medical practice who suffer from a depressive or anxiety disorder report an average of two to three concurrent chronic medical illnesses, a rate that is more than double that reported by patients who do not suffer from depression or anxiety (Young et al. 2001). Conversely, patients with diagnosed general medical illnesses, especially chronic conditions, are at an increased risk for developing depression and/or anxiety disorders.

Findings from the STAR∗D trial showed that a comorbid medical condition was present in 52.8% of the 1500 subjects with major depressive disorder (Yates et al. 2004). This comorbidity was frequently found to be associated with older age, lower income, unemployment, limited education, longer duration of index depressive episode, and an absence of self-reported family history of depression (Yates et al. 2004).

Course and Reciprocal Relationship

It was previously believed that the psychological factors were preeminent in the causation of the medical disorders, and the conditions were labeled psychosomatic. A more modern approach has been toward recognizing many different factors in the biological, psychological, and social realms potentially affecting most medical illnesses.

In a significant number of patients, there are effects in the other direction as well, that is, the medical illness altering the psychological functioning. Furthermore, both mind and body interact in various ways with social and environmental factors, affecting both the incidence and outcome of medical illness.

The presence of comorbidity increases the chronicity of each disorder, prolongs the course of recovery, and increases the possibility of a recurrence in the patient post recovery. One of the most important clinical reasons to screen for comorbidity is the association of unrecognized depression/anxiety with an increased rate of hospitalization and suicide attempts.

The Medical Outcomes Study (Wells et al. 1989) showed that patients, who have a diagnosis of major depressive disorder, function more poorly as opposed to other primary care patients having greater limitations in physical activities and social and occupational participation and, therefore, suffer an increased burden of illness and increased rates of disability. Compared with those without depression, medical outpatients with a depressive disorder experience poorer quality of life (Spitzer et al. 1995) and have almost twice as many days of restricted activity or missed work because of illness (Ormel et al. 1994). Similarly, it is also associated with a 50–100% increase in health service utilization and expenses (Simon et al. 1995).

One explanation for this finding can be the fact that psychological symptoms may affect one's ability to cope effectively with the medical illness, and the behavioral symptoms may interfere with treatment adherence as well as self-care and, thus, further reduce physical functioning.

A meta-analysis found that patients with a depression diagnosis are three times more likely to be nonadherent to medical treatment when compared with those without depression (DiMatteo et al. 2000). The effects may be mediated at a pathophysiological level or through behavioral factors. It, therefore, negatively affects outcome in medical illness and consequently increases healthcare expenditure. Anxiety is also a frequent cause of avoidance or delay in seeking treatment (Noyes et al. 2000).

Many biological factors have been suggested in this association between medical illnesses and depressive and anxiety disorders. One of the postulated hypotheses is the relationship of stress and depression involving a range of immunological effects, hypothalamo-pituitary-adrenal axis dysfunction, and greater platelet activation via serotonin pathways (Reiche et al. 2004). It is also noted to be associated with disruptions in homeostasis, including sleep architecture, other circadian rhythms, and endocrine secretion and feedback mechanisms (Reiche et al. 2004). Some studies have suggested that depressed patients have shorter telomeres indicating more rapid cellular aging in such subjects (Hartmann et al. 2010; Simon et al. 2006).

Gender Differences

Age and gender affect both the prevalence and the prognosis of depression. It has been found that women are twice as likely as men to be affected (Kessler et al. 2003). Female gender is also positively correlated with suicidality, predominantly suicide attempts. Completed suicide, however, seems to be equally distributed between genders in most countries.

The STAR∗D study has suggested that women with major depressive disorder showed higher rates of comorbid anxiety disorder, bulimia, and somatization disorder, while men were more often diagnosed with comorbid substance use disorder (Marcus et al. 2005).

Prevalence rates of depression are higher for women cardiac patients when compared to men and particularly young women may be at high risk for depression (Lichtman et al. 2008). Depression prevalence rates are higher with certain cancers, for example, breast cancer (Sotelo et al. 2014). The prevalence of comorbid depression is significantly higher in diabetic women (28%) when compared to diabetic men (18%) (Anderson et al. 2001). A systematic review notes the rates of post stroke depression to be slightly higher in women compared to men (Poynter et al. 2009). Greater frequency of depression following left hemisphere stroke has been noted more often in women than men (Paradiso and Robinson 1998).

Physical Morbidities

Cerebrovascular Disease (Stroke)

Depressive disorder is the most common mood disorder associated with cerebrovascular disease. Post stroke patients when compared with age-matched controls are most often depressed and have been found to have higher incidence of depression when compared to patients of traumatic brain injuries, though the levels of disability in terms of activities of daily living or cognitive functions may be similar (Folstein et al. 1977; Robinson and Szetela 1981).

Patients with depression associated with stroke, when compared with primary depression, report more physical symptoms and have fewer melancholic symptoms (Beblo and Driessen 2002). Fatigue and sleep disturbances are seen more commonly in depressed stroke patients than stroke patients who are not depressed (Williams 2005).

The overall pooled estimate of anxiety disorders post stroke as reported in a meta-analysis was noted to be 18% with clinical interviews and 25% when rating scales were used for assessment (Campbell Burton et al. 2013). Majority of patients with post stroke anxiety disorder also have concurrent depression. Phobic disorders and generalized anxiety disorders are the most common type of anxiety disorders reported.

Although the exact etiology of post stroke depression remains unknown, a number of studies have found that the location of the brain injury may have an important role. Left hemispheric lesions, particularly those located anteriorly, are more likely to be associated with post stroke depression (Robinson and Price 1982; Robinson et al. 1984). There is an inverse correlation noted between the severity of depression and the distance of the anterior border of the infarct from the frontal pole in the left hemisphere and a positive correlation in the right hemisphere. It was also found that gender played a significant part in predisposition to post stroke depression with the frequency being 25% in women compared to 18% in men. In their systematic review, Hackett and Anderson (2005) reported that the best predictor of depression was stroke severity, which included the extent of physical disability and cognitive dysfunction after stroke. It has also been seen that biological factors are especially important in the early weeks following stroke (Nys et al. 2005), although with the passage of time, social and psychological factors tend to become increasingly important in determining the mood state. Post stroke depression is strongly associated with the premorbid personality; neuroticism, for instance, has been found to be associated with depression at a higher rate than other personality types (Aben et al. 2006).

Other reasons of depression occurring after stroke may be related to the sudden onset of disability and its associated emotional changes or a preexisting tendency to depression or history of depression.

Identification of depression in patients with stroke needs to be emphasized as it is associated with an increased prevalence of suicidal thoughts, in perhaps 10% of patients (Williams 2005) and almost doubles the risk of suicide in such patients (Teasdale and Engberg 2001). The SMR due to suicide in women was noted to be 1.78 compared to 1.88 in men. It may also lead to lack of cooperation or poor motivation for rehabilitation and is generally associated with a poorer outcome and greater utilization of healthcare services (Williams 2005).

Reciprocally, depression tends to increase the risk of having a stroke in the first place (Williams 2005).

Diabetes Mellitus

Recent studies have suggested depression to be an important independent risk factor for the development of type 2 diabetes. Certain risk factors in individuals with psychiatric illnesses often responsible for the development of diabetes include physical inactivity and obesity. However, depression predisposes to diabetes, even after controlling for potential confounders such as gender, age, race, socioeconomic status, educational qualification, health service trends, other psychiatric disorders, and body weight (Musselman et al. 2003). Depression is more strongly associated (60% increased risk) with the risk of depression when compared to only modest increased risk of depression associated with Type 2 diabetes (Mezuk et al. 2008).

Eaton et al. (1996) in their follow-up study of 3481 participants in the Epidemiological Catchment Area study reported that subjects who had the diagnosis of major depressive disorder were at 2.2 times higher risk of developing type 2 diabetes in the following 13 years.

There are many important clinical implications of this comorbidity, such as increased association with poorer adherence to a diabetic diet as well as with oral hypoglycemic medication and, thus, a greater functional impairment (Ciechanowski et al. 2000).

Poorer glycemic control in diabetic patients is linked to more perceived stress (Garay-Sevilla et al. 2000). Depression in diabetes is associated with an elevated risk of complications (de Groot et al. 2001). Glycemic control improves modestly with antidepressants; evidence for psychological interventions is not conclusive (Baumeister et al. 2014). In patients with preexisting diabetes, depression serves as an independent risk factor predisposing patients to heart disease (Forrest et al. 2000).

It is uncertain whether direct metabolic consequences of depression are responsible for the increased prevalence of diabetes in depressed subjects or whether these result from the secondary effects due to poor medication and dietary compliance.

Patients with diabetes have a higher prevalence of generalized anxiety disorder, panic disorder, and obsessive compulsive disorder (Santos et al. 2014). Lifetime prevalence of any depressive and/or anxiety disorder is noted to be higher in women with diabetes when compared to women without diabetes (Hasan et al. 2015). Both prevalence and annual incidence rates for diabetes are higher in patients with anxiety disorders compared to the general population (Chien and Lin 2016).

Thyroid Disorders

The prevalence of thyroid disease is known to be much higher in females than males and is found to increase with age, especially subclinical hypothyroidism. Similarly, depression and most anxiety disorders show a female preponderance. Thyroid disorders in psychiatric practice have been notorious for leading to improper or delayed diagnosis.

Depressive affect has been frequently reported in association with hypothyroidism (Whybrow et al. 1969). Depression was found to be the most common affective prodrome of medical disorders including in hypothyroidism (Cosci et al. 2015). In hypothyroidism, depressive symptoms are only slightly less common than cognitive symptoms (Whybrow and Brauer 2005). Low mood, fatigue, anhedonia, reduced concentration, and hypersomnolence are the most commonly described features of the depression in hypothyroidism (Whybrow and Brauer 2005). These features are found to respond well to correction of the hypothyroid state (Whybrow and Brauer 2005).

Subclinical hypothyroidism is a risk factor for depression and cognitive impairment (Davis et al. 2003). Subclinical hypothyroidism is most prevalent in elderly particularly women (Davis et al. 2003).

Many of the metabolic and behavioral changes seen in hypothyroidism are also found in depression, suggesting the role of changes in the pituitary–thyroid system in the modulation of mood. The most common abnormality in thyroid function tests among patients with depressive disorder is the elevation in serum thyroxine concentration, which falls with response to treatment (Whybrow and Bauer 2005). It is also seen that serum TSH response to thyrotropin-releasing hormone is blunted in 25% of depressed patients, with an associated loss of the usual nocturnal surge of TSH (Whybrow and Bauer 2005). The causation of depression in patients of hypothyroidism appears to be related to the role of thyroxine in serotonergic transmission, such that reduced thyroid input reduces serotonergic tone and lowers the threshold of development of depression. Conversely, thyroid replacement restores central serotonin activity in correlating with improvement in depressive symptoms.

Symptoms suggestive of anxiety disorder are described in up to 30% of patients and are strongly correlated with depressive symptoms.

Psychological disturbance of some degree is common with hyperthyroidism, with patients frequently complaining of nervousness and fatigue, and appearing restless, overactive, and irritable, sometimes reporting of hyperacuity of perception and overreaction to noise.

Depressive symptoms are commonly found psychiatric features in hyperthyroidism, occurring in up to 30% of patients, and frequently precede the onset of the physical features. Depression seen in hyperthyroidism is most often characterized by symptoms of agitation rather than retardation (Whybrow and Bauer 2005). Other features include low mood as well as biological function disturbances such as insomnia, reduced libido, and weight loss. The intensity of depressive symptoms has not been correlated to the severity of hyperthyroidism as measured by thyrotoxic features or the extent of biochemical abnormalities. In the elderly, an “apathetic” hyperthyroidism with anergia and mental slowing has been seen, presenting without the characteristic eye signs of hyperthyroidism (Wagle et al. 1998).

Generalized anxiety has been reported in 80%, and an association with panic disorder and “organic anxiety syndrome” has been described (Kathol and Delahunt 1986; Jadresic 1990).

Increased attention is being directed toward the role of stress and emotional disturbance in precipitating hyperthyroidism and on the psychological constitution of those who develop the disorder. In the study by Matos-Santos et al. (2001), it was shown that significantly more stressful life events occurred with significantly greater impact in the 12 months preceding onset of symptoms in a Graves’ disease group than a control group.

Cancer

Cancer remains a life-threatening illness linked with fears about incapacity, disfigurement, and death. Many individuals diagnosed with cancer experience at least transient psychological distress. This recognition, however, can lead to a dismissal of depression as a normal response to cancer and missed opportunities to identify a highly impairing, but treatable, psychiatric disorder when depression does occur.

Depression is widely known to be a highly prevalent condition among patient suffering from cancer but the estimates vary greatly. A study by Burgess and colleagues (Burgess et al. 2005) reported that 48% of patients with breast cancer experienced clinical depression or anxiety in the first year after diagnosis. However, they also noted that a year after diagnosis, the prevalence of clinically significant depression and anxiety was only 15%, and thereafter the risk of anxiety and depression was no greater than in the general population.

The levels of depression have been found to be likely to vary according to the duration since diagnosis of cancer was made, and this may be particularly true in cases of subclinical illness.

A meta-analysis of 58 studies comparing levels of anxiety and depression in cancer patients with the general population showed higher levels of depression in cancer patients than in the general population (van’t Spijker et al. 1997). Zabora et al. studied 5000 cancer patients, of whom 58% had received a diagnosis within the past 90 days and found the highest prevalence of distress in those with lung cancer, with 43.4% of the sample reporting high levels of distress (Zabora et al. 2001). Similarly, high levels of distress were experienced by patients with cancers of brain, liver, pancreas, and head and neck, whereas significantly lower levels of distress were experienced in patients with gynecological, breast, colon, and prostate cancers. This may be because of the better prognosis for the latter cancer locations. Stage of disease at diagnosis is another factor that affects psychological state of the patients. In this respect, the more advanced disease is associated with increased psychological distress.

Some cancer treatments are also associated with increased levels of depression. Immunotherapeutic agents, such as interferon alfa and interleukin, used to treat some cancers (e.g., kidney, melanoma) induce depressed mood as a direct side effect (Paterson et al. 2005). More widespread treatments such as chemotherapy, radiotherapy, and surgery commonly cause symptoms of illness, including fatigue, pain, and sickness. These symptoms experienced at chronic levels are debilitating and are connected to psychological distress (Stommel et al. 2004).

In addition to the fact that depression may add to the already existing disease burden, there is considerable speculation about depression being an important factor in the causality of cancer and the disease progression and survival rate (Spiegel and Giese-Davis 2003).

A large epidemiological study of more than 2000 employees of Western Electric had shown that depressive symptoms were associated with a higher frequency of cancer and twice as high a risk for death from cancer (Shekelle et al. 1981). Later epidemiological studies, however, have generally not reported any such associations (Gallo et al. 2000). Besides survival, depression in cancer patients also results in poorer pain control, poorer compliance, and less desire for life-sustaining therapy.

Higher rates of anxiety and depression are seen in women, and this may be two to three times higher than that seen for men in some cancers (Linden et al. 2012).

Coronary Artery Disease

The presence of depression in a patient with heart disease has a significant impact on the morbidity and mortality resulting from the disease, which cannot be accounted for by other factors like severity of cardiac disease (Carney and Freedland 2003). Major depressive disorder was the single best predictor of myocardial infarction, angioplasty, and death during the 12 months following cardiac catheterization (Carney and Freedland 2003). Frasure-Smith et al. (1993) reported a fourfold increase in mortality 6 months after myocardial infarction in patients with major depressive disorder when compared to subjects without depression. In a large epidemiologic study, major depression was seen to triple the relative risk of cardiac mortality in those without heart disease, and quadruple the risk in those who had heart disease (Penninx et al. 2001).

Depression precedes cardiovascular disease by 10 years and increased the risk of cardiovascular morbidity by 1.5–2.0 times after controlling for other risk factors (Glassman and Shapiro 1998). On the other hand, there is an increased incidence of depressive disorder in subjects with coronary heart disease.

INTERHEART is a multicenter case–control study involving more than 11,000 myocardial infarction patients and matched controls from 52 countries. Its findings showed that prevalence of depressive symptoms over the 12 months before admission was consistently higher in cases than controls, and the population attributable risk was 9% (Rosengren et al. 2004).

According to the National Health Examination Follow-up study (Anda et al. 1993), 11.1% of the cohort of 2832 men and women aged 45–77 years had depressed affect at baseline, as assessed with the General Well-Being Schedule. Depressed affect was frequently associated with female gender, African American ethnicity, low education, unmarried status, smoking, and physical inactivity. Over the follow-up period of more than 12 years, 6.7% died from heart disease, with more consistent associations among individuals with higher severity of depression.

Longitudinal observational studies cannot by themselves establish causation, and it is conceivable that the association between depression and future heart disease is due to processes underlying both conditions or to residual confounding factors. In patients with more advanced coronary atherosclerosis, it is possible that vascular inflammatory processes result in both depressed mood and accelerated disease progression (Steptoe and Whitehead 2005). Psychosocial factors are thought to influence physical disease states through two broad sets of pathways: behavioral or lifestyle processes and more direct biological processes. A number of behavioral factors contribute to coronary heart disease, including cigarette smoking, certain patterns of alcohol consumption, eating behavior, and physical inactivity.

The literature regarding the role of biological factors in this association is vast. Endothelial dysfunction and the role of pro-inflammatory cytokines have been postulated. PRIME study found an association between baseline CRP, IL-6 and soluble intercellular adhesion molecule 1 (ICAM-1) and future CHD, and between these inflammatory markers and depressive mood (Empana et al. 2005).

The other processes that have been implicated in the association between CHD and depression concern abnormality of hemostasis, platelet function, and autonomic dysregulation.

Challenges in the Management of Comorbidity

Despite these high rates of comorbidity, the presence of a primary general medical diagnosis markedly reduces the rate of identification of depressive and anxiety disorders.

Only one in every five patients who present with such comorbidity receives appropriate treatment for their psychiatric illness (Spitzer et al. 1999).

Further complicating the detection is the concept of depression as a reactive condition and, therefore, viewed as less severe and more transient in nature. Even upon recognition, the treatment to depression may be deferred considering this to be a normal response to the situation. The patients may also have certain thoughts or assumptions about their condition that may cause them to minimize the symptoms or delay seeking treatment for them. Establishing a timeframe for the onset of psychological symptoms in relation to the medical illness may help distinguish secondary from primary disorder.

Emotional responses can be particularly intense during the course of a medical illness. Certain identified points in the course increasing vulnerability to distress are transition points in illness, such as diagnosis, initiation or change of treatment, relapse or recurrence, worsened prognosis, or a passing into a chronic or terminal phase.

The range of emotional responses may vary on a continuum, starting from demoralization and hopelessness to adjustment disorder, culminating into depressive disorders, differing in terms of intensity, duration, and burden of symptoms.

The distinction of “normal” from distressing or maladaptive emotional reactions is often as much a cultural and existential distinction as it is a clinical one. In such a situation, exploring the person’s past reactions in times of distress and their current expectations with regard to symptoms and recovery may be useful.

An important contributing factor in development of these emotional states in medically ill patients can be poorly managed physical symptoms. In such a case, careful questioning and clarification regarding the symptoms and interventions to remove physical factors may show adequate improvement in the mood of the patient.

Another challenge in the management of comorbidity is the overlap of symptoms between depressive or anxiety disorders and certain medical illnesses, which further complicates identification and treatment.

Symptoms such as cognitive dulling, pain out of proportion to physical findings, fatigue, weight loss, and sleep disruption are shared between depression and chronic medical illnesses and should vary a physician of the possibility of masked presentation of depression. Another close mimic is substance intoxication, which may exhibit dramatic emotional posturing and suicidal ideations. Mindful history collection and examination is, therefore, prudent in such situations.

Psychopharmacology and Drug Interactions, Duration of Treatment

Antidepressants and benzodiazepines are typically used in the treatment of depression and anxiety disorders in general. The choice of pharmacotherapeutic agent is guided by the side effect profile, comparative effectiveness, and possibility of drug interactions. SSRIs as a class are the preferred first-line agents when compared to the tricyclic antidepressants because of the relative safety of SSRIs for both conditions. Pharmacotherapy is particularly more effective in severe depression.

In the case of comorbidities and multi-morbidities, the likelihood of drug interactions remains high and the choice of antidepressants is dependent on the propensity to induce or inhibit cytochrome P450 enzymes. Drugs such as escitalopram, citalopram, and sertraline are associated with fewer drug-drug interactions and may be more preferentially used. Drugs such as fluoxetine, bupropion, and paroxetine which inhibit the CYP2D6 isoenzyme may significantly reduce the active metabolite of tamoxifen used in the treatment of breast carcinoma.

Tricyclic antidepressants are particularly notorious to cause cardiovascular adverse effects – hypotension, arrhythmogenic and anticholinergic effects which may preclude their use in the context of conditions such as coronary artery disease, cancer, and diabetes mellitus. Antidepressants in general and TCAs in particular (lesser with tetracyclics, least with SSRIs) have a propensity to lengthen the cardiac myocyte action potential. The TCAs, in particular, amitriptyline and its metabolite nortriptyline, may confer benefit in conditions where pain is also a symptom. Some antidepressants (e.g., Mirtazapine) may increase the risk of diabetes either directly or indirectly by inducing weight gain. A small to moderate positive effect on glycemic control is shown for SSRIs. There is a suggestion that the cardiovascular outcome may be better in patients with acute coronary syndromes when they are treated with SSRIs. In the SADHART study (O'Connor et al. 2010), use of sertraline was associated with a trend toward a lower risk of myocardial infarction, heart failure, and death. Two large multicenter trials, the ENRICHD (Berkman et al. 2003) and MIND-IT (Tulner et al. 2011), have reported on the treatment of depression in CAD. ENRICHD demonstrated that at 6 months the mortality and recurrence of cardiac events (MI) were significantly lesser in the group that received SSRIs compared to those who were not treated. The MIND-IT study has reported the efficacy of Mirtazapine, and also interestingly those who responded to antidepressant therapy also had fewer cardiac recurrences compared to nonresponders.

Concomitant use of SSRIs with antiplatelet agents, in particular dual (aspirin + clopidogrel) or triple therapy (warfarin in addition), may increase the risk of hemorrhages (Labos et al. 2011). Paroxetine, sertraline, fluoxetine, and clomipramine, drugs with a particularly high affinity for the serotonin receptor, may be avoided when SSRIs are chosen for treatment, and there is a risk of hemorrhage. In the SADHART-CHF study (O'Connor et al. 2010), there was no benefit for sertraline over placebo either in the depression or for cardiovascular outcomes.

Treatment with SSRIs is associated with an increased risk of falls and fractures in the elderly. This may due to poor physical function in women as noted in a Swedish study and may not be actually associated with bone mineral density changes (Larsson et al. 2018). Reductions in endogenous estrogens with chemotherapy, GnRH analogues, or aromatase inhibitors continuously increase fracture risk in women with breast carcinoma, and co-prescription of SSRIs may further increase the risk (Hadji 2015). Hot flashes because of chemotherapy may be additionally benefited with use of SSRIs and SNRIs. Prolactin levels are known to be increased with SSRIs and TCA use, and there have been concerns raised that increased circulating prolactin may increase the risk of breast carcinoma in post-menopausal women. Women may be at a higher risk for QT prolongation with the use of SSRIs, particularly citalopram and escitalopram (Ojero-Senard et al. 2017). Though there is limited evidence for the use of Bupropion in CAD patients with depression, it may be used because of its favorable sexual dysfunction profile and utility in nicotine addiction, often comorbid with CAD. In COPD patients it has been hypothesized that antidepressants may decrease autonomic activity and detach excessive distress associated with COPD. Small clinical improvement in anxiety symptoms in COPD patients favoring SSRIs over placebo has been reported in a Cochrane systematic review (Usmani et al. 2011). Due to the suboptimal quality of data, no conclusions could be drawn by the authors on the effect on exercise tolerance, FEV1, and dyspnea.

Benzodiazepines, most commonly lorazepam, clonazepam, and alprazolam, are often used in the initial treatment of anxiety disorders but carry the risk of chronic use and addiction. Benzodiazepines provide immediate relief and need to be discontinued carefully at the earliest. They may worsen fatigue, concentration, cause falls, and cognitive deficits particularly in the elderly. In patients with COPD, there is the risk of respiratory depression particularly with the longer acting benzodiazepines. Additional effects of lorazepam particularly the antiemetic action may be useful particularly in patients on chemotherapy infusions besides lowering acute anxiety.

While evaluating the scientific evidence, it has to be understood that the general recruitment rates of women in RCTs is far lower when compared to men because of several reasons.

Psychological Methods of Treatment

The goals of psychological interventions in the management of depression and anxiety comorbid with physical illnesses are to improve not only psychological outcomes but also to improve physical health outcomes. As far as psychological outcomes are concerned, the initial focus is on the prevention of suicide, later on the reduction of depressive and anxiety symptoms followed by sustaining remission. The goals may then shift to improving psychosocial functioning, improving vocational productivity, coping with and acceptance of the physical health problem, and gradually improving lifestyle. The improvements in physical health outcomes may be hypothesized as due to the healthier lifestyles adopted because of the behavioral changes facilitated by psychotherapy. Psychological interventions are recommended as first-line treatments when there is depression or anxiety disorder comorbid with chronic physical health problems and is graded mild or moderate as exemplified in the NICE guidelines (2009). Use of antidepressants is associated with the risk of side effects and poor risk to benefit ratio in such situations. Psychological interventions provided commonly include cognitive behavior therapy, interpersonal psychotherapy, psychodynamic psychotherapy, and supportive psychotherapy delivered either in an individual or group format. Nonspecific psychological interventions may include stress management, teaching problem-solving, coping or even simple education, and counselling. The dose recommended, mode of delivery of psychological treatments, and health professional who provides services pose challenges to this mode of intervention when compared to the use of antidepressants. The use of telephone or technology-based interventions is also being used to overcome the resource-intensive nature of face-to-face delivery. Psychological interventions may sometimes be combined with the use of psychotropics. Psychological interventions are often recommended as a part of pulmonary or cardiac rehabilitation programs. Lifestyle interventions that include physical activity, improving diet, social interaction, and cutting down on alcohol and/or smoking may be effective both for depression and chronic conditions like diabetes and CAD. We will illustrate evidence available with the following examples.

Psychological Interventions for Depression in Diabetes

A recent systematic review (Baumeister et al. 2014) has reported that there is significant improvement of depression severity when compared to wait listing or treatment as usual (SMDs ranging from −0·14 to −1·47) with the use of psychological interventions. There is evidence to suggest that the improvements are sustained in the long term also. However, the improvements in the glycemic control seem less conclusive. There are many methodological reasons that the authors have explained for both the findings. The delivery of interventions has varied widely in the studies included in the review. Overall, it seems that the evidence for medical outcomes is less robust.

Psychological Interventions for Depression in the Context of CVD

Psychological interventions have shown a small beneficial effect in the reduction of depression and anxiety severity and remission of depression as reported in a meta-analysis (Whalley et al. 2014). Varying approaches have shown little difference between them. Medical outcomes in the form of reduction of cardiac events or reduction in mortality have not been observed. There is a need to be cautious while interpreting the findings of the meta-analysis because of the wide range of depressive syndromes (dysthymia, adjustment disorder, and minor and major depression) included in the studies.

Psychological Interventions for Anxiety and Depression in COPD

The Global Initiative for Chronic Obstructive Lung Disease (GOLD) treatment guidelines (2011, Vestbo et al. 2013) recommend treatment for psychological comorbidities. Psychological interventions are associated with positive psychological outcomes as reviewed in a systematic review (Smith et al. 2014). Cognitive behavior therapy is also reported to improve quality of life. Nearly three-fourths of the participants in this review were male. The authors have discussed the need to research the most appropriate setting in which the intervention can be provided.

Psychological Interventions for Anxiety and Depression in the Palliative Care Setting

A nationwide physicians survey (in specialist palliative care) from the UK has reported that most physicians acknowledged difficulty in managing anxiety disorders in this context and only a third reported any training in this area (Atkin et al. 2017). While there are recommendations regarding adult cancer patients experiencing psychological distress to be offered specialist psychological support services, there is little to guide in the palliative setting. Most often in patients with shorter prognosis supportive care from the palliative care team, or chaplaincy services, are offered, for those with longer prognosis psychological therapies are offered. Staff shortages and long waiting times are reported as problems for making referrals for psychotherapies. Generally, guidelines have recommended the use of interventions with cognitive behavioral and/or stress management components for moderate to severe anxiety (Traeger et al. 2012). Supportive-expressive approaches to manage existential distress are recommended for those with advanced stages. Generally, there is evidence to suggest that psychological symptoms and somatic symptoms such as pain and quality of life improve with psychological treatments.

Nosological Issues

Depression and anxiety disorders are much less likely to be diagnosed when they present with somatic symptoms. Depression and anxiety often have physical symptoms such as autonomic arousal, fatigue, weight loss or gain, and sexual symptoms which may be mistaken for symptoms of the physical morbidity and vice versa. Physiological changes such as menopause may be associated with depressive and anxiety symptoms, and this may be induced iatrogenically by chemotherapeutic agents in breast cancer.

Screening questions for depression or anxiety are likely to be less specific and may lead to overestimation of depression and will require a formal clinical interview to diagnose or differentially diagnose. Structured Clinical Interview for DSM-IV-TR Axis I Disorders (SCID-I) (First et al. 2002) or the Schedule for Clinical Assessment in Neuropsychiatry (Wing et al. 1990) can be then used for diagnosis of mental disorders.

Drugs used in the treatment of many physical health problems may mimic anxiety or depressive symptoms or be etiologic, for example, beta blockers and depression, sympathomimetics and anxiety. Interferons used in cancer treatment can cause depression. Depressed mood may be seen commonly after any acute event as a reaction to the event (perceived as a threat to one's life), for example, after an acute coronary event, adjustment disorder with depressed mood is the most common form of depression observed. This may be a transient phase and may gradually improve with comprehensive management of the acute medical condition.

Depression that occurs in the context of a medical condition may be classified as organic depressive disorder when there is a known association with the medical condition, a temporal relationship, recovery once the medical condition improves, and in the absence of alternate cause for the mental syndrome (ICD-10; WHO 1992). The more common presentation is an adjustment disorder – brief or prolonged depressive reaction when the medical condition leads to a significant life change or is a stressful life event. Depression that predates the medical condition and is precipitated by the medical condition is diagnosed as recurrent and further graded as mild, moderate, or severe (with or without psychotic symptoms). Similarly, for anxiety, categories of organic anxiety disorder, adjustment disorder with mixed anxiety and depression may be used to diagnose according to the ICD 10 (WHO 1992). The DSM V (American Psychiatric Association 2013) permits to diagnose anxiety disorder or depression due to a medical condition while acknowledging that several medical conditions, or prescribed medications, can be associated with depression-like/anxiety disorder–like phenomena. Both classificatory systems allow the use of a category of dysthymia for chronic (>2 years) low grade depression.

Outcome and Clinical Implications

The outcome is generally worse when both the mental health condition (depression/anxiety) and chronic physical condition co-occur. Depression/anxiety disorder and chronic physical conditions are independent risk factors for suicide; the effect of physical illness on the risk for suicide is less strong. Suicide risk is therefore higher when both conditions co-occur. This risk was noted to be particularly higher when both conditions were first diagnosed close in time to one other irrespective of the chronology of the onset (Qin et al. 2014).

There is sufficient evidence to suggest that untreated depression and anxiety may increase the risk of mortality in chronic physical conditions. For example, data from the TRIUMPH study showed that patients who have had an acute MI have a 70–90% increased risk of death at 1 year following MI if they have been diagnosed with depression but not treated (Smolderen et al. 2017). Those who were treated had similar risk of mortality to those without depression. Depression similarly increases the risk of mortality in diabetes (Park et al. 2013). Depression is a well-known risk factor for nonadherence to treatment regimens and rehabilitation programs.

The risk of complications due to the physical illness is higher when depression is comorbid, for example, in diabetes (Egede 2004). They are also more functionally disabled (Egede 2004). Depression may also lead to poorer self-care (physical activity and diet) increasing the risk of complications in diabetes.

Physical conditions may also contribute to the chronicity or recurrence of depression and leading on to a vicious cycle of poor outcomes and poor quality of life.

Conclusions

Depression and anxiety disorders are commonly seen psychiatric disorders in physical health conditions, with noncommunicable diseases in particular. Depression and anxiety disorders co-occurring in such instances can be therapeutically challenging besides the diagnostic dilemmas that they often present. Psychological interventions are generally recommended as first line for mild to moderate symptoms in the context of chronic medical conditions. Pharmacotherapeutic treatment may need to be carefully done mindful of drug-drug interactions. The outcome is worse when both physical health and mental health conditions co-occur, emphasizing the importance of treatment in improving physical and psychological health outcomes.

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Part V

Violence

Evidence-Based Interventions for Mental Health Consequences of Intimate Partner Violence

14

Emma Yapp, Roxanne Keynejad, and Siân Oram

Contents

Abstract

Intimate partner violence is one of the most prevalent forms of violence against women worldwide and is associated with a wide variety of mental disorders, including depression, anxiety, post-traumatic stress disorder, eating disorders, and psychosis. This chapter reviews the evidence for an association between intimate partner violence and mental disorders, and then summarizes the results of a rapid review of evidence on interventions for the mental health consequences of intimate partner violence. Available research suggests a bidirectional association between intimate partner violence and mental health problems. Although a variety of interventions addressing the mental health consequences of intimate

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_22

partner violence has been described, the literature largely focuses on women with depression or post-traumatic stress disorder. Studies of the mental health effects of intimate partner violence on women with severe mental illness, and studies conducted in mental health settings, remain limited. This chapter concludes with a summary of the strengths, limitations, and gaps in the evidence base, which require urgent research attention.

Keywords
Intimate partner violence · Domestic violence · Mental health

Introduction

Intimate partner violence (IPV) is one of the commonest forms of violence against women and is highly prevalent worldwide (World Health Organization 2013a). It is associated with a range of physical and mental health problems, including post-traumatic stress disorder (PTSD), depression, anxiety disorders, eating disorders, and psychosis (Trevillion et al. 2012), and is recognized internationally as an important social determinant of women and children's health (World Health Organization 2016, 2013b; World Psychiatric Association 2017; NICE 2014). This chapter summarizes evidence first, for an association between IPV and mental disorders, and second, for interventions which address the mental health consequences of IPV.

In this chapter, we define IPV as involving any of the following acts perpetrated by a current or former intimate partner: physical violence, where physical force is used intentionally to cause physical harm; sexual violence, which includes any non-consensual sexual activity; psychological abuse, which might involve emotional abuse or controlling behavior; and economic abuse, such as withholding funds or forcing a partner to take out loans in their name (European Institute for Gender Equality 2016). (Although the terms "intimate partner violence" (IPV) and "domestic violence" (DV) are often used interchangeably, this chapter uses IPV to indicate violence perpetrated by current or former partners only and DV to mean violence perpetrated by current or former intimate partners *and/or family members*.) This definition acknowledges that IPV takes many forms; research suggests that different types of violence commonly co-occur, with women rarely subjected to one form of abuse alone (Bott et al. 2012; Donaldson and Marshall 2005; Jansson 2007). Both women and men experience IPV, but the abuse experienced by women is more likely to be high frequency, to include sexual and severe physical violence, and to result in injury (Walby and Towers 2017).

Intimate Partner Violence Prevalence

Worldwide, an estimated 30% of ever-partnered women have experienced IPV, with regional estimates ranging from 23% in high-income countries (HICs) to 37% in Africa and the Eastern Mediterranean (World Health Organization 2013a). Data from national surveys demonstrate that IPV is endemic across a range of geographical and cultural contexts and that there is substantial variation in prevalence between countries. For example, the World Health Organization's multicountry study on women's health and domestic violence surveyed 24,000 women across 10 high-, middle-, and low-income countries: Japan, Brazil, Peru, Thailand, Bangladesh, Tanzania, Namibia, Samoa, Ethiopia, and Serbia and Montenegro (Garcia-Moreno et al. 2006). Thirteen to 61% of ever-partnered women had experienced physical violence from an intimate partner, 6–59% had experienced sexual violence committed by an intimate partner, and 20–75% had experienced at least one instance of psychological abuse from an intimate partner (Garcia-Moreno et al. 2006). Recent national statistics from England and Wales estimate that 26% of women have ever experienced DV, and 8% have experienced DV in the past year; the equivalent estimates for men are 14% and 4%, respectively (Office for National Statistics 2017). Similar figures are reported for the USA: an estimated 25% of women and 11% of men have experienced lifetime IPV that resulted in a negative impact, such as injury, fear, or need to access support services (Smith et al. 2017).

Nationally representative surveys also report a high prevalence of IPV among women with mental disorders (Jonas et al. 2014). In the USA, the National Epidemiologic Survey on Alcohol and Related Conditions (a household survey of 34,653 residents) reported high lifetime IPV prevalence estimates for women diagnosed with PTSD (29%), bipolar disorder (27%), panic disorder (23%), generalized anxiety disorder (22%), and depression (16%) (Grant and Goldstein 2011). Surveys conducted in psychiatric settings also indicate high IPV prevalence among women accessing mental health services (Oram et al. 2013). A Swedish survey of adult female mental health service users ($n = 1382$) found that, since 16 years of age, 25% of women had experienced IPV perpetrated by a current partner and 23% by a previous partner (Bengtsson-Tops et al. 2005). Few studies assess the extent to which mental health service users are at increased risk of IPV. However, the Adult Psychiatric Morbidity Survey (a household survey of 7461people resident in England) reported significantly increased odds of lifetime IPV among women with common mental disorders compared to those without (adjusted odds ratio 4.4, 95% confidence interval 3.2–6.1) (Jonas et al. 2014). One UK-based survey identified twice the odds of IPV than the general population, among female mental health service users (adjusted odds ratio 2.7, 95% confidence interval 1.7–4.0) (Khalifeh et al. 2015).

Intimate Partner Violence and Mental Health

Studies conducted in a range of settings support an association between IPV and mental health problems. (We use "mental health problems" to refer broadly to psychiatric disorders and "mental disorders" when referring to diagnoses made using validated scales, instruments, or specialist clinical assessment. Some included studies use "serious mental illness" (SMI) to distinguish disorders associated with more chronic functional impairment (usually, schizophrenia, schizoaffective disorder, bipolar affective disorder, and, sometimes, severe depression), from disorders which (in many but not all cases) have a wider spectrum of severity and functional impairment, often called common mental disorders (CMDs), including anxiety disorders and less severe depression.) High prevalence and risk of IPV have been demonstrated across diagnoses, including depression, anxiety disorders, and PTSD (Devries et al. 2013; Trevillion et al. 2012), perinatal mental disorders (Howard et al. 2013), eating disorders (Bundock et al. 2013; Jonas et al. 2014), psychotic disorders (Jonas et al. 2014), and alcohol and substance use disorders (Devries et al. 2014). Although the majority of research has been cross-sectional, growing evidence suggests a causal relationship between IPV and mental disorders. A meta-analysis found, for example, that the severity of IPV is associated with the severity of depression and PTSD and that rates of depression decrease with time since cessation of violence (Golding 1999). A more recent systematic review found that frequency of IPV was associated with risk of depression and PTSD and that severity of IPV was associated with anxiety symptoms (Lagdon et al. 2014). The relationship between IPV and mental health appears to be bidirectional; that is, IPV increases the risk of mental disorder, and mental disorder increases vulnerability to IPV. Systematic reviews show, for example, both that IPV is associated with subsequent depressive symptoms and alcohol use disorders (Devries et al. 2013, 2014) and that depressive symptoms and alcohol use disorders predict later IPV (Devries et al. 2013, 2014).

Depression, Anxiety, and PTSD

The majority of research investigating IPV and mental disorders focuses on depression, anxiety, or PTSD (Trevillion et al. 2012). Systematic reviews have demonstrated high prevalence and increased risk of lifetime and past year IPV among women with these disorders. For example, Trevillion and colleagues report pooled odds ratios for past year IPV of 3.3 (95% CI 2.4–4.7) for women with diagnosed depression, in comparison to women with no mental disorder, and 2.9 (95% CI 1.8–4.7) among women with diagnosed anxiety disorders. The same review reported that the pooled odds ratio for lifetime IPV among women with diagnosed PTSD was 7.3 (95% CI 4.5 = 12.0), in comparison to women with no mental disorder (Trevillion et al. 2012). Although the majority of studies included in this systematic review reported physical IPV, later research from Sweden found that experiencing any one of physical, sexual, or psychological IPV was associated with depressive symptoms in women (Lövestad et al. 2017).

Severe Mental Illness

The prevalence and risk of IPV among women with severe mental illnesses such as schizophrenia, schizoaffective, and bipolar affective disorders have been less well-studied than in women with common mental disorders. However, the limited evidence suggests a similar pattern. For example, Wave 2 of the USA National Epidemiologic Survey on Alcohol and Related Conditions (which recruited 25,626 married, recently married, and partnered adults) reported that bipolar I (AOR = 2.5, 95% CI 1.4–4.2) and bipolar II (adjusted odds ratio = 2.6, 95% CI 1.0–6.5) (Odds ratios were adjusted for race, age, education, individual income, family income, employment status, marital status, and sexual orientation.) affective disorders were associated with increased risk of past year IPV (Okuda et al. 2011). As described above, a UK survey of mental health service users found increased odds of IPV compared to the general population (Khalifeh et al. 2015). Service users had predominantly affective or non-affective psychoses and had been in contact with community mental health teams for 1 year or more. The survey used questions from the British Crime Survey, allowing comparison with a matched contemporaneous general population control. Past year prevalence of IPV was significantly higher among mental health service users than among controls (17% and 7%), as was lifetime prevalence (62% and 30%). Odds of past year and lifetime IPV were increased approximately two- and threefold, respectively, among patients versus general population controls (Khalifeh et al. 2015).

Other Mental Disorders

Fewer data are available on the prevalence and risk of IPV among women diagnosed with other mental disorders, but cross-sectional studies conducted in a variety of countries and settings have reported associations. For example, a cross-sectional study conducted in Pakistan found that women with obsessive-compulsive disorder (OCD) were at increased risk of lifetime IPV compared to those without any mental disorder (OR 6.4; 95% CI 2.0–33.2) (Ayub et al. 2009). Similarly, a nationally representative household survey conducted in England found that women with eating disorders had increased risk of IPV than control participants, both in the past year (OR 5.6; 95% 3.2–9.7) and throughout their lifetime (OR 4.1; 95% CI 2.5–6.6) (Jonas et al. 2014).

Interventions for the Mental Health Consequences of IPV

We performed a rapid review of evidence on interventions to address the mental health consequences of IPV. (We searched MEDLINE, using a combination of free-text and Medical Subject Heading (MeSH) terms, for studies about IPV, mental health problems, and interventions, on 15 January 2018. We supplemented this search by screening reference lists of relevant reviews (Oram et al. 2017; Trevillion 2013; Tirado-Muñoz et al. 2014; Jahanfar et al. 2013; Warshaw et al. 2013; Oram and Howard 2013; Arroyo et al. 2017). We screened the titles and abstracts of 750 papers, and the full-texts of 87. We included 36 papers in this review.) Rapid reviews are increasingly used to provide swift appraisals of research evidence, exercising condensed systematic review methods (Khangura et al. 2012). Papers were included which reported either on interventions aiming to address IPV in people with mental disorders or interventions aiming to address mental disorders in people affected by IPV. Furthermore, study samples were required to include women who had experienced IPV and measure at least one mental health outcome using a standardized and validated screening or diagnostic instrument.

Mental health interventions for survivors of IPV typically target women with diagnoses of PTSD and/or depression and often exclude those experiencing more severe mental health problems (Howard et al. 2010). For this reason, we distinguish between – and describe separately – interventions designed to address experiences of IPV among people with diagnosed mental disorders and mental health interventions designed for women affected by IPV, which typically target PTSD and depression. The rapid review identified 3 interventions addressing experiences of IPV among people with mental disorders (section "IPV Interventions for Women with Mental Disorders"), 36 mental health interventions designed for people affected by IPV (section "Mental Health Interventions for Women Affected by IPV"), and 5 study protocols for interventions relevant to section "Mental Health Interventions for Women Affected by IPV," which are summarized in section "Trial Protocols."

IPV Interventions for Women with Mental Disorders

The three interventions which addressed experiences of IPV among women with mental disorders were all conducted in HICs: one in the UK (Trevillion et al. 2014) and two in the USA (Frueh et al. 2009; Lu et al. 2009); all three recruited participants from mental health services.

Advocacy Interventions

One IPV advocacy intervention for people with diagnosed mental disorders was identified. Advocacy interventions are typically based around models of empowerment, with advocates aiming to support survivors to understand and make sense of their situations, achieve goals which they have set, and discuss potential solutions to challenges (Rivas et al. 2015). Common advocacy activities include providing legal, financial, and housing advice, safety planning, assisting survivors to access community resources, and providing continued support and informal counseling.

"Linking Abuse and Recovery through Advocacy" (LARA) was a pilot trial of a domestic violence advocacy intervention for survivors in contact with mental health services, which included participants with depression, schizophrenia, bipolar affective, and other disorders. The intervention aimed to both improve outcomes for survivors (including the frequency and severity of violence, safety behaviors, unmet needs, and quality of life) and raise clinicians' awareness, knowledge, and readiness to respond to domestic violence (Trevillion et al. 2014). The study included 35 women: 28 recruited from community mental health teams assigned to the intervention arm and 7 from teams assigned to the control arm. Of 28 intervention participants, 21 consented to receive domestic violence advocacy and received a mean of 7 1-h meetings and 28 20-min telephone conversations with domestic violence advocates. Results indicated a greater reduction in domestic violence incidents, unmet needs and social isolation among women in the intervention arm, and greater satisfaction with their overall quality of life, than was observed for control participants.

CBT-Informed Interventions

Cognitive behavioral therapy (CBT) applies a psychological model, which focuses on how individuals' thoughts and beliefs affect their feelings and actions. Interventions informed by CBT typically address how the person's thoughts, feelings, and behaviors interact, developing practical strategies to address "thinking traps" which precipitate and perpetuate psychiatric symptoms.

We identified two uncontrolled before-and-after studies examining the use of CBT for PTSD in people with bipolar affective disorder, major depressive disorder, schizophrenia (Lu et al. 2009), and schizoaffective disorder (Frueh et al. 2009). Although neither paper recruited participants based on experience of IPV, author correspondence (Trevillion 2013) indicated that IPV was reported by 40 (Lu et al. 2009) to 50% of participants (Frueh et al. 2009). Lu and colleagues evaluated manualized individual CBT, delivered to 19 participants, of whom 11 were women, comprising breathing retraining, psychoeducation, and cognitive restructuring. They found statistically significant improvements in PTSD and depressive symptoms (sustained at three and 6-month follow-up) among the 14 participants who completed at least 6 sessions, of whom 6 were female. Frueh and colleagues evaluated a manualized CBT intervention, delivered to 20 participants, of whom 15 were female. The intervention was provided as four group sessions followed by eight twice-weekly individual sessions, comprising education, anxiety management therapy, social skills training, and exposure therapy. They too found significant improvements in PTSD symptoms (sustained at 3-month follow-up) among the 13 participants who completed therapy, of whom 12 were female.

Mental Health Interventions for Women Affected by IPV

The rapid review yielded 36 studies which reported interventions addressing mental health problems among women who were either still experiencing IPV or had left a violent intimate relationship. They included CBT-informed interventions, mind-body interventions, and a variety of other models delivered in group and individual formats.

As expected, interventions focused predominantly on PTSD ($n = 24$) (Studies used a range of scales to measure PTSD symptoms, and some used two. The commonest were the CAPS clinician-administered PTSD scale (Blake et al. 1990), a version of the self-report PCL PTSD checklist (Blanchard et al. 1996: eight studies), and the self-report PDS Post-traumatic Diagnostic Scale (Foa et al. 1997: four studies)) and/or depression ($n = 27$) (Depression was also measured using a range of scales, but a version of the self-report Beck Depression Inventory (Beck et al. 1988, 1996) was used in 18 studies); anxiety symptoms ($n = 6$) and substance misuse ($n = 5$) were measured by a smaller proportion of studies. Most studies excluded participants with comorbid diagnoses of severe mental illness.

All studies were conducted in HICs: the USA (26), Greece (two), Hong Kong (two), and Spain, Denmark, and Scotland (one each). The majority of randomized controlled trials (RCTs) focused on depression and/or PTSD. Identified non-randomized studies comprised uncontrolled trials, quasi-experimental, and feasibility studies.

CBT-Informed Interventions

Randomized Controlled Trials

Five RCTs were identified which evaluated interventions based on principles of CBT. These were the individually delivered HOPE (Helping to Overcome PTSD through Empowerment: Johnson et al. 2011, 2016) program, CTT-BW (Cognitive Trauma Therapy: Kubany et al. 2003, 2004), CPT (Cognitive Processing Therapy: Iverson et al. 2011a, b; Resick et al. 2008), PATH (Psychological Advocacy Towards Healing: Ferrari et al. 2018), and one group CBT intervention (Crespo and Arinero 2010).

HOPE (Johnson et al. 2011, 2016), based on principles of CBT and psychoeducation about both IPV and mental health, provided women in domestic violence shelters with an “empowerment toolbox.” This covered coping strategies for personal safety, managing symptoms, and improving relationships, which participants learned to use to address PTSD symptoms. Up to 12 sessions, each lasting 60–90 min, were delivered over 8 weeks. The RCT compared HOPE and standard shelter services (SSS) with SSS alone, which provided case management, a supportive environment, and parenting and support groups. Participants had experienced at least one incident of IPV in the month before shelter admission and met diagnostic criteria for partner violence-related PTSD or sub-threshold PTSD. In a total sample of 70, HOPE was associated with significant reductions in depressive symptoms, emotional numbing, effortful avoidance, and arousal (Johnson et al. 2011). In a second study, with a sample of 60, HOPE was associated with significant reductions in PTSD and depressive symptoms (Johnson et al. 2016). While the first study found less revictimization at 6-month follow-up, this was not replicated in the second study.

CTT-BW (Kubany et al. 2003, 2004) also applied PTSD and IPV-focused CBT techniques, over 8 to 11 90-min sessions. The model comprised in-depth violence and trauma history taking, psychoeducation about PTSD, learned helplessness and stress management, and exposure homework (looking at photographs of and visualizing an abusive partner and watching films about domestic violence). These were delivered alongside two to four sessions of cognitive therapy for trauma-related guilt (CT-TRG); later modules focused on self-advocacy and empowerment. Women receiving CTT-BW were compared with a waiting list control of women, who received CTT-BW after a 6-week delay. Participants were no longer experiencing IPV and met diagnostic criteria for abuse-related PTSD and criteria for abuse-related guilt measured using the “Global Guilt Scale” of the authors’ Trauma-Related Guilt

Inventory (TRGI). Women who had experienced IPV within the past 30 days were excluded. In a total sample of 32, CTT-BW was associated with significant improvements in PTSD and depressive symptoms, which were maintained at 3-month follow-up (Kubany et al. 2003). In a second study, with a total sample of 125, CTT-BW was again associated with significant improvements in PTSD and depressive symptoms, which were maintained at 6-month follow-up (Kubany et al. 2004).

The *CPT* intervention applied CBT techniques across six sessions, each lasting 2 h, over 6 weeks, to help women to identify and confront cognitive distortions relating to their worst-experienced traumatic events, including psychoeducation about PTSD. Three papers reported results for participants who had experienced interpersonal (Resick et al. 2008) or intimate partner violence, only (Iverson et al. 2011a, b). Women with PTSD secondary to sexual abuse were recruited through community advertising and referrals from support services and therapists. Women experiencing violence from a current partner in the past 6 months were excluded. The full protocol involved written accounts (WA), in which the participant constructed a script over 45–60 min in which they described a particular "index trauma," after which they rated their "Subjective Units of Distress Scale" (SUDS) and "strong emotions," before reading the account aloud to the therapist. The RCT compared three conditions: the full CPT package (comprising structured, cognitive therapy (CPT-C), and WA), and one or the other constituent parts, individually. In a total sample of 150, all conditions (CPT, CPT-C, and WA) were associated with significant improvements in PTSD, depression, and anxiety, (maintained at 6 months' follow-up), with CPT-C the most effective (Resick et al. 2008). These improvements were associated with reduced likelihood of IPV victimization at 6-month follow-up, after controlling for violence in the previous year (Iverson et al. 2011a). Reductions in PTSD and depressive symptoms were associated with frequency of IPV exposure, with larger reductions in women who experienced more frequent abuse. However, differences equalized at 6-month follow-up (Iverson et al. 2011b).

The *PATH* intervention (Ferrari et al. 2018) comprised a CBT-informed psychological intervention delivered over eight 1-h sessions, either weekly or fortnightly, followed by two "booster" sessions, 1 and 3 months later. PATH was delivered by specialist psychological advocates (SPAs) who had received a 25-day manualized training program developed by a clinical psychologist. The intervention addressed the psychological impacts of IPV; topics included: PTSD, depression, anxiety, low self-esteem, anger, and loss. Study participants were women seeking help for IPV from one of two UK community agencies, aged 17 years or over. Women diagnosed with psychotic disorders, severe drug or alcohol problems, who were unable to read English, or already receiving psychological support were excluded from participation. The RCT compared PATH plus standard agency advocacy services, with standard agency advocacy services alone, which encompassed safety planning, health and safety, housing, welfare benefits, and legal assistance. In a sample of 263 women, the intervention group had significantly greater reductions in PTSD, depressive symptoms, and psychological distress than the control group at

12 months' follow-up. There were no significant differences between groups in anxiety or physical health symptoms or experiences of IPV at follow-up. A nested qualitative study also established that women in the control arm reported an unmet need for psychological support, while those in the intervention arm particularly valued the person-centered and nonhierarchical nature of the PATH intervention. One RCT evaluated a group intervention (Crespo and Arinero 2010), delivered to groups of three to five women across eight sessions lasting 90 min each. The intervention provided initial information about IPV before focusing on a CBT model. This included increasing pleasant activities, problem-solving, cognitive restructuring, and building self-esteem. Each session ended with 5 min of diaphragmatic breathing. A planned waiting list control was deemed unethical, and instead versions of the intervention using exposure techniques versus communication skills were compared. Participants with PTSD symptoms, but who did not meet criteria for diagnosis, were recruited from organizations supporting women experiencing IPV. In a sample of 53 women, having received either intervention was associated with significant reductions in depressive, PTSD and anxiety symptoms, with little difference between exposure and communication skills conditions. Improvements in symptoms were maintained at 1-month follow-up.

Nonrandomized Studies

In addition to the identified RCTs, six non-randomized studies evaluated CBT-informed interventions, including the feasibility study for the HOPE intervention described above (Johnson and Zlotnick 2006). An uncontrolled before-and-after study of 20 women attending CTT for intimate partner violence-related PTSD found that reductions in trauma-related guilt from pre- to mid-treatment assessment predicted PTSD and functioning outcomes following CTT (Allard et al. 2016). One small study ($n = 15$) explored the feasibility and potential effectiveness of delivering trauma-focused CPT or prolonged exposure therapy via secure, encrypted videoconferencing technology (Hassija and Gray 2011), demonstrating reduced PTSD and depressive symptoms and high satisfaction ratings. Two small studies reported on a combined CBT and motivational interviewing (MI) intervention for survivors of IPV with moderate to severe depressive symptoms (Nicolaidis et al. 2013a, b). (Depressive symptoms were defined as a score of 15 or above on the PHQ-9, which has been found to have a sensitivity of 0.68 and specificity of 0.95 for Major Depressive Disorder (Kroenke et al. 2001).) The "Interconnections Projects" aimed to reduce depression severity and were developed using a community-based participatory approach with African American and Hispanic survivors of IPV. The intervention for Hispanic survivors of IPV ($n = 10$) involved 12 weekly group sessions, which were led by a trained Hispanic community health worker. The intervention adapted for African American women ($n = 60$) also provided a race-matched health worker to deliver individual MI sessions and group CBT workshops, but the final 20 participants received CBT-based materials in individual MI sessions, due to low attendance. Both interventions were associated with significant reductions in depression severity. In a total sample of 50 women staying in a refuge, 1 study compared 2 groups volunteering to participate in 12 h of group counseling over 2 weeks, comprising cognitive restructuring, assertiveness and communication skills training, problem-solving, body awareness, and vocational counseling, with a control group (Cox and Stoltenberg 1991). The authors found significant improvements in anxiety and depressive symptoms in those intervention recipients who did not complete and receive interpretation of a personality factors questionnaire in comparison to those who did, which they attributed to group differences.

Finally, a single feasibility study compared a 20-week cognitive therapy intervention (“INSIGHT”) in 27 women attending a women and children’s service, of whom 67% had a history of IPV (Zust 2000). Depression and anxiety symptoms did not improve significantly in either group post-intervention, and 50% of women affected by violence dropped out.

Mind-Body Interventions

Mind-body interventions focus on the interconnectedness of mind and body. Included studies evaluated an individually delivered yogic breathing intervention (Franzblau et al. 2008); two variants of group-delivered mindfulness-based stress reduction (Dutton et al. 2013; Kelly and Garland 2016); two stress-management groups, including biofeedback (Michalopoulou et al. 2015; Kokka et al. 2016); and a trauma-sensitive yoga addition to group psychotherapy (Clark et al. 2014).

Randomized Controlled Trials

One RCT evaluated an individually delivered yogic breathing intervention (Franzblau et al. 2008), which compared (i) 45 min of yogic breathing training on 2 consecutive days; (ii) 45 min of recorded testimony about IPV, given to a trained, race-matched research assistant on 2 consecutive days; (iii) a combined condition; and (iv) a control group, which did not receive any intervention. Participants were women who had experienced IPV within the past 2 years, recruited through community leaflet and newspaper advertisements. In a total sample of 40 women, testimony, yogic breathing, and a combination of the two were each associated with significant reductions in depressive symptoms, compared to the control group.

Two RCTs reported applications of MBSR (mindfulness-based stress reduction), adapted for women with a history of either IPV (Dutton et al. 2013) or interpersonal violence (including, but not limited to, IPV) (Kelly and Garland 2016). Kelly and Garland delivered trauma-informed MBSR (TI-MBSR) in eight sessions lasting 120–150 min each. Each session comprised guided meditation, gentle movement exercises, lectures, and group discussions, with additional psychoeducation addressing IPV. The intervention group was compared with a waiting list control group, which was later offered the intervention. Participants were self-identified female survivors of IPV, recruited through community advertisements. In a sample of 45 women, TI-MBSR was associated with significant reductions in PTSD and depressive symptoms in comparison to the control group. Participants in Dutton et al.’s study were survivors of IPV; results are as yet unpublished.

Stress management and health promotion groups were trialed in two RCTs from the same research group. The first evaluated an 8-week stress management program alone, comprising twice-daily relaxation breathing and progressive muscle relaxation training through an audio CD, supplemented with brief, problem-specific group counseling sessions (Michalopoulou et al. 2015). The intervention group was compared to a control group, which received standard shelter services. In a total sample of 34 women, there was no significant reduction in perceived stress among the intervention group. The authors concluded that it should be considered an adjunctive intervention, as participation was associated with significant reductions in perceived stress. A later version comprised biofeedback-assisted abdominal breathing, using interactive computer-guided practice, progressive muscle relaxation (PMR) following an audio CD, and guided imagery, alongside dietary counseling and pedometer monitoring (Kokka et al. 2016). The group intervention was delivered in eight 60-min sessions to women currently experiencing IPV, recruited through advertising in women's support and pediatric hospital settings. The intervention group was compared to a control group which received the PMR CD only. In a sample of 60 women, the intervention condition showed significantly greater reductions in depressive and anxiety symptoms than the control group.

Nonrandomized Studies

One feasibility study incorporated 35-min sessions of trauma-sensitive yoga into a 12-week manualized group psychotherapy program focused on IPV, with 17 participants (Clark et al. 2014). Recruitment rates were 85% of eligible women, with 70% retention to follow-up, and no reported harms, supporting feasibility.

Other Group-Administered Interventions

Randomized Controlled Trials

Nia (Kaslow et al. 2010) is a "culturally informed, empowerment-focused psychoeducational group intervention" for African American women with recent history of IPV and a suicide attempt, evaluated in an RCT. The intervention was delivered to groups of three to five women in ten 90-min sessions which focused on safety planning, psychoeducation about IPV and risk of suicide, relationship difficulties and interpersonal dilemmas, and addressing social support and resource needs. Control women received treatment as usual (TAU): referral for standard hospital-delivered care, including weekly support groups addressing suicidal thoughts and IPV. Participants were African American women recruited from a public hospital. In a sample of 208 women, Nia attendance was associated with significantly reduced depressive symptoms, but not PTSD symptoms or suicidal ideation. Post-intervention, and at 6- and 12-month follow-up, Nia attendance was, however, associated with reduced suicidal ideation in response to IPV incidents, compared to TAU.

Nonrandomized Studies

Six nonrandomized group-administered interventions were identified, which addressed mental health problems in the context of traumatic experiences or difficult relationships, using a range of psychotherapeutic, psychoeducational, and skills-focused models.

An uncontrolled, multicenter Scottish study evaluated structured group psychotherapy for survivors of interpersonal trauma, including IPV, based on a Trauma Recovery and Empowerment Model (TREM) (Karatzias et al. 2016). Seventy-one participants attended 9 weekly or biweekly women-only groups, receiving 18 sessions (abbreviated from the full 29 session model), lasting 90 min. Post-traumatic stress, anxiety, and somatization symptoms (but not depressive symptoms) improved significantly following participation, but 41% of participants dropped out. Among those completing therapy, clinically significant improvements were strongest on dissociative symptoms.

One quasi-experimental study reported results from the Boston Consortium of Services for Families in Recovery (BCSFR) trauma-informed model of care; this program targeted interpersonal violence generally, however, rather than IPV specifically (Amaro et al. 2007). The model comprises trauma and mental health assessment, treatment planning and case management, attendance at a trauma recovery and empowerment group (25 sessions; 12 was considered completion, which was achieved by 44%), and attendance at four manualized, trauma-informed skills-building groups, including leadership, economics, family reuniting, and parenting skills. The quasi-experimental study compared outcomes from women attending BCSFR programs to those of women attending programs of similar duration in neighboring metropolitan areas. At 6 and 12-month follow-up, women attending BCSFR ($n = 181$) had significantly reduced PTSD symptoms in comparison to women attending usual care services ($n = 161$), but there were no differences in substance misuse rates.

One small before-and-after study reported on a community-based Interpersonal Psychotherapy (IPT) intervention for IPV survivors with moderate to severe symptoms of depression (Cort et al. 2014). The intervention provided eight sessions, which aimed to address current interpersonal disputes with non-abusive family and friends, as well as and chronic, problematic interpersonal patterns (Cort et al. 2014). Women ($n = 32$) also received a workbook, featuring a relationships and feelings log, exercises, safety plan, and information about IPV. Data from 3-month follow-up suggested significant improvements in symptoms of depression, post-traumatic stress disorder, and interpersonal problems.

One feasibility study conducted in the USA used community-based participatory research (CBPR) to develop and adapt a group psychotherapy intervention. The intervention comprised six to ten sessions, each of 90 min, and included supportive psychotherapy, psychoeducation, acceptance and commitment therapy, and self-care strategies, focusing on PTSD, family relationships, and well-being. The study included 22 Hispanic women experiencing IPV, who screened positive for PTSD, and found significant PTSD symptom reductions at 6-month follow-up and reduced symptoms of depression at 6- and 12-month follow-up (Kelly and Pich 2014).

Two trauma-informed, gender-responsive, manualized group intervention "curricula" (known together as Women's Integrated Treatment) were evaluated using an uncontrolled design, at a residential center where 55% of women had forensic histories (Covington et al. 2008). The 2 manualized curricula, HWR (Helping

Women Recover), a 17-session program for addictions, and BT (Beyond Trauma), an 11-session program linking violence, abuse, and trauma to substance misuse, both use a combination of psychoeducation, cognitive behavioral, expressive arts, and other techniques. Participants were 202 women who completed a 45-day orientation prior to treatment, but attrition and missing data limited analysis to between 40 and 44 clients. Women completing HWR showed significant improvements in PTSD, depressive, and anxiety symptoms, which improved further on completion of BT. Depressive symptoms also reduced during the 45-day stabilization prior to treatment. Women's Integrated Treatment was rated positively by 92% of those completing the final survey.

Other Individually Delivered Interventions

Randomized Controlled Trials

One RCT evaluated the effectiveness of an expressive writing intervention in reducing symptoms of depression and PTSD (Koopman et al. 2005). The intervention consisted of four supervised 20-min sessions in which women used expressive writing to express their most traumatic life experience; the control condition involved writing neutrally about daily routines. The sample comprised women who had experienced, but were not currently experiencing, IPV, recruited through flyers and adverts in newspapers and online communities. In a sample of 47 women, expressive writing was not associated with a significant reduction in symptoms of PTSD. A reduction in depressive symptoms was observed in women screening positive for depression at baseline.

Two brief advocacy interventions (under 12 h) were conducted with Chinese women in Hong Kong (Tiwari et al. 2005, 2010), predominantly by telephone, with 200 and 106 women, respectively (Tiwari et al. 2005, 2010). Both studies evidenced improvements in depressive symptoms post-intervention. One further advocacy intervention (El-Mohandes et al. 2008) targeted depression, smoking cessation, and experience of IPV in African American pregnant women ($n = 1070$) over a period of 10 weeks (38.6% had experienced IPV). This intervention did not deliver a significant reduction in symptoms of depression.

Two studies (isafe, Koziol-McLain et al. 2018; I-DECIDE, Hegarty et al. 2019) examined the efficacy of an online safety decision aid for improving the mental health of women experiencing IPV over 12 months in Australia (Hegarty et al. 2019) and New Zealand (Koziol-McLain et al. 2018). In both studies, the intervention comprised an online decision aid which assessed women's relationship priorities, plans, and risks, before producing an appropriate action plan. Both studies' control groups received a static website listing resources for IPV and an emergency safety plan. *I-DECIDE* participants reported experiencing IPV or fear of a partner in the last 6 months, were aged 16–50 years, and spoke English (Hegarty et al. 2019). *isafe* participants were English-speaking women aged 17 years or older and currently experiencing IPV (Koziol-McLain et al. 2018). At 12 months' follow-up (I-DECIDE, $n = 355$; isafe, $n = 358$), neither intervention demonstrated greater improvements in depressive symptoms than the control arm.

Nonrandomized Studies

Two nonrandomized studies of individually delivered interventions to address the mental health consequences of IPV were identified, one conducted in Denmark, the other in the USA. The Danish study evaluated a trauma recovery group-model intervention (OSV, Out of the Shadows of Violence) for IPV and mental health (Hansen et al. 2014). Out of 212 initial participants, 75 dropped out before starting the program; a further 67 dropped out during the program. The intervention was tailored to individual recipients, but comprised a 1–12 session social worker-delivered stabilization phase; this focused on economic and psychological stability and provided financial, housing, and psychoeducational support. Next, individual (1–12 sessions lasting 60–90 min) or group (14 weekly 3-h sessions) therapy focused on discussing traumatic experiences and emotional responses. Finally, 24 individual or 3 group follow-up sessions supported women to maintain positive changes. Among the 70 women who completed the program, PTSD, depressive, and anxiety symptoms all reduced significantly after the first and second phases; PTSD and depressive symptoms reduced further following the third phase.

In the USA, a mixed-methods feasibility study was conducted of the Home Visitation Enhancing Linkages Project (HELP), a screening, motivational interviewing, and case management intervention to address maternal depression, substance use, and IPV. Health visitors screened 116 clients: 22% screened positive for one or more risk domains, but implementation of motivational interviewing and case management was lower than expected (Dauber et al. 2017).

Trial Protocols

The rapid review also identified five study protocols for mental health interventions for women who have experienced IPV. All protocols are for RCTs, of which two will be conducted in HICs: Canada (Ford-Gilboe et al. 2017) and the USA (Glass et al. 2017). The remaining three will be conducted in low- and middle-income countries (LMICs): Kenya (Sijbrandij et al. 2016), Tanzania (Tol et al. 2017), and South Africa (Pallitto et al. 2016). Two protocols describe interventions that make use of an online safety planning aid (Ford-Gilboe et al. 2017; Glass et al. 2017), and three describe psychological interventions. Psychological interventions include a combined CPT and advocacy intervention designed for refugees experiencing psychological distress (Tol et al. 2017), a nurse-led empowerment counseling program for pregnant women (Pallitto et al. 2016), and individual counseling study (Sijbrandij et al. 2016). All interventions will evaluate their effects on symptoms of depression; some also target alcohol use (Glass et al. 2017), anxiety (Tol et al. 2017), and/or PTSD symptoms (Ford-Gilboe et al. 2017; Tol et al. 2017; Sijbrandij et al. 2016).

Quality of Evidence

Although the quality of evidence identified during the rapid review was not formally assessed, a number of strengths, weaknesses, and evidence gaps were apparent. The range of interventions represented in the literature is encouraging, encompassing CBT, advocacy and empowerment approaches, and creative, expressive, and mind-body therapies. The variety of disciplines reporting on included interventions also demonstrates the multidisciplinary research base for mental health interventions for women experiencing IPV, including nursing, social work, psychology, and psychiatry-led interventions.

RCTs were well-represented among the interventions aiming to reduce the mental health consequences of IPV; several feasibility and pilot studies leading to these more rigorous trials were also identified. RCTs were used to evaluate a diverse range of therapies, which were in several cases tailored to cultural and/or clinical contexts. However, only a minority investigated the extent to which improvements were maintained in the medium to long term, and in many the sample size was small. Fifteen of the 39 reviewed studies included fewer than 50 participants; by way of context, approximate rules for the design of *pilot*s to inform main trials with 90% power and two-sided 5% significance suggest sample sizes per treatment arm of 25 for small (0.2) standardized effect sizes (Whitehead et al. 2016). Attrition was a problem across many studies; strategies for retention should be carefully considered in future research. These may include the use of community-based participatory research approaches to develop and adapt interventions, described in four nonrandomized studies addressing the mental health consequences of IPV (Nicolaidis et al. 2013a, b; Kelly and Pich 2014; Cort et al. 2014). Other weaknesses include the lack of control groups in nonrandomized studies, which limits the interpretation of their results.

The majority of interventions targeted PTSD and, to a lesser extent, depression; evidence for interventions to address other mental health needs was limited. Interventions to address IPV experienced by women with severe mental illness are particularly lacking: only three studies were identified, none of which were RCTs. More evidence is needed from LMICs; two RCTs from LMIC settings are among the published protocols identified during this review.

Conclusions

Intimate partner violence is a highly prevalent form of gender-based violence, which is associated with a variety of mental health problems. There is a growing evidence base for interventions to address symptoms of depression and PTSD among women who have experienced IPV; research suggests in particular that CBT-based interventions and cognitive processing may be effective interventions for women who are no longer experiencing abuse. Less evidence is available regarding interventions to reduce psychological symptoms among women who are still enduring abusive relationships, although integrated advocacy and psychological interventions also appear to be promising. Evidence on effective interventions for mental health service users is also lacking. Future research in this area should seek to build on the growing evidence base of non-specific interventions for mental health service users who have experienced trauma.

Cross-Reference

▶ Mental Health Consequences of Sexual Assault

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Mental Health Consequences of Sexual Assault

15

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Contents

Abstract

Sexual assault is a traumatic experience known to impact multiple domains of a person's health, including mental health. This chapter provides a comprehensive overview of the mental health consequences in sexual assault survivors as well as sheds insight into the evidence-based psychological interventions. A brief introduction provides a conceptual underpinning based on existing global literature. The common aftermath of any type of sexual assault and the substantial heterogeneity that exists in the type of assault experiences individuals go through have both been discussed, leading to a complex permutation of outcomes in the

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_24

affected population. The section on intimate partner violence versus non-partner sexual violence underscores that the relationship with the perpetrator has a significant bearing on the experience and outcome of sexual assault. Specific details with regard to vulnerable populations, such as sexual minorities and people in conflict zones, have also been expounded upon, so as to emphasize that the sociocultural background of the survivors is also paramount in understanding their psychopathology. The section on mental health outcomes in adulthood of childhood sexual abuse survivors validates the fact that such assault can leave significant imprints on the individual's personality and psychological well-being. After discussing the theoretical perspectives of these mental health consequences, the chapter culminates with an update on current practices in terms of effective evidence-based interventions with this vulnerable and distressed population.

Keywords
Sexual assault · Abuse · Violence · Mental health outcomes · Psychological interventions · PTSD

Introduction

As defined by the World Health Organization (WHO), sexual assault is an experience of physical and/or sexual violence by intimate partners or non-partners (García-Moreno et al. 2013). The range of acts that constitute physical violence include being hit, slapped, kicked, threatened with a weapon, and many other forms of violence. Sexual violence is defined as being physically forced to have sexual intercourse without consent, out of fear of what a partner might do, and/or performing a sexual act that is humiliating or degrading.

Worldwide, the World Health Organization estimates that 35% of women report experiencing physical or sexual violence, but the prevalence varies across regions (García-Moreno et al. 2013). The WHO region of Africa reported the highest lifetime prevalence of sexual violence, with 36.6% (32.7–40.5) reporting intimate partner violence and 11.9% (8.5–15.3) reporting non-partner sexual violence, and the Western Pacific reporting the lowest lifetime prevalence, with 24.6% (20.1–29.0) reporting intimate partner violence and 6.8% (1.6–12.0) reporting non-partner sexual violence.

The literature shows that a host of risk factors are associated with sexual violence, including low socioeconomic status and partner alcohol consumption (Bangdiwala et al. 2004; Abbey et al. 2011). Additionally, there are factors specific to particular regions of the world, such as experiencing dowry harassment in India, and having a partner with intermittent unemployment and college campus environments in the United States (Kyriacou et al. 1999; Jeyaseelan et al. 2007; Coker et al. 2011). Interventions have been developed to address these risk factors through active bystander trainings in the United States and focus groups on extended family dynamics in India (Coker et al. 2011; Krishnan et al. 2012).

Sexual Assault and Mental Health Outcomes

Sexual violence has been linked to many negative health outcomes. The most recent systematic review examining the association between sexual abuse and lifetime diagnosis of psychiatric disorders was conducted by Chen et al. in 2010. This review included only longitudinal studies ($n = 37$; 3,162,318 participants), which compared survivors of sexual abuse, which may have occurred at any age, with control groups. Sexual abuse was found to be associated strongly with diagnoses of anxiety disorders, depression, eating disorders, PTSD, sleep disorders, and suicide attempts. These associations continued to be robust, irrespective of the gender of the survivor as well as the age at which the abuse had occurred. No significant associations were found with schizophrenia and somatoform disorders. Also, in terms of the effects of severity of the abuse, a history of rape was found to strengthen the relationship between abuse and lifetime diagnosis of depression, PTSD, and eating disorders. Another systematic review, investigating somatic disorders, showed that a history of sexual abuse was strongly associated with a lifetime diagnosis of functional gastrointestinal disorders, nonspecific chronic pain, psychogenic seizures, and chronic pelvic pain, but not with fibromyalgia (Paras et al. 2009). However, analyzing studies that specifically defined sexual assault as rape, associations were found between the abuse experience and fibromyalgia, chronic pelvic pain, and functional gastrointestinal disorders.

In a study conducted in Malawi with females in the age group 13–24 years, Fan et al. (2016) found that undergoing the experience of sexual violence was associated with survivors having higher odds of experiencing suicidal ideations and carrying out suicidal attempts (about 3.3 times), psychological distress (2.5 times), as well as sexually transmitted infections (3 times), compared to the control group. The nature of the first sexual assault experience was also considered. Non-penetrative sex was endorsed by a larger percentage of females in the younger age group (87.1%) as compared to the older age group (64.2%), while the trend was reversed for penetrative sex (42.7% in the older age group vs. 22.2% in the younger).

The experience of undergoing a sexual assault, even if it was a onetime event, consistently gives way to other challenging situations which are full of stressors in the aftermath of it. Thus, it is not only the trauma of the event that the survivor has to work through but she also has to manoeuver the impact it has on her everyday life. One study from Denmark (Clasen et al. 2018) used a mixed-methods approach to explore the social consequences suffered by adolescents (females aged 15–18) who had undergone sexual assault. A majority – 87.8% – of the participants were attending school at the time of assault and treatment, and it was in that setting that most of their struggles manifested. Almost half of the assaults had been perpetrated by someone from the victim's social circle – friend, acquaintance, current or former partner. It was found that only 39.2% of this group had reported the assault to the police, while the others cited reasons such as fear of social consequences and fear of stigma and of being reproached for reporting. One of the troubling consequences of the sexual assault was the victim's inability to thrive at school, with sleeplessness, difficulty in concentrating, and withdrawal from activities being common symptoms. Exhausting attempts on the part of these adolescents to repress the memories and function as though nothing had happened were also noted. Issues were complicated further by the fact that for many of these adolescents, their offenders attended the same class or school, which further made them avoid going to school, leading to increased absenteeism. About 8.5% of the group reported having been bullied or slandered by peers in the aftermath of the sexual assault. More than half the participants had been having difficulties with friends, such as being excluded and isolated from the social circle. Thus, sexual assaults can greatly interfere with the individual's daily life and general well-being, especially if their disclosures are not met with empathy and support from peers.

Most studies in this area of research are of a cross-sectional nature (Scheffer and Renck 2008; Chandra et al. 2009), with fewer investigating the temporal nature of this association. However, among those studies that are not cross-sectional, the evidence shows that mental health disorders can act as both predictors and/or outcomes of sexual violence (Devries et al. 2013). For example, childhood sexual violence has been associated with adult depression and PTSD, and sexual violence as a result of trafficking was associated with depression, anxiety, and PTSD (Schoedl et al. 2010; Hossain et al. 2010). Fewer articles have been published on the effects of mental health disorders on risk of sexual violence, although one study found that participants with depression were at a higher risk of becoming a victim of a violent crime (Fazel et al. 2015). This bidirectional relation between mental health and sexual violence was illustrated in an intervention study, where women who were treated for PTSD and depression after an intimate partner violence event were at a lower risk for later victimization (Iverson et al. 2011).

Assault Characteristics and Mental Health Outcomes

The negative outcomes in survivors of sexual assault are also determined by the different types of assault experiences. Characteristics of these experiences may co-occur, vary, and relate to each other in various ways, leading to a complex web of risks and outcomes. Keeping in mind this heterogeneity in assault experiences and their differential effect on outcomes, Masters et al. (2015) used latent class analyses to identify three subgroups of survivors with similar victimization experiences, which were also validated in a second cohort recruited in the same manner. These groups were contact or attempted assault, incapacitated assault, and forceful severe assault. The first group, contact/attempted assault, was the smallest, comprising only 17% of the sample, and these participants were likely to have been victims of attempted rape. They experienced lesser psychological distress at the time of assault compared to the other two groups. While incapacitating the survivor by making them consume excessive alcohol or other substances was the tactic used in the incapacitated assault group, physical force was the predominant tactic used to victimize women from the third group of forceful severe assault. Confirming the effect of assault experiences on mental health consequences, this study found that the forceful severe assault group had significantly higher scores on anxiety, depression, and trauma, compared to the contact/attempted assault and incapacitated assault groups. They also had much more frequent incidents of heavy episodic drinking and a greater likelihood of being in unhealthy intimate relationships where the partner was controlling and violent. In terms of their profiles, women in the third group had double the likelihood of having been incarcerated than women in the first two groups and they also registered a much higher likelihood of having had transactional sex. The authors posit that this group may be demonstrating vulnerabilities on many such counts, which may have increased the risk of victimization and revictimization.

In another study looking at characteristics of sexual assault, Peter-Hagene and Ullman (2015), three general categories of assault types were uncovered, namely, high-violence assaults, alcohol-related assaults (women drinking at the time of assault), and moderate sexual severity assaults. The alcohol-related assaults group had higher PTSD symptoms than the moderate severity group and lower than the high-violence group. This may be explained by the fact that physical violence is known to be the biggest predictor of PTSD symptoms, and alcohol-related assaults typically involve lesser physical violence. Numerous differences were found between the experiences and psychopathology of the high-violence and alcohol-related assault groups, which were related to negative social reactions toward the latter group as well as not believing their narratives, on account of the victims' consumption of alcohol. These participants were also found to have significantly higher scores on questionnaires assessing self-blame, with characterological self-blame emerging as a mediator between assault type and PTSD symptoms. Thus, while sexual assaults have been seen to be associated with a general hampering of the individual's psychological well-being, it is also important to take note of the unique ramifications that may be stemming from variable assault characteristics. Sexual assault lies on a continuum (Masters et al. 2015; Peter-Hagene and Ullman 2015). Careful and detailed assessment of the various assault characteristics – such as tactics used, outcome, frequency, relation with the perpetrator, history of CSA and violence involved are needed so as to have a nuanced and complete understanding of the experience and its sequelae in terms of psychosocial functioning of the individual. This may better inform work towards recovery.

Intimate Partner Versus Non-partner Sexual Violence

Another important factor that colors the outcomes following sexual assault is the relationship that the survivor has with the perpetrator. Mathur et al. (2018) sought to disentangle and contrast between the effects of sexual violence committed by intimate partners versus that by non-partners, in Kenya and Zambia. In this study which included adolescent girls and young women in the age group of 15–24, it was found that in Kenya 19.1% of the respondents reported the experience of sexual violence by intimate partners, while 21.4% underwent such assault by non-partners. In Zambia these figures stood at 22.2% and 16.9%. The authors posit possible under-reporting of non-partner sexual violence in view of higher stigma associated with these experiences. The study revealed significant negative outcomes on the variables of mental health symptoms and sexually transmitted infections in all groups. However, increased HIV risk perception was found only when the sexual violence was committed by non-partners, which may point toward survivors viewing violence by partners through relatively more innocuous lenses.

A recent study (Lovell 2018) followed the method of examining untested sexual assault kits (SAK), which refer to a set of items used by medical professionals to collect information and evidence from victims of sexual assaults. From a sample of 429 SAKs, 10.5% belonged to victims who had been assaulted by current or former intimate partners. Further analyses of this subset revealed that 40% of the offenders who had meted out intimate partner sexual assault were serial sex offenders. Compared to other sexual assaults, the use of bodily force by the perpetrators was significantly high for this group, at over 90% out of the cases studied. An important difference was also found between the courses of investigations in these types of sexual assaults. As compared to other sexual assaults, investigations of intimate partner sexual assaults very rarely reached completion, since the victim often claimed to have lied, refused to prosecute, or her account was found to be dubious by the detective on the case. The most common (37.2% of the cases) sequence of events in these cases was that the offender demanded sex from the victim and the victim refused, which was followed by physical violence from the offender and ultimately the sexual assault.

Sexual Assault in Vulnerable Populations

Combing through research on sexual assault, it is evident that there are certain marginalized groups that are at greater risk of suffering from traumatic consequences in the face of such violations, on account of their sociocultural positioning. It is indicated that this may be particularly related to post-assault experiences of these groups (Sigurvinsdottir and Ullman 2016).

Sexual Minorities

A review of studies on sexual violence in the LGBTQ community found that about 15.6% and 85% of lesbian and bisexual women, respectively, report a lifetime event of sexual assault (Rothman et al. 2011). With these high proportions of sexual violence, there are likely severe mental health repercussions.

One longitudinal study (Sigurvinsdottir and Ullman 2016) looked at the role of various types of social support on post-trauma recovery and symptoms of PTSD as well as depression in heterosexual and bisexual women. A salient finding was that while for the heterosexual group, perceived social support increased over time, for the bisexual group it went in the opposite direction. No group differences were found when it came to the frequency of social contacts. In terms of the social reactions survivors received to the disclosure of assault, it was seen that bisexual women dealt with significantly greater negative social reactions, which was also related to greater

PTSD and depressive symptoms. Perceived social support was found to a be a significant mediator between sexual orientation and depressive symptoms, indicating that bisexual orientation was negatively associated with perceived social support, which was ultimately negatively associated with symptoms of depression, but not of PTSD.

Conflict Zones

Sexual violence against young women in the background of wars is a well-known phenomenon which has plagued human society and is related to severe health problems in the survivors. The psychosocial impact of such conflicts and the embedded sexual assaults has been recently documented by Amone-P'Olak et al. (2015) in Uganda – a low-resource country that battled with a war spanning over two whole decades, from 1986 to 2006. The participants in this study – called the War-Affected Youth Study (WAYS) – were girls and women who had been targets of abduction by the rebels and had lived in captivity for at least 6 months. They were further classified into three categories: women who were abducted but there was no sexual violence; abducted and underwent sexual violence; and underwent sexual violence and had children as a consequence. The results showed that 65% of the formerly abducted girls had experienced sexual violence in captivity, and all the participants had high prevalence of psychosocial problems such as depression, anxiety, psychotic symptoms, conduct problems, somatic complaints, stigma, poor community relations, and decreased general functioning. While the strongest effects were found in the third group of women who now had the additional burden of caring for the children, there were significant repercussions in the first two groups as well – only abduction and only abduction with sexual violence and no children. In further analyses from the same longitudinal study, Amone-P'Olak et al. (2016) found stigma and poor community relations to be significant mediators in the association of sexual violence in this population with deteriorated general functioning. These findings add to the need for concerted international efforts to tackle the issue of sexual violence in conflict zones and to aim toward addressing stigma survivors face and facilitating community reintegration.

Research on Sexual Assault and PTSD and Depression

It has been well-established in the literature (Chen et al. 2010) that PTSD is a common ramification of sexual assault. Recent studies have sought to disentangle various mechanisms involved in this outcome. One study by Sigurvinsdottir and Ulman (2015) looked at the role of self-blame as mediator between social reactions to disclosure and problem drinking in sexual assault survivors. Characterological self-blame was found to be an important mechanism, with the authors positing that negative social reactions may exacerbate the survivor's tendency to attribute the incident to themselves and their own traits, which in turn leads them to engage in problem drinking. Ullman et al. (2014) studied the relationship between trauma history variables and current psychological symptoms (PTSD and depression). Maladaptive coping (avoidance, denial, substance use) and poor emotion regulation were found to be significant mediators in the relationship between childhood sexual abuse severity and greater PTSD and depression symptoms in a sample of adult sexual assault survivors. It was also noted that the effect of CSA on maladaptive coping and poor emotion regulation was greater in the group of women who hadn't received therapy post the adulthood assault than in the group that did.

One study in South Africa (Mbalo et al. 2017) sought to understand the risk factors for developing PTSD and depression in female survivors of rape 6 months after the assault. Data was collected from three prominent provinces of South Africa, which constitute more than 30% of the country's total population and have historically registered higher incidence of rapes – Limpopo, Western Cape, and KwaZulu-Natal (KZN). The variables taken into consideration were various sociodemographic factors, characteristics of the rape, and social support. PTSD and depression (moderate to severe) were common in the group, with 87% of the sample reporting the former and 51% the latter. It could be seen that the mental health consequences of rape are strongly associated with certain sociodemographic factors. One significant finding was that compared to married/cohabiting survivors, the unmarried group had much higher scores for depression as well as PTSD. The authors assert that being in such a relationship may have afforded these survivors with empathy and a safe space to process and work through their traumatic experiences, which may have kept the risk of developing psychopathology in check. Another significant association culled out was between unemployment and depressive symptoms. While causal links between these variables have not yet been established, it may be that the experience of rape adds a cumulative effect to the risk of developing depression in unemployed female survivors. Comparing the profiles across the three provinces, it was found that survivors in KZN were seven times more likely to have developed depression and PTSD as compared to those from the other two districts. The authors offer many explanations for this finding – such as the fact that a higher proportion of the sample from KZN had also reported CSA. Another possibility noted was that their escalated scores may not just be a reflection of the consequences suffered on account of rape but may be due to multiple traumatic experiences, given that KZN is the most populated province of South Africa, plagued by high levels of poverty and also known as the murder capital of the country. A higher proportion of survivors from this province had been raped within their own home, by a stranger, and were physically abused too, all of which may have condensed into a greater sense of being violated. It is crucial to take cognizance of the finding that the effects of sexual assault do not exist in a vacuum but rather are heavily influenced by pre-existing vulnerabilities within the individual as well in relation to their sociodemographic settings, and the post-trauma experiences the survivors undergo (Mbalo et al. 2017).

Various cognitive and emotional factors have been revealed to have a bearing on PTSD symptoms in sexual assault survivors. Specifically, one study from South Korea (Shin et al. 2014) has suggested that negative cognitive appraisals about the dangerousness of the world may play a key role in the severity as well as maintenance of PTSD symptoms over a 1-month period. Shame and guilt proneness were found to be related to the development of depressive symptoms, rather than PTSD. In this study, while the incidence of PTSD diagnosis dropped from 78.9% at the first assessment to 68% at the second assessment 1 month later, further analyses revealed that it was avoidance symptoms only that had shown significant decline between the two time points. Re-experiencing hyperarousal and depression did not show change significantly. It has also been seen that avoidance symptoms and delayed verbal memory in the initial period after the assault experience predict the severity of PTSD symptoms at follow-up 1–5 months later with a high explanatory power of 34.9% (Shin et al. 2015). One study (Müller et al. 2018) looked in-depth at the impact of the worst trauma a person may have undergone, the psychopathology that emerged, and the time taken for remission to be achieved. The type of traumatic experience was revealed to be a significant factor associated with remission of symptoms. Specifically, it was found that those who had experienced sexual trauma – whether in childhood or adulthood – were less likely to remit from their PTSD symptoms and took a longer time to reach remission, compared to people who had undergone other kinds of trauma, such as an accident or physical assault. The authors explain this finding by citing that the specific factors which are known to function as impediments in remission from PTSD are typically found to exist in individuals exposed to sexual trauma. Further analyses showed that avoidance symptoms and comorbid depression were important mediators that contributed to the delayed remission time in the PTSD subsample who had undergone sexual trauma.

Au et al. (2013) assessed the presence of PTSD and depression symptoms among a group of 119 survivors of sexual assault, at 1, 2, 3, and 4 months post-assault. Four groups of co-occurring symptoms could be identified at each time point, which represented, mild, low-moderate, high-moderate, and severe levels. The latter three groups had significantly higher scores on re-experiencing avoidance and depression, compared to the mild group. However, only hyperarousal, numbing, and overall PTSD severity reliably differentiated among all the four groups. Also, the severity of the two types of symptoms – PTSD and depression – cohered strongly in all the groups, and at no point of time could distinct groups comprising of individuals with primarily PTSD or depression symptoms be identified. Thus, the authors postulate that these symptoms of PTSD and depression point towards a general post-traumatic response, which may lie on a continuum and is associated with increasing functional impairment, rather than qualifying as strictly distinct disorders.

Mental Health Outcomes in Adult Survivors of Childhood Sexual Abuse

The effects of childhood sexual abuse (CSA) are known to extend well into adulthood. There is an abundance of research looking at current statuses of adult survivors who had undergone CSA. A wide range of domains – from mental health and self-esteem to occupational functioning, intimate relationships, and family systems – is seen to be effected in this particular population, rendering it to be a group that warrants timely intervention. One longitudinal study in New Zealand (Fergusson et al. 2013) followed a cohort from birth to the age of 30 years, assessing at 18 and 21 years for presence of CSA experiences occurring before 16 years of age. This study included survivors of both genders and analyses revealed no significant differences in outcomes for male and female participants. CSA was found to be significantly associated with numerous mental health outcomes, namely, depression, anxiety, suicidal ideations and attempts, and drug dependence during the period of 18–30 years. Those exposed to severe CSA had a 2.5 times greater likelihood of suffering from mental health problems, as opposed to participants who had no CSA experience. Increasing extent of CSA (non-contact versus contact versus penetration) was linked to increasing number of PTSD symptoms, while a decreasing trend was noticed for self-esteem, overall satisfaction with life, and quality of relationship with intimate partner. Thus, this extensive study shows the negative individual effects on various markers of psychological well-being, as well as the overall substantially adverse cumulative effects on adult developmental outcomes in adult survivors of CSA.

The deleterious effects of CSA on family outcomes in adulthood have also been expounded. In a study from Netherlands, de Jong and Bijleveld (2015) examined the adulthood status of 910 CSA survivors (73.8% females) on the variables of marriage, divorce, and children. 46.3% of the survivors had undergone CSA multiple number of times or by more than one perpetrator. A larger proportion of the survivors – 56.9% – had experienced penetration during the abuse, which was further dissected into oral, oral and genital, and oral, genital, as well as anal penetration. This study found that the occurrence of teenage parenthood was 3–12 times more likely in females who had been abused by a family member. Younger age at the time of abuse was related to lesser likelihood of the female survivors getting married. With each consecutive age group, the likelihood was seen to be increasing. On the other hand, abuse by a nuclear family member, compared to by a stranger, was related to getting married early than the Dutch cultural norm for the cohort under investigation. Similar findings were obtained for the outcome of divorce, with women who had been abused within the family showing much higher rates of their marriages not working out compared to women exposed to CSA from outside the home. The negative impact of CSA can also be fathomed by the finding that female survivors were more likely to have remained childless, compared to the average Dutch woman. The authors of this study posit that the relational setting of the abuse seemed to have had a more crucial impact on outcomes than the specific nature of the abuse incident. They assert that this may be because the survivors had possibly turned towards getting married early as a route of escape from the perpetrator at home or from a dysfunctional family overall as such. Having their trust betrayed in the formative years by people who were understood to be protectors may also have led to attachment-related difficulties. All these factors may shed light on possible mechanisms that would have led to early marriage as well as higher rates of divorce in this subgroup.

Adult psychopathology has also been studied in the context of childhood maltreatment, which comprises of but is not limited to sexual abuse. The other types of adverse childhood experiences included under this umbrella term are physical abuse and neglect. Specifically studying a sample of adult female survivors of sexual abuse in Norway, Steine et al. (2017) found a significant dose-response relationship between cumulative childhood maltreatment experiences and higher scores on all symptom outcome measures, namely, depression, anxiety, PTSD, dissociation, sleep disorders, physical and emotional pain, relationship conflicts, and non-suicidal self-harm. A dose-response relationship is elucidated as a graded relationship between the number of different types of childhood adverse experiences and the severity of subsequent mental health outcomes. A positive dose-response relation was also found for increased symptom complexity and poorer occupational functioning. Survivors were found to have lower levels of perceived social support and hardiness, which are understood as a personality style contributing to resilience in the face of stress. It may be inferred that exposure to maltreatment in the developmental years thwarts the individual's ability to develop or utilize positive social, supportive relationships, leading to lacunae in the area of social support. This was the first study reporting on the outcome measure of hardiness in such a population, and further work is warranted. However, collectively, the authors postulate that childhood maltreatment may function as a distal risk factor which works by sabotaging the development of more proximal protective factors that are crucial for health and resilience in adulthood.

Another pertinent area that bears consequences of the experience of CSA in adult survivors is that of sexual health. A recent comprehensive review by Pulverman et al. (2018) notes the high prevalence of sexual disorders in CSA survivors, with rates of these in women with CSA histories in studies using random probability samples ranging from 25% to 59%. Some of the relevant characteristics that increase the risk of sexual dysfunctions are repeated abuse, multiple abusers, use of threat or force, longer duration of abuse, and the father being the abuser. In terms of the types of sexual dysfunctions noted, the entire breadth of disorders is included – disorders of desire, arousal, orgasm, and pain – and a large proportion of women may also suffer from more than just one sexual disorder. However, dysfunctions of desire and arousal are the most common.

Research has looked at uncovering the potential pathways that may explain the high occurrence of sexual disorders in women with abuse histories, and some of the primary ones will be discussed. (1) As pointed out in this review, in terms of the cognitive associations with sex, there seem to be differences in the manner in which sexual stimuli are processed by abused and non-abused women. The findings are two-pronged. On one hand, these women are more prone to having negative interpretations of sexual stimuli. On the other hand, they are less likely to ascribe positive meanings to relevant sexual stimuli, compared to non-abused women who attributed positive valence to such stimuli. The lack of positive emotions toward sexuality, rather than the excess of negative emotions, has been highlighted as a robust mechanism explaining sexual dysfunction in these women. (2) Sexual self-schemas, which are understood as one's attitude toward the self as a sexual being and which influence processing of relevant information as well as sexual behavior, are also relevant to this psychopathology. Positive sexual self-schemas are associated with adequate sexual function. It has been found that compared to non-abused women, abused women tend to have less positive sexual self-schemas, although there was no difference in the negative counterpart of these schemas. (3) Physiologically speaking, CSA is associated with chronic elevation of the sympathetic nervous system (SNS) activity, specifically, increased heart rate and respiration, perspiration, muscle tension, exaggerated startle response, and sleep difficulties. Sexual arousal is also related to an increase in SNS activity, an optimal level of which is conducive to genital sexual arousal. The authors postulate that since these women tend to have elevated SNS activity at the baseline level itself, the further increase that occurs naturally during sexual arousal may push the SNS activation beyond the optimal window, leading to impairment in sexual function. (4) Body image or esteem is described as the cognitive and emotional appraisals one makes of one's own body, which is influenced by individual experiences and experiences of socialization. A positive body image is associated with better sexual function, whereas negative appraisals, especially during the sexual activity, diminish sexual function. Abused women are more prone to having negative body image compared to non-abused peers, especially on the sexual attractiveness domain of body image. Poor body image has been found to moderate the relation between abuse histories and decreased sexual excitation. The genesis of such a body image seems to lie in the fact that the experience of abuse in childhood may have led to the individual associating the body with the abuse, leading to the formation of negative appraisals that persist well into adulthood. (5) Negative emotions in response to the CSA – shame and self-blame – are potent predictors of sexual difficulties, over and above the effect of abuse severity. This indicates that the emotional reactions to the abuse may play a greater role in the development of sexual problems than the characteristics of the abuse itself.

Theories Explaining Mental Health Consequences

To understand the association between sexual assault and mental health outcomes, there have been frameworks proposed that delineate the impact of sexual violence on mental health. These ecological frameworks can be broadly defined under two different approaches, one from developmental psychology and the other from community psychology (Campbell et al. 2009). Many of the frameworks from developmental psychology stem from the ecological theory of human development set forward by Bronfenbrenner (Bronfenbrenner 1986, 1995, 1996). This theory posits that human beings develop through continual interactions with their environment, which is divided into the individual, the microsystem, the mesosystem, the exosystem, the macrosystem, and chronosystem. The individual refers to the characteristics of the person, whether psychological, social, or biological. The microsystem comprises of the person's immediate environment, usually family and friends, while the mesosystem broadens to connections not only with individuals but also with surrounding systems. The exosystem includes organizations and systems such as the legal or medical system, and the macrosystem refers to norms and beliefs perpetuated by society. Finally, the chronosystem brings these different levels together to capture the changes in interactions over time between the person and their environment. Frameworks from community psychology, on the other hand, do recognize interactions between persons and their community but restrict the levels to the individual, events, and the environment (Kelly 1966, 1971, 2006). In this approach, the individual is similar to that described in developmental psychology, events describe seeking help for specific problems, which then leads to a community network response, and the environment refers to the social norms and resources (Kelly 1966, 1971, 2006).

Through these two approaches, it is clear how an act of sexual violence can work through interactions between a person and their environment to impact mental health outcomes. For example, a person may have individual characteristics that make them vulnerable (such as younger age or gender) or resilient (e.g., high socioeconomic status or profession). These characteristics could explain why some people have different mental health outcomes from others despite having identical external environments, social support, and access to resources. Similarly, two people with comparable individual characteristics might have opposing mental health outcomes due to differing social networks or available legal and medical resources. These frameworks also provide partial rationale for why specific groups of people experience higher risk for sexual violence and subsequently poor mental health outcomes. For example, it is possible to understand how the LGBTQ community may be at higher risk for mental health consequences. As a marginalized community, their connection with higher levels, such as the mesosystem and exosystem, may not be as strong as for those in the majority of a society.

Women living in patriarchal societies are at higher risk for sexual violence. Considering this in the context of the developmental psychology framework, women living in patriarchal societies are vulnerable in terms of individual characteristics (gender), the microsystem, where often people from the woman's social circle may be the perpetrators of violence, and the exosystem, where the police or governing authorities may not believe or act on claims of violence. For instance, in the United States, women make up a minority of the armed forces at just 16% of enlisted forces and can be considered to work in a patriarchal environment (Reynolds and Shendruk 2018). A study on women veterans in the United States found that approximately 25% reported sexual trauma while on active duty (Skinner et al. 2000). In another study among women veterans who experienced military sexual trauma and were seeking help from a trauma recovery center, 43% reported having suicidal thoughts in the last month, and PTSD and depression were also clinically correlated (Kelly et al. 2011). Women in these environments may have higher proportions of mental health disorders potentially because of their individual characteristics (gender), microsystem, others in the armed services or officers to whom sexual crimes could be reported to, and exosystem, the military court system.

Mental Health Interventions

Thinking upstream, more and more research has been published on interventions to prevent sexual violence and its mental health consequences. Universal intimate partner violence screening is one method that has been gaining recognition as a preventative measure, though it is controversial (Ghandour et al. 2015). In a recommendation put forth in the proceedings from a research symposium on intimate partner violence, the authors explain that the Affordable Care Act, a law that allowed for greater access to health insurance in the United States, provided a useful opportunity to systematically conduct screenings during physical checkups (Ghandour et al. 2015). Such screenings could allow for early intervention for those who would have been identified as having experienced sexual violence and may need mental health care. In another attempt to combat sexual violence, on some university campuses, students are being taught bystander interventions, whereby third-party individuals can intervene to prevent non-consensual sexual acts (McMahon and Banyard 2012). However, ultimately sexual violence and its resulting effects will not be abolished until prevention is successful among perpetrators. There have been a number of different attempts of engaging with perpetrators, including addressing gender norms and dynamics, mentorship programs between non-violent and violent individuals, and lecture or classroom-based educational seminars (Jewkes et al. 2015).

Insofar as intervention with sexual assault survivors is concerned, in an endeavor to include the voices of the survivors themselves, one recent study (Gagnon et al. 2018) conducted 678 open-ended interviews with 224 participants and asked for recommendations on how service providers (justice and community-based providers) could improve their practices, so as to cater better to the needs of survivors. Six common recommendations offered were as follows: (1) ensuring that a female provider is available; (2) improving communication with the survivors, as also within and between the various stakeholder departments; (3) providing information on obtaining resources, helping with the same; (4) not blaming but believing their experiences; (5) exhibiting greater sensitivity, care, and compassion and having knowledge of trauma-related responses; and (6) implementing better training with providers on how to effectively work with survivors. Many recounted experiences wherein since they hadn’t been crying, the providers deemed it to mean that nothing had transpired, and the survivors were fabricating stories. Such occurrences conglomerated in the form of one of the recommendations, that of providers being trained better so as to understand and handle more effectively the diverse plethora of trauma-related responses.

One of the most commonly occurring consequences of sexual assault has been established to be PTSD, as discussed in the preceding sections. The onset, development, and maintenance of this disorder have roots in both biological and psychological-social factors, and research has shown that interventions emanating from both these areas are potentially effective in curtailing the development of PTSD. Lancaster et al. (2016) in their review summarize the evidence-based psychological and pharmacological treatments for PTSD, the former of which will be presented here.

1. Exposure-Based Interventions: One of the most scientifically supported interventions belonging to this category of interventions is prolonged exposure (PE) therapy. Based on a protocol of 8–15 weekly or bi-weekly 60–90 min sessions, this treatment – originating from the tradition of behaviorism – begins with teaching of breathing relaxation techniques and psycho-education about the factors, such as avoidance of the traumatic memory and of triggers, involved in the development and maintenance of PTSD. In the subsequent sessions, imaginal exposure is undertaken, which involves the patient revisiting and narrating the trauma memory aloud for a prolonged period of time (30–45 min), so as to aid in the gradual extinguishing of the fear response that had come to be associated with the memory. Over time, in vivo exposure is also included, wherein the patient is taught and guided to approach again situations that are safe but have come to be related to the trauma and have been avoided because they remind her of the trauma. PE is supported in literature, with 1 meta-analysis that included 13 studies showing it to have large effect sizes compared to control group at termination of therapy and medium-large effect sizes further during follow-up assessments.
2. Cognitive-Based Therapies: While PE primarily is based on the foundation of behavioral principles, although it also brings about cognitive changes, cognitive processing therapy (CPT) is another treatment modality that primarily intervenes at the level of maladaptive thinking patterns directly. It is a 12-session protocol that also starts with psycho-education about the various potential maintaining factors. This is followed by the patient writing an in-depth impact statement of the trauma, detailing how the incident has affected them and their worldviews, particularly their beliefs about self, others, and the world. This is read aloud and discussed with the therapist, who identifies possible maladaptive thoughts that may be keeping the patient stuck. The patient is facilitated to discover overgeneralized or unhelpful thoughts, and strategies are developed to replace these with more accurate as well as useful thoughts that contribute to recovery. Additionally, the patients are also required to write down detailed accounts of the trauma and read it out aloud. Specific attention is also paid to investigate the harmful effects of maladaptive thinking patterns in relevant areas such as those of safety, trust, power, intimacy, and esteem. The effects of the treatment at termination are gauged from the new impact statement that the patient is required to write again. Clinical trials have found CPT to be more effective than wait-list conditions and equally effective as PE. Moreover, patients with high dissociation, particularly depersonalization, have been seen to respond better to the full protocol of CPT, while those with less dissociation improve rapidly without using the technique of written trauma accounts.
3. Eye Movement Desensitization and Reprocessing: Similar to cognitive-behavioral therapies, EMDR too attributes PTSD to insufficient processing of the trauma memories, leading these memories to be stored in their initial states, preserving along with it any misperceptions or distorted cognitions that may have occurred at the time of the traumatic event. The first leg of this treatment involves training the patients in effective handling of negative emotions. This is followed by the "reprocessing" phase, which is based on the patient making

certain lists, that of, traumatic experiences, distorted beliefs related to those experiences (“I am a failure”), and desired beliefs that they would like to have (“I can handle tough situations”). The patient is made to bring to mind each of the traumatic experiences in vivid visual details, along with the accompanying distorted belief. This constitutes cognitive exposure, which is followed by interoceptive exposure as the patient then focuses on the physical sensations related to the traumatic memory. The patient is then required to make bilateral eye movements, following the therapist’s finger oscillating from right to left while simultaneously visualizing the memory. This cycle is repeated multiple times, with exploration of the various thoughts, images, emotions, and sensations experienced by the patient. Finally, the patient participates in thinking the desired thought while holding in mind the visual image of the trauma. The use of bilateral eye movements has been controversial, with some research supporting its potential of contributing to PTSD treatment by reducing distress and by corollary, the avoidance associated with the memories, while other research demonstrates that the EMDR protocol is effective even without the eye movement component. Irrespective of the veracity of its theoretical underpinnings, what has been seen in research is that EMDR is as effective in the treatment of PTSD as the more conventional exposure and cognitive-behavioral therapies.

4. Relaxation-Based Psychotherapies: These are the most scantily researched and supported out of psychological therapies for PTSD. However, stress inoculation training (SIT) is one form of intervention belonging to this category that has been found to be more effective than wait-list and supportive counselling, though less effective than prolonged exposure (Parcesepe et al. 2015). The goal in SIT is to enhance the patients’ control and mastery of their anxiety, which is understood as hampering their ability to cope with situational demands. It also seeks to make the patient immune – “inoculate” to future episodes of increased and pervasive anxiety/stress. To this effect, this treatment trains the patient in various anxiety management techniques, such as breathing retraining, muscle relaxation, thought stopping, and restructuring of maladaptive cognitions. As the treatment progresses, these skills are applied and practiced in the context of increasingly daunting anxiety-provoking situations, using graduated exposure – in vivo as well as situational.

More recently, the APA (2017) in its clinical practice guidelines provided recommendations on effective psychotherapies for PTSD in adults. Cognitive behavior therapy (CBT), cognitive processing therapy (CPT), cognitive therapy (CT), and prolonged exposure (PE) therapy were classified under the category of “strongly recommended” treatments, as per the guidelines developed. The treatments that were “suggested” or “conditionally recommended” were brief eclectic psychotherapy, eye movement desensitization and reprocessing (EMDR), and narrative exposure therapy (NET).

Narrative exposure therapy (NET) is based on the premise that traumatic memory representations are at the core of the PTSD constellation of symptoms and that putting together the fragmented pieces of traumatic experiences’ memories into a coherent narrative engenders improvement and recovery (Elbert et al. 2015). This process commences in therapy with the client constructing a chronological narrative of their life, with specific focus on traumatic experiences. While narrating their story, the client is asked many questions with regard to the sensations, cognitions, physiological, and affective responses they are experiencing in the moment. These responses are repeatedly connected to the activation of the traumatic memories, which the therapist attempts to connect to episodic, objective facts, such as the time and place, of the occurrence of the experience. The goal is that the generalization of the traumatic memory representations is circumvented, and the client remembers the event in the context in which it occurred, in terms of its particular time and space. The imagined exposure to the traumatic event is continued till there is substantial decrease in the related affect being demonstrated by the client, especially the affect of fear.

Apart from these well-evidenced psychotherapies, new advances are also being made, and new avenues explored. Cukor et al. (2010) summarize alternative forms of treatment – psychological as well as pharmacological – that, although not yet having sufficient evidence, do come across as robust in their rationale and have a sprouting evidence base. Some such emerging psychotherapies are couples and family therapy and interpersonal psychotherapy. Given that PTSD frequently has deleterious effects on marital and family relations and on other aspects of social functioning, these therapies with a relational/interpersonal focus may prove to be important options for adequate treatment.

Apart from the traditional systems of service delivery in psychotherapy, researchers are also experimenting with using technology to their advantage by devising online-based programs for rape survivors. Littleton et al. (2016) conducted one such RCT and vouched that the online medium may be particularly relevant for this population as adequate help seldom reaches them, with stigma, among other factors, acting as a barrier in them initiating help-seeking. The program they created was a therapist-facilitated online CBT program that was tailor-made for this population. The sample consisted of college women, a group generally known to be high on computer literacy and comfort, diagnosed with rape-related PTSD. It was compared with another group that received the benefit of a self-help psycho-educational website. The online program was found to be efficacious in reducing PTSD symptoms, with patients showing maintenance or even further improvement at follow-up 3 months later. The other group which had used the self-help psycho-educational website too showed similar improvements. Further moderator analyses revealed that the website was superior for patients who had lower levels of PTSD symptoms at pre-treatment, while the online CBT program fetched better results for those who had higher levels of these symptoms. Thus, this study provides an advance that may be worthy of further exploration with more diverse groups of sexual assault survivors.

A recent meta-analysis by Kline et al. (2018) found evidence for the long-term effectiveness for acute-phase psychotherapy for PTSD. While all the commonly practiced psychotherapies for PTSD were found to be effective at maintaining the symptom reduction achieved in treatment, exposure-based therapies had larger effect sizes compared to other therapies when looking specifically at the period from termination of therapy to follow-up assessments which were minimum 6 months later. Focusing exclusively on studying the effectiveness of psychological interventions in females who had undergone sexual assault in adulthood, Parcesepe et al. (2015) in their systematic review found fairly encouraging results to support its effects. While the review included only nine studies, in accordance with their strict study selection criteria, seven of these were randomized controlled trials (RCTs). Compared to no treatment, psychological interventions were found to be effective, with seven different treatments associated with significantly higher number of reduction in participants having PTSD diagnosis, symptoms, and/or symptom severity. These seven treatments were prolonged exposure therapy, cognitive processing therapy, eye movement desensitization and reprocessing therapy, stress inoculation training, assertion training, clinician-assisted emotional disclosure, and supportive psychotherapy plus information. However, the authors did not find one form of intervention to be significantly more effective than the other. Additionally, long-term follow-ups were conducted only with PE and CPT, and these were associated with improvement up to 6 years later. Most of the intervention studies examined the outcome of PTSD. However, few studies with respect to depressive symptoms found CPT and EMDR to be efficacious, while anxiety symptoms responded well to assertion training and supportive psychotherapy plus information. Supportive counselling alone was not found to be effective for any of the three outcomes – PTSD, depressive symptoms, and anxiety symptoms. The efficacy of psychological treatments in alleviating PTSD among adult survivors of CSA has also been established in a recent meta-analysis (Ehring et al. 2014). Moderate to high effect sizes were found for all treatment methods studied – CBT, trauma-focused CBT, EMDR, interpersonal psychotherapy, and emotionally focused therapy (EFT). It could also be seen that in terms of modality, individually provided psychotherapy sessions or combined ones fared better than group treatment as stand-alone. Also, trauma-focused CBT provided better results than regular CBT, adding further weight to the premise of trauma-related memories being a significant facet of PTSD in this population.

Thus, findings from meta-analyses overall have been quite encouraging in terms of illustrating the potential of psychotherapies in treatment of the population of sexual assault survivors. Skeptical about successful generalizability of these RCT findings in routine clinical services, Ehlers et al. (2013) conducted a study to test the implementation of cognitive therapy for PTSD in an out-patient clinic in the United Kingdom. The sample consisted of an ethnically diverse population who were dealing with different types of trauma. The treatment was found to be acceptable to the patients and brought about significant improvement in PTSD, depression, and anxiety symptoms which was maintained at follow-up.

Future Research

While substantial amount of research has focused on the effects of sexual violence on mental health, many gaps in the literature still exist. There is a lack of longitudinal data on which cohort or prospective studies can be conducted. This type of data is especially important in order to distinguish specifically a causal relationship between sexual violence and mental health repercussions. Further, longitudinal data can be useful when looking for particularly sensitive periods for manifestation of the effects of sexual violence, and mediators, and moderators. For example, exposure to acts of sexual violence during childhood perhaps leads to different effects on mental health than sexual violence later in life. Furthermore, more concerted efforts need to be made to collect nationally representative data from various countries. This data can be particularly useful for creating and implementing policies and programs to comprehensively involve different stakeholders to prevent sexual violence or provide treatment for sexual violence survivors. Nationally representative data can also be used to compare geographic regions within a country and find vulnerable subpopulations that need targeted interventions. With more countries opting for nationalized or affordable health-care options, especially in high-income countries, nationally representative data can also be used to allocate resources for providing universal screenings for mental health generally and mental health consequences of sexual violence (Ghandour et al. 2015). It is equally imperative, however, to plan rigorous qualitative studies on sexual assault to understand contextual factors and subjective experiences of survivors. Much of the literature focuses on women and heterosexual relationships. Hence, further research ought to focus on male survivors, same-sex relationships, and bidirectional forms of violence as well.

Conclusion

Sexual assault is associated with a range of acute and long-term mental health ramifications. As a social issue that disrupts the well-being of not only survivors but also their families and society at large, it is crucial that the approach to alleviating it and allaying its effects is multipronged. Concerted efforts from various stakeholders are essential for sensitive assessment and evaluation, care and treatment, and prevention. It is necessary to take steps to better educate and sensitize service providers working with this distressed population as it is imperative that they demonstrate adequate empathy and compassion toward the survivors. While research attention has focused primarily on descriptive and contextual factors and correlates, there is a need for evidence-based research on psychological interventions and treatment of mental health sequelae among survivors of sexual assault. In particular, trauma-focused psychological interventions for complex PTSD and personality pathology are important. While sexual assault is a global concern, it is important to take cognizance of the intertwined socio-cultural-political background unique to each region and, hence, needs to be understood in that context. Programs and policies that safeguard human rights and ensure safety are critical to be developed and executed globally.

Cross-References

- ▶ Challenges in Women’s Mental Health: Care in Conflict and Post-Conflict Situations
- ▶ Depression, Anxiety, and Physical Morbidity in Women

- ▶ Evidence-Based Interventions for Mental Health Consequences of Intimate Partner Violence
- ▶ Interpersonal Violence and Perinatal Mental Health

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Women Offending in the 21st Century

16

Is Orange Really the New Black?

C. M. Klier and P. Fernandez Arias

Contents

Abstract

Research on female offending, however limited, continues to show that women are responsible for less crime than men, yet the question of whether women, and girls, are becoming increasingly violent looms large. The concern with female behavior can be interpreted as either a real concern with the small increase in

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_25

female perpetrated crime or rather hyperawareness due to women's increased levels of autonomy and participation in civil society. While there is some research done in the Global South, the debate on female criminality has been conceptualized from the studies produced in Europe, the USA, Canada, and Australia. This chapter will attempt to shed some light into the study of women offenders done in Latin America and explore if there are any similarities with the knowledge base of the North. As far as comparisons go, an important commonality is that women offenders remain an appendix to most of the research on criminality that is carried out. In Latin America, women offenders are even less likely to feature in research and the focus of what has been done so far continues to be shaped by ideas imported from the North.

Keywords
Women · Offending · Women offenders · Criminality · Latin America

Introduction

Despite the fact that the single most common finding within the field of female criminality is that women are responsible for far less crime than men (Gelsthorpe 2004), the question of whether women, and girls, are becoming increasingly violent looms large within the field (Chesney-Lind and Paramore 2001; Pollock and Davis 2005) and within popular culture. This concern with female behavior has been noted by some academics who argue that the increase in perceptions of female violence or criminality are more the product of hyperawareness due to women's increased levels of autonomy and participation in civil society than real disproportionate spikes in the global rates (Winfree and DeJong 2015).

This existential crisis can also be linked to the origins of the study of women offenders. The research of female criminality can trace its roots to the work carried out by Lombroso and Ferrero in the late nineteenth century (Smart 2013). Their brand of positivism reduced female criminal behavior to nothing more than the natural consequence of women being less evolved than their male counterparts and created a field of study that was dominated by a biomedical model that was the purview of (male) medical and psychological professionals. Lombroso and Ferrero, as Smart (2013: 69) argues, created "an ideological framework" within which most of the work on female criminality has been carried out.

While we have done away with notions of biological determinism, the question of why women break the law, even if they do so disproportionally less than men, remains unanswered. Or rather, the cacophony of answers amounts to no answer at all. A cursory glance at the literature reveals a varying array of possible explanations that range from more progressive versions of the positivist stance to contemporary moral panic cries about the rise in violent crimes perpetrated by women. Even within the generous word count of this chapter, it would not be possible to account for all them, so rather than try and disappoint, this chapter aims to explore what the differences are between the research produced within wealthy Western developed nations and the one produced in Latin America.

It goes without saying that most, if not all, of the research carried out on women offenders has been done in developed nations. Asia, Africa, and the Middle East generate small amounts of research, an example of which is the ground-breaking work, predominantly out of South Africa, looking at child homicides (filicide and neonaticide) and female offending that reveal serious structural issues that can be linked to higher rates of filicide and neonaticide (see, for example, Abrahams et al. 2016; Mathews et al. 2013; Outwater et al. 2010; Prinsloo et al. 2012). Or the work done by Eke et al. (2015) looking at maternal filicide in Turkey which revealed that while the two most common motives were unwanted child and acute psychotic-type filicide, appropriate bonding between mother and child may be a protective factor for maternal filicide.

Whatever the differences we see between north and south, there is still a powerful cultural element that ties them: the Catholic church. Regardless of the level of real – or imagined – influence that the church might exert in different jurisdictions, its role as one of the foundational cultural pillars of nations ranging from France to Peru cannot be denied (Bogdanova et al. 2017; Di Stefano and Ramón Solans 2016). The importation, and often brutal imposition, of Christianity to the new territories was a central feature of the colonial project (Teutonico 2017) and is a link that remains to this day however tenuous. Although there is research done in the Global South, the debate on female criminality has been conceptualized from the studies produced in Europe, the USA, Canada, and Australia. This chapter will attempt to shed some light into the study of women offenders done in the Global South – with a focus on Latin America – and explore if there are any similarities with the knowledge base of the North.

Early Work on Women Offenders

Even though the study of female criminality began in the murky waters of positivism, social Darwinism, and biological determinism, it is safe to say that research has moved away from these questionable origins. What we have not moved away from is the idea that the study of criminality, in general, and female criminality, in particular, will yield new and improved mechanisms for intervention. The underlying assumption of such an aspiration is that criminals, and specifically female offenders, can be more effectively monitored and controlled – as opposed to aided and assisted with the challenges they face. This added to the recent push towards the privatization of prison and prison services (Lindsey et al. 2016; Ramirez 2015) as well as the rise of the "get tough on crime" narrative, call into question the premises on which the study of criminality has been built.

Carol Smart (2013) provides a comprehensive account of the early work that established the field of female criminality. In her review of classical studies of female criminality, she posits that the most significant studies were the ones conducted by Smart (2013: 56). As noted above, Lombroso and Ferrero's studies on crime posited that deviants were less highly evolved than their nondeviant counterparts. It was in this spirit that Lombroso and Ferrero measured craniums and counted tattoos on women who had been imprisoned only to conclude that women offenders have fewer signs of degeneration because they were less evolved than noncriminal males (Smart 2013: 63).

Thomas' work moved into the realm of the social (Smart 2013). His studies concluded that offenders were less well socialized due to being raised in deficient families or communities and that the cure for deviance was the removal of deviancy-prone youngsters into institutions that could better care for them and teach them moral values. In effect, what Thomas was advocating was almost unchecked state intervention in the lives of private citizens. Pollak is, arguably, a marriage of both the principles of biological determinism and the influence of the social factors (Smart 2013: 82). His main concern, however, was the "masked" nature of women's offending, i.e., that the real prevalence of female criminality was much larger than the perceived prevalence due to women being both cunning and protected by the private sphere of the home.

To contextualize, at the time in which the field of criminology was taking shape, the predominant theory was Darwin's evolutionary biological theory. Darwin's principles were transposed onto other research areas and the emerging field of human behavior embraced these principles. Smart argues that the unabashed adoption of biology as the gold standard for research led to popularization of biological and psychological determinism and excluded the possibility of self-determination. This in turn legitimizes the implementation of new social control mechanisms and further entrenches prescriptive social norms (Smart 2013: 59).

Feminist Critiques

It was not until feminist scholars began to critique the way in which research on women offenders was being conducted that a change in the way female criminality was researched came about. Feminist scholars argued that most of the research on women offenders fundamentally ignored the fact that the research subjects were women and that women experience different types of oppression within society. As Burton et al. (1998: 125) note "traditional male-centers theories have ignored the role pf patriarchal power relations in society and how these [. . .] shape the involvement of gender groups in crime (and victimization)."

Perhaps the most important contribution that feminist scholarship made was the creation of a pathway theory that helped explain female offending. The idea that women are subjected to gender-specific forces that determine their trajectory into crime is an important contribution to the study of women's offending. This is all the more relevant when the small numbers of women who offend, compared to men, is taken into consideration. Despite this, more research needs to be done especially regarding the different cultural- and country-specific contexts within which women in non-European or North American settings commit crimes.

Are Women Just as Violent as Men?

Though there has been considerable attention given to this topic, it is, of yet, not possible to argue that women are either already as violent or becoming just as violent as men. The reality is that, globally, the absolute numbers of women and men who commit crimes are not the same. Historically, men have committed the majority of crimes – violent or otherwise – and this trend shows no sign of abating.

Pollock and Davis (2005) examine the idea of the violent female offender and offer an explanation to this persistent – and seemingly recurrent – trend in the research. They argue that researchers who wish to prove that women are more violent now, compared to the past, often use one of five strategies:

1. Argue against the proposition that women aren't violent at all and then show examples of violent women.
2. Argue aggression rather than violence and expand the definition to include a wide variety of acts; then, when prevalence is established, switch back to the term violence.
3. Use a small sample of violent women and then bootstrap the characteristics of these women to discuss violence as a problem among all women and imply that these women are a new phenomenon as opposed to recognizing that there have always been a small number of very violent women.
4. Use percentage increases to show that women are becoming more violent even though the percentage of total numbers show hardly any increase at all in homicide and robbery.
5. Ignore that system response (definitions and arrest policies) is a dynamic factor that influences arrest rates (Pollock and Davis 2005: 6).

Pollock and Davis make a compelling case, their concern over the recurrence and persistence of this panic over women offenders lies with the impact it has on public policy drives and decision-making processes. Schroedel and Peretz (1994) present an interesting example of this by looking at the impact of the 1990s policies designed to identify and prosecute women who were pregnant drug users in the USA. They argue that this legislative push diminished the funding for drug services and generally made pregnant women targets for heightened policing. It also meant that the focus was shifted away from violent male partners who represented a more real and actual risk for pregnant women (Schroedel and Peretz 1994). It is also impossible to ignore the fact that women's incarceration rates have increased at rates higher than those of men, an increase that is even more striking when these are broken down by age and race (Campbell et al. 2015; Thompson 2010).

In terms of violent female perpetrators, the research remains limited arguably due to the numbers being small, relative to violent males, and because female violence continues to be taboo (Weizmann-Henelius et al. 2003). Despite this, researchers have looked at the case of female homicide to explore the conditions under which women kill (Hellen et al. 2015; Putkonen et al. 2001; Weizmann-Henelius et al. 2003). Recent studies agree that when women kill, they do so in the context of self-defense, intimate partner violence, or because of mental illness and that these women tend to have a history of drug and alcohol dependence (Flynn et al. 2011: 368; Hellen et al. 2015: 26). In their psychosocial analysis of ten homicide cases committed by women in Germany, Hellen et al. (2015) note that while the number of women being prosecuted for all crimes has risen, the proportion of female perpetrated homicides has slightly decreased since the 1970s. The women in this study were often isolated and socioeconomically disadvantaged, had experienced domestic violence, and were the sole carers of children or elderly parents (Hellen et al. 2015).

Studies such as the one conducted by Yourstone et al. (2008) look at the psychosocial background of women convicted of homicide in Sweden. The authors hypothesized that females perpetrators would exhibit less aggressive, antisocial traits in childhood, and that they would be more psychosocially aggravated compared to male perpetrators of similar characteristics (Yourstone et al. 2008: 376). Their results showed that there were many remarkable differences between the psychosocial backgrounds of the men and women in their study. They found that women did in fact show less antisocial aggressive behavior compared to the men, supporting the idea that even in a country such as Sweden traditional notions of femininity continue to shape female behavior. They also found evidence to support the hypothesis that women would be more psychosocially aggravated, they were sexually abused, had mental health issues during childhood, and had been exposed to physical and psychological abuse (Yourstone et al. 2008).

Yourstone et al. (2008: 381) also found evidence that female perpetrators had been subjected to violence, had been threatened, and were significantly more often physically abused by the victim before the actual crime. These findings support research that shows that women who commit homicide often do so as self-defense. Richard-Devantoy et al. (2016) conducted a retrospective analysis on expert reports for 210 homicide cases in Angers, France, between 1985 and 2005, they compared men and women and looked for the presence of major mental disorders. In total, there were 57 women who had been convicted of homicide and of these 10 were found with a major mental disorder (Richard-Devantoy et al. 2016).

In terms of young female offenders, research also points to the increase in young women coming into contact with the criminal justice system (Chesney-Lind and Sheldon 2014). This would likely translate into an increase in female violence and offending yet there is limited evidence to support this logic. Oudekerk et al. (2012) in their longitudinal study of self-reported offending in female offending youth (141 incarcerated girls between the ages of 13 to 19, interviewed in three waves from 2005 to 2009) found that the most violent girls do not become the most violent women but rather the most delinquent girls continued on to become the most delinquent women.

Sex-Specific Crimes: The Case of Neonaticide

There is only one crime that is arguably the exclusive domain of women: neonaticide. Due to the physiological requirements of pregnancy, there are almost no recorded cases of neonaticide that involve men. Given the way that neonaticide, the killing of a newborn in the first 24 hours of life, ensues it is also a difficult crime to identify and an even harder one to research (Klier et al. 2013; Putkonen et al. 2007a; Tanaka et al. 2017). Despite these challenges, there have been some studies that have provided insight into the preconditions for neonaticide.

Amon et al. (2012), in line with previous research, in their register-based study of neonaticides in Austria and Finland identified that women who commit neonaticide are often young, a considerable proportion report major trauma – either sexual or otherwise – in childhood and adulthood, are faced with structural disadvantages such as unemployment or lack of appropriate housing, and conceal or are unaware of their pregnancy. This unawareness extends to their surrounding social circle and is the most important risk factor for neonaticide (Amon et al. 2012). Similarly, Putkonen et al. (2016) in their new classification of filicide found that infanticidal mothers were a group of its own; all the offenders were women, they were the youngest within the entire sample of filicidal perpetrators, and they had no previous contact with the authorities.

The link between neonaticide and mental health issues is a contentious one. While the link would be an expected one, the rates of neonaticidal women who were diagnosed with a mental health problem was found to be low (Amon et al. 2012; Friedman and Resnick 2009). The literature, however, points to the presence of high levels of unresolved childhood trauma, sometimes compounded by ongoing adult revictimization, and high rates of personality disorders (Putkonen et al. 2007a, b).

Neonaticide is also a separate phenomenon in terms of the legal framework used to prosecute this crime. Some jurisdictions consider this a separate kind of homicide which usually carries less harsher sentences or commutes prison for mental health orders. Flynn et al. (2007) identified more than 20 countries with neonaticide legislation that applies exclusively to women. However, even within the countries that consider neonaticide a separate crime, factors such as public outrage and the circumstances of the crime can impact on outcomes (Gurevich 2008). The assumption underlying the special status of neonaticide in legislation is the state of emergency induced by a delivery – especially one that was not expected – which applies to women only.

Victimization and the Rise in Female Criminality

Hedderman notes that “the percentage of women imprisoned for virtually every type of offence has increased” (2004: 92). While the absolute numbers of women who have been incarcerated has risen, it is not entirely possible to attribute this to a rise in female criminality. The situational factors of female criminality need to be explored. Studies conducted in the USA highlighted the role of trauma as a precursor for crime in women. For example, DeHart et al. (2014) conducted a mix methods study looking at the life history models of 115 incarcerated women from five US states. At the time of their study, women comprised 13% of the total prison population in the USA. They found that a clear majority of the women (85%) met diagnostic criteria for a lifetime of substance use or dependence, 51% suffered from PTSD, and 50% of them met the diagnostic criteria for at least one form of serious mental illness such as major depression or psychotic spectrum disorders (DeHart et al. 2014: 143). They also found that 86% of the women had experienced sexual violence with rates being especially high for sexual abuse before the age of 16 (DeHart et al. 2014).

Lynch et al. (2017) aimed to examine the extent to which histories of childhood victimization and adversity, adult victimization, mental illness, and substance abuse were linked to women's offending. They conducted structured diagnostic interviews with 491 women in rural and urban jails in four regions of the USA. The women in this study reported a widespread range of interpersonal violence throughout their lifetime in the form of abuse (47% childhood sexual abuse, 45% adult sexual abuse, 40% childhood physical abuse) and exposure to violence (68% child witness to violence, 61% adult witness to violence, 67% partner violence, and 38% violence from a stranger). The women also reported a considerable number of experiences of corruption by adults in their childhood, for example, 13% reported caregivers providing drugs before the age of 16, 30% reported caregivers providing alcohol prior to age 16, and 4% reported caregivers asking them to sell drugs prior to age 16 (Lynch et al. 2017: 806).

This study also found that the majority of the women met the DSM-IV diagnostic criteria for at least one mental health issue and 43% of the women met the criteria for a lifetime serious mental illness (Lynch et al. 2017). A noteworthy aspect of this study is the finding that over half of the women reported having spoken to a medical doctor or mental health professional about their condition. Lynch et al. (2017: 810) found that more experiences of childhood victimization and adversity alongside cumulative experiences of adult victimization were precursors for poor mental health outcomes and substance abuse disorders and that these, in turn, significantly predicted a greater number of imprisonment periods for women.

What both studies are suggesting is there seems to be a pathway that begins with childhood victimization that leads to poor long term mental health outcomes, which end with women in prison. Hypotheses such as these ones are not new, previous research looking at pathways to crime have identified the links between victimization, serious mental health issues, drug use, and crime (Becker et al. 2011; Belknap and Holsinger 2006; Browne et al. 1999; Grella et al. 2005; Lynch et al. 2014; Lynch et al. 2012; Scott et al. 2016).

It would seem reasonable to assume that if more women were committing more crimes, then there would be a clear spike in the global trends of arrest, prosecution, and incarceration. As previously stated, the picture in terms of the global trends is unclear and other than identifying that there are more women in prison now than ever before it is difficult to make absolute statements in relation to female offending. One way of attempting to clarify the picture is to look at transnational data; the following section will examine the publicly available data from the United Nations Office on Drugs and Crime (UNODC).

UNODC: A Clearer Picture?

Obtaining accurate data on the numbers of women who commit crimes is not an easy task, there are limitations in relation to self-reported data, and some authors argue that crime statistics do not reflect the reality of the situation but only what gets reported or those that get caught (similar to the issue with domestic violence rates where most scholars agree that there is more violence than is reported). The following section briefly reviews data compiled and made publicly available by the UNODC through their statistics portal (United Nation Office on Drugs and Crime 2018). The data shown in this section is descriptive only, it will be divided in regions as per the UNODC standards and, where possible, will be presented from 2005 onwards. All definitions are UNODC definitions.

Despite the comprehensive nature of the data available, there are limitations that need to be taken into consideration. The data is supplied to the UNODC by the countries in the database hence there is no standardized definition across countries, changes in local legislation may impact what data is provided and how it is categorized, the data on drugs is submitted through UNODC questionnaires, and the data on crime and criminal justice is supplied through UNODC annual surveys (United Nation Office on Drugs and Crime 2018). Despite these limitations, the UNODC data does shed light into some interesting features of current global crime trends.

Overwhelmingly women are at a higher risk than men of being the victims of intimate partner violence, these deaths are evenly distributed around the globe, and the numbers of women that die in this context is “remarkably stable at the global level” (United Nations Office on Drugs and Crime 2013: 13). However, it is known that women do kill thus making the question of how often or to what degree they kill a relevant one. The UNODC defines intentional homicide. as the “unlawful death inflicted upon a person with the intent to cause death or serious injury” (United Nation Office on Drugs and Crime 2018).

Within the Latin American context, the percentage of intentional deaths caused by women remains almost entirely under 20%. A possible reading of this data is that most homicides committed by women, in Latin America, are unintentional. This is a striking difference to the intentional deaths caused by men, in the same region, which remain squarely over 75% (refer to Fig. 1). It is also different to the European context where the percentage of intentional deaths carried out by women, during the same period, ranges between 20% and 50% (United Nation Office on Drugs and Crime 2018). In other words, of all the recorded homicides in Europe, women who kill would apparently do so with more intentionality than women in Latin America. Even when this regional difference is taken into consideration, the idea that women are become as violent as men is not supported by the percentages of intentional homicide reported by the UNODC.

As noted earlier, research suggests that women are being imprisoned for an increasing number of offences (Hedderman 2004). This means that they are also coming into contact with the criminal justice system more often. UNODC data shows that in the USA, there is a decrease in the total rate (per 100,000) of young women (ages 17 and under) coming into contact with the criminal justice system. However, this data is not disaggregated by race, clouding the potential impact of government policies designed to police young women, and policies that disproportionally target poorer vulnerable women. In terms of adult women, ages 18 and over, this decrease is not so obvious as the rate varies nominally from year to year (Fig. 2).

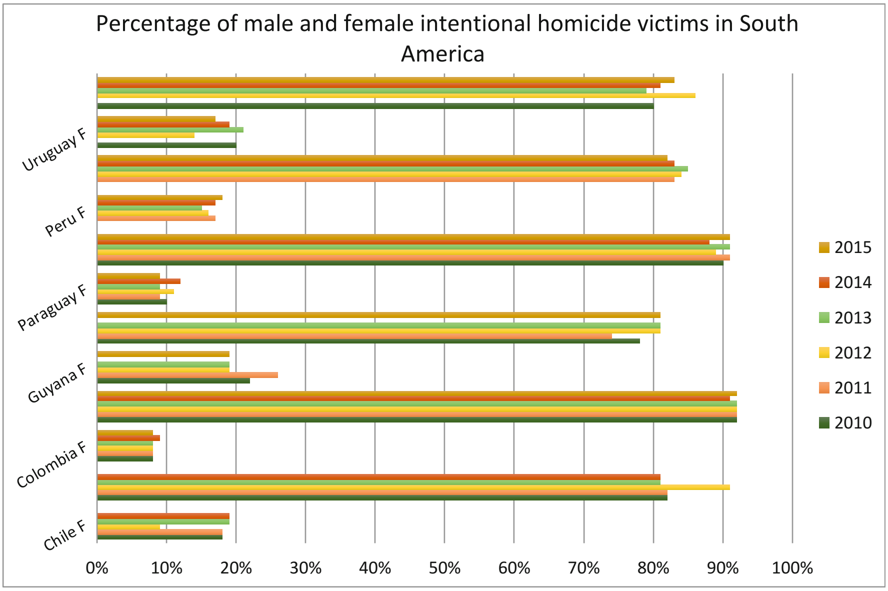
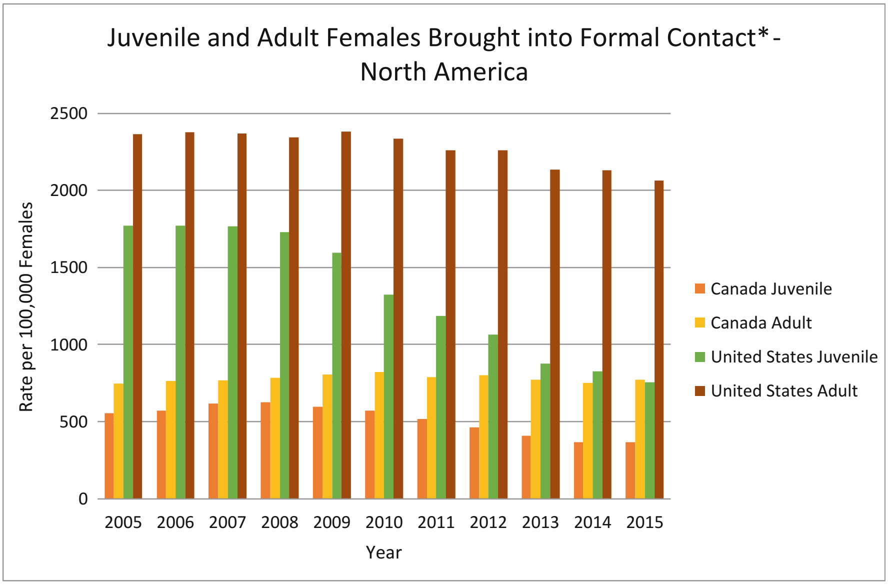


Fig. 1 Comparison between male and female intentional homicide, UNODC



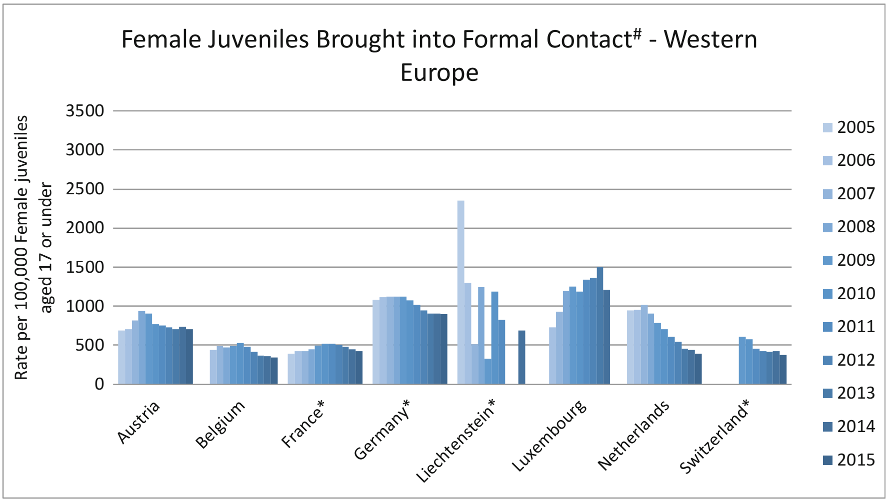
*"Formal Contact" with the police and/or criminal justice system may include persons suspected, or arrested or cautioned, for a criminal offence, at the national level.

Fig. 2 Juvenile and adult women brought into formal contact: UNODC data

In terms of the Western European trends, the picture is somewhat similar (see Figs. 3 and 4). There are fewer young women coming into formal contact with the criminal justice system, except for the case of Luxembourg, especially since 2012. However, there seem to be more adult women coming into formal contact in Austria, France, Germany, and Luxembourg. In terms of the total numbers, the increase is not small; between 2005 and 2015, Austria brought 3,859 more women, France 31,587, Germany 63,115, and Luxembourg doubled the number of women who came into formal contact with the criminal justice system (2,826 women to 6,705 women between 2006 and 2014). The UNODC cautions that there have been changes in definitions, so the increase in the rate may be related to this (Fig. 5).

The data on women held in prison provided by UNODC shows that while the USA persistently holds the title for most women in prison per every 100,000, the rates are not dissimilar, for the last 5 years or so, to the ones found in other countries in the Americas. such as Belize or El Salvador. Countries such as Chile and Brazil also seem to be keeping more women in prison than their neighbors. An important observation to make about the USA is that while a large number of women, juveniles, and adults are coming into formal contact with the criminal justice system – at a rate of over 2,000 per every 100,00 women – the rate for women in prison is 155.5 for every 100,000.

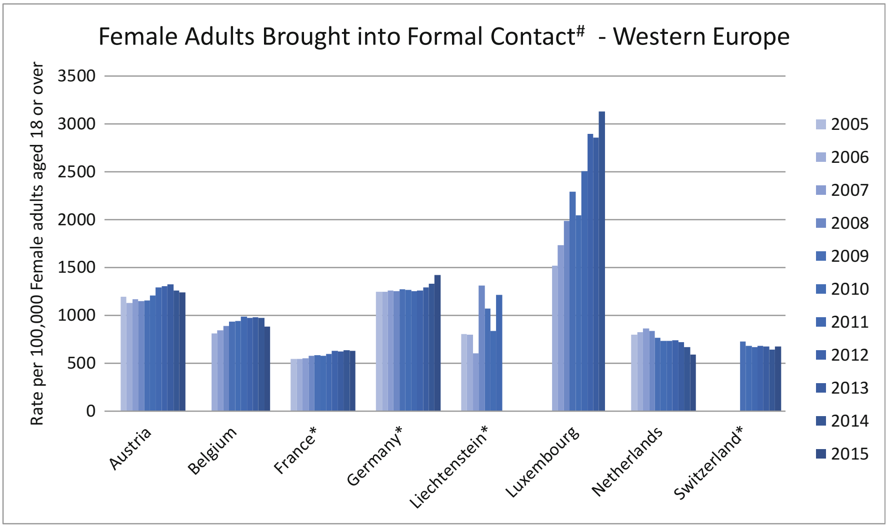
In terms of a comparison with men, the absolute numbers and rates are consistently lower for women globally. Men continue to be the perpetrators of most of the crimes committed across the globe as well as being the most common victims of homicide the world over (United Nations Office on Drugs and Crime 2013). While



*Changes in definitions and/or counting rules are reported by the Member State to indicate a break in the time series.

"Formal Contact" with the police and/or criminal justice system may include persons suspected, or arrested or cautioned, for a criminal offence, at the national level.

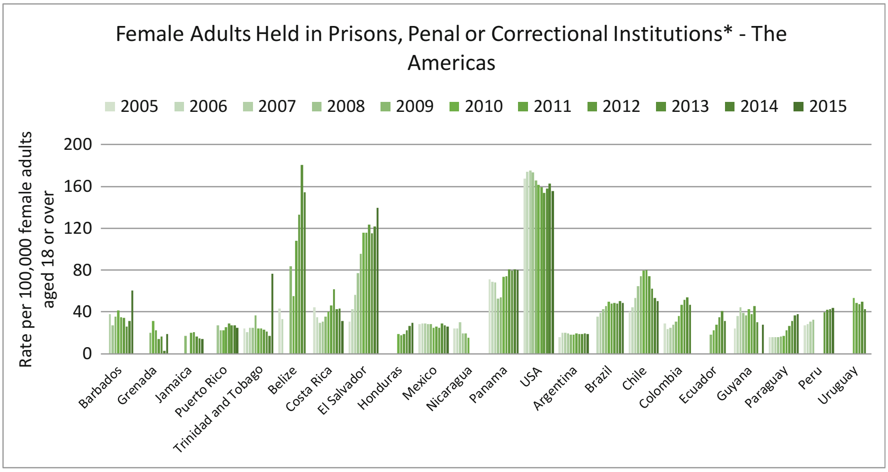
Fig. 3 Female juveniles brought into formal contact: Western Europe



*Changes in definitions and/or counting rules are reported by the Member State to indicate a break in the time series.

Formal Contact with the police and/or criminal justice system may include persons suspected, or arrested or cautioned, for a criminal offence, at the national level.

Fig. 4 Female adults brought into formal contact: Western Europe



*Persons Held means persons held in Prisons, Penal Institutions or Correctional Institutions on a specified day and should exclude non-criminal prisoners held for administrative purposes, for example, persons held pending investigation into their immigration status or foreign citizens without a legal right to stay.

Fig. 5 Female adults held in prison: The Americas the increase in female offenders cannot be denied, it is not simply a matter of more women committing more crimes, the number of women that are contacted, prosecuted, and incarcerated is related to the ways in which crime is codified in society. This is the case for countries with punitive laws against abortion or sex work. The UNODC data is relevant in that it shows that what most research is stating rings true with the numbers of women in prison; however, it is important to remember that a crime in one country may not be so in another. Women in the Global South are more disadvantaged than their northern peers and less is known about the kinds of crimes they commit. In sum, it is important to avoid making blanket statements in relation to female offending, its causes, and its impact in society.

The Global South: Latin America

In Latin America, the experiences, understandings, and perceptions of crime cannot be extricated from its colonial past (Stoner 1987). Since the inception of the colonial state across most of the southern hemisphere, the imported notions of right and wrong, moral and amoral, legal and illegal have had a pervasive and long-lasting effect in civil society. The cultural differences between the colonizer and colonized peoples created a complex legal and social system whereby the imposition of the colonizer's moral code needed to be safeguarded in law. Perhaps the most well-known example of this push is the varying laws created to ensure the racial purity of the colonizer. Miscegenation was a near constant threat in the colonial context that threatened the cohesion of the new territories and the empire at large. Women, due to their role in reproduction, were thus the last line of defense between order and chaos.

In this respect, female offenders in the Latin American context, especially prior to the women's movement, were doubly judged for their transgression as their behavior was not simply a failure in judgment, but it represented a corruption of the moral fabric of society (Guerra 1997). As in all conservative societies where women are the frontier between order and chaos, women in the Latin American context were held to impossibly high standards of purity, chastity, and femininity. Evidently, this ideology ignores the reality that most women are poor, uneducated, worked outside the home, and are often doing things that would be considered inappropriate such as sex outside of marriage, having children without husbands, having abortions, and committing all manner of crimes. Guerra (1997) argues that, in Porfirian Mexico, this led to harsher punishments for women who broke the law as they were to be made an example of. It is worth noting that in Chile, like other countries in Latin America, women offenders were sent not to prison but rather to convent-like institutions run by nuns well into the second half of the twentieth century (Constant 2016; Correa 2005).

Some 20 years later, Bodelon Gonzalez and Aedo Rivera (2015) note that young girls that go through the criminal justice system remain subjected to this double sanctioning due to their double trespassing. They also note that female offending is often coded in the language of pathologizing deviant female behavior, that is, the construction of women who deviate from the norm as mad rather than bad (Bodelon Gonzalez and Aedo Rivera 2015). Feminist interventions in Latin American criminological studies have been far from uniform (Torres 2005). Andreina Torres (2005) contends that feminist critiques in the region have focused on giving a visible role to the victimization of women through crime and not so much their participation as offenders. She also notes that the pathologizing of women's deviant behavior has also been heavily criticized by Latin American feminist scholars who argue that such approaches to female offending conceal the role of the socializing forces women are subjected to (Torres 2005: 5–7). Despite the above, it is important to clarify that women offenders remain painfully underresearched in the Latin American context. A literature review conducted by Maria Antonieta Beltrán (2010) affirmed that Latin American-specific research on women offenders was sparse and diverse in its range with the focus being on women as victims rather than offenders.

Marth Romero Mendoza (2002), in her review of women offenders, presents interesting data on the changes in female criminality during the 1990s. She accounts for six Latin American countries: Mexico, Bolivia, Chile, Peru, Ecuador, and Paraguay. In Mexico in 1995, there were 3,241 women in prison of which 32% were there for drug-related offences (typified as crimes against health in Spanish), 19% for homicide, 15% for robbery, 8% for stealing a child, 8% for fraud, 3% for harming others, and 14% for varied crimes. Of Bolivia's total prison population, in 1993, 13% were female offenders a number that rose to 16% in 1997 (N = 822). Of these women, many did not read or write and 60% of them had minimal schooling. In Chile, the female prison population nearly doubled, from 700 to 1,500, between 1985 and 1995. Sixty two percent of those women were there for drug dealing, 21% for crimes against private property, 10% for assault, 6% for other crimes, and 1% unknown. Just under half of the women had not completed basic schooling. In Peru, 8.1% of the prison population were female in 1995 and the two most common crimes were terrorism and drug trafficking. Ecuador also had a rise in the female offending population from 6.76% in 1987 to 11.29% in 1996 (N = 984); 9% of these women were illiterate and 70.42% was in prison for drug trafficking; notably, 0.17% of the women were there for crimes against faith. Paraguay had the youngest penal population with 50% of the total penal population being younger than 19 years of age. In 1995, there were 74 underaged girls in prison of which 36% had not completed primary school and 3% were illiterate (Romero Mendoza 2002: 13).

The Drug Mule

Perhaps the most common image of a Latin American female offender would be that of the drug mule. For some time now, female offending has been tied to drug trafficking, and international indicators have shown there has been an increase in the number of women convicted of drug-related offences (Campbell 2008; del Olmo 1990). According to Maya Lozano (2015), despite the rise of war on drugs and organized crime, there has been, in parallel, the rise of "narcocultura." Narcoculture, the literal translation of the term, refers to the glorifying of the lifestyle of drug dealers through the classical elements of popular culture. Despite the government and drug dealers situating themselves as opposing forces in a dichotomy of good and bad, the rise of powerful female drug ladies (as opposed to drug lords) added to the increasing number of songs, movies, TV series, and home videos posted on the internet have all conspired to glamorize the modern image of the drug trade making it an aspirational lifestyle (Maya Lozano 2015; Núñez Noriega and Espinoza Cid 2016).

More in-depth research on the reasons for female participation in the drug trade suggests that Latin American women often become a part of the drug trade because of their interpersonal relationships – they are romantically involved with male dealers – or they do so because of necessity (Riquelme Ortiz and Barriga 2015); but given their heightened vulnerability, they are more easily deceived and prosecuted thus becoming more visible in official statistics and the media (Hernández Téllez 2014). Marcela Lagarde (2005: 654–655) follows this line and suggests that there are two types of women who get involved in the drug trade: those that do so *alongside* their male partners and those that are *intimidated* into doing it. Other scholars maintain that the reason for the higher participation of women in drug offences is a monetary one driven by poverty and the need to feed a family (del Olmo 1990; Gibbs cited in Torres 2005).

Teresa Salazar (2007) describes the Latin American female drug offender as a woman who lives in precarious economic conditions, is unmarried, young, with more than one child, who has not finished high school, and lacks any kind of professional training. An interesting feature of her research in a Venezuelan women's prison is the presence of foreign female offenders, 25% of her total sample ($N = 32$) were women born in Colombia. Within Latin America, high levels of internal migration, female-led households, and a high birth rate of children in nonnuclear families are common demographic features (Calandria 2017). This, in turn, seems to be replicated in the female penal population that has been convicted for drug offences. Another interesting finding in the Salazar (2007: 551) study is the relatively high presence of drug-addicted women in the sample, 15.6% of respondents stated they committed their crime to buy drugs.

While it would seem that there is an increase in the presence of women in the world of drug trafficking, Ovalle and Giacomello (2006) reviewed the roles assigned to women within narcoculture only to find that, by and large, women continue to participate in drug trafficking in subaltern roles, have highly gendered forms of participation, and are often victimized for their participation in the drug trade in the form of scapegoats for highly irregular court proceedings (see also Jimenez Valdez 2014). While the complexities of female participation in the drug trade in Latin America remain obscured, recent research has indicated that almost 70% of the imprisoned women in the American continent today are imprisoned for drug-related offenses (Espinoza Mavila 2016: 95). It seems important to be reminded, at this stage, that drug trafficking for women in Latin America is not simply an offence, it is a means to an end whereby poor and very poor women find a way to pay for basic needs despite the social and potential legal sanctions (Riquelme Ortiz and Barriga 2015).

Neonaticide

Within the Global South, the issue of neonaticide – and more specifically the killing of female neonates – is deeply intertwined with issues of culture and the value placed on female children (Gill 2013). Even though these considerations do not apply to the same degree within Latin America, it is important to contextualize neonaticide as much as possible. Reproductive rights have not been easily won in the Global South and remain an issue that generates both unprecedented levels of media scrutiny and devastating consequences for women south of the equator (Hevia 2012; Roa 2016). The primacy given to the fetus at the expense of women could be one of the reasons why Latin American women who are found guilty of filicide, infanticide, or neonaticide continue to be portrayed as depraved, savage, inhuman, subhuman, or unnatural (Constant 2016). Women are not just responsible for procreation, but they are also responsible for the sole care, protection, and education of their children and any breach in these duties is unthinkable.

Recent studies on neonaticide are limited in the Latin American context, and there are difficulties in terms of data collection and access. González Cervera and Cárdenas (2004) found that, in Mexico, children under 5 were more vulnerable and that of these children newborns were the most vulnerable group. They looked at child deaths between the years 1992 and 2001 and found that there was a rise in the percentage of recorded neonaticides, from 10.5% to 14%. While this rise was not a steady annual increase, the deaths of children under a month and newborns did not show the reductions that they identified in all other age groups in their sample. Parents who killed children under 5 were more economically vulnerable, most often lived in the State of Mexico, and killed more boys than girls (González Cervera and Cárdenas 2004).

A retrospective study on infanticide in Buenos Aires during the first half of the twentieth century revealed that the women who were prosecuted for this crime were mostly single, from a rural background, were household workers, and had told the court that they had committed their crime for fear of the social reprisals a single mother faced (Calandria 2017). While Calandria's paper does not delve into the sexual politics of household work during the first half the twentieth century, it does not seem too much of a stretch to think that those pregnancies could have been the result of unwanted sexual demands made by the male members of the household. As of the 1990s, Argentina has no explicit neonaticide or infanticide law, and therefore, women who kill a newborn are tried under regular homicide legislation (Cepeda 2013).

A small review conducted in Chile that examined filicide cases between January 2010 and December 2012 revealed that of the total filicide deaths (N = 55) for the period 51% (N = 28) of them were neonaticides (Rodriguez Manriquez and Fernandez Arias 2018). The geographical distribution of these deaths showed that most of the neonaticides took place in the southern regions of the country. These southern regions are less populous than central Chile, almost half of the country's population lives in the Metropolitan Region where the capital is located, and therefore were expected to have lower numbers of deaths. The motive for most of the neonaticides was coded as unwanted child.

Further neonaticide research needs to be conducted in the Latin American context to fully understand its incidence and characteristics. However, the Latin American context is defined by the limited reproductive rights of its female citizens, it would not be surprising that the neonaticide rates reflected pregnancies that were a product of rape or pregnancies of unviable fetuses. Women in Latin America are more vulnerable than their northern peers when it comes to reproductive rights, and this needs to be taken into consideration when looking at female offenders.

Victimization

The evidence points to women offenders in the Global South being just as victimized as their northern peers. The literature, especially the one in Spanish, may not always refer to it in the same terms, but scholars agree that women offenders are more vulnerable and that their vulnerability is linked to their offending (García Álvarez 2015). Perhaps the main difference is the way in which this vulnerability is framed. A cursory glance at the available literature on Latin American women offenders reveals a considerable bias towards economic vulnerability more so than other forms of victimization.

Female offenders are presented as women who have been abandoned from an early age and who are, by virtue of their sex, often in charge of children who need feeding and protection and, by virtue of their gender, fragile (see, for example, Cisneros and Luna 2007). Yet despite their apparent vulnerability, not much is said about the rates of child physical and sexual abuse, long-term mental health issues, and adult revictimization that women in the Global South endure. As Azoala remarks, “From the XIX century women in prison fulfil the following profile: they are young, poor, illiterate or with low levels of schooling and, almost always, are single mothers responsible for the upkeep of their children. The ways in which they offend varies; the motives don’t” (Azaola and José 1996: 404; translated by the author).

One of the few studies to depart from this was conducted in Argentina by Salisbury et al. (2018) to try and fill the gap generated by the lack of studies that focused on the rates of victimization among women offenders in prison. Notably though, this research was published in English. The study surveyed 246 women in Argentine federal prisons, with an additional 12 semi-structured in-depth interviews, between October and December 2012 (Salisbury et al. 2018). The study found that two-thirds of the surveyed women were between the ages of 20 and 40, 115 women were foreign nationals, and the bulk of the women had low education levels with 42% completing only primary school. In terms of the prevalence of prior victimization they found that 36% has been physically abused at least once, 16.7% reported prior sexual abuse, 13.6% had been raped, 39% endured violence by a family member or an intimate partner, and a fifth reported child physical or sexual abuse

(Salisbury et al. 2018: 138). Salisbury et al. (2018) note that their findings are in line with previous research conducted in the USA which showed a similar pathway into offending; however, the rates of prior victimization for the Argentine women were lower than expected.

Victimization, at least in the Latin American context, is more commonly presented in the form of the human rights violations that female prisoners endure in custody – from the moment they are arrested – and prison. Women are often in overcrowded prisons, they do not have access to basic needs, are not provided with appropriate health care, are forced to engage in exploitative prison work, they are victims of sexual violence within the prison, and for those women who are mothers, there is little place for their children to live with them (Antony García 2007; Espinoza Mavila 2016; Norberto Hernández 2018).

Comparison

When it comes to women who have been tried and sentenced for homicide offences in Latin America, the picture seems to be similar to the one presented in the north. A study of 50 women who had been found guilty of homicide in Mexico City showed that most of them had killed someone they knew, in their home, and that for a fifth of the cases they were a result of multiple episodes of domestic violence where the women were the victims (Azaola 1997). Most of the women in this study had left home at 16, 70% of them had been victims of physical and sexual violence perpetrated by their families as children, and 66% were victimized as adults by their partner at the time they committed their crime. Most of the women (78%) were poor and 20% were extremely poor while almost a quarter of them were illiterate (Azaola 1997).

An interesting point of departure within the understandings of offending between north and south is that of sex work. Women in the Global South are persecuted and prosecuted when they enter the world of sex work. Sex work remains illegal in most of the Global South and yet it is also a persistent transnational industry that knows little of international boundaries. A considerable number of non-regular female migrants engage in sex work to sustain a life in a foreign country (Juliano 2009). It was not uncommon to find moralizing statements from Latin American scholars in relation to sex work that can be best summed up by Martínez Lanz et al. (2008) statement that “prostitution is a form of self-destruction and a defence mechanism against the disintegration of the self.” (translation our own). This view was replicated in some findings that showed that sex work was viewed as a kind of last resort within vulnerable women who were weighing their options, Vargas Espinosa and Sánchez Pilonieta (2010) found that young female offenders would rather commit crimes of theft and robbery rather than engage in sex work to support themselves. Similarly, Martínez Lanz et al. (2008: 306) state that most female sex workers are born out of wedlock and have had a poor or inadequate relationship with their father which leads them to the self-destructive path of sex work.

Another point of departure is the kind of research being published, roughly a third of the Spanish language literature reviewed for this chapter was of the retrospective kind. That is, papers that gave a historical account of the studies produced in the northern hemisphere from Lombroso up to the late 1990s, some with a focus on the contributions made by the field of gender studies, and minor references to local research. The bulk of the literature was published between the mid-1990s and 2010 and while there were studies that included field work they were small in scale, mainly qualitative, and not generalizable despite there being consistent similarities between the findings. It is clear, and this is stated by Latin American scholars, that there is much need for new on the ground research into women offenders.

Africa and Asia

It has already been noted that there is limited research done on the topic of female criminality in the Global South. However, as the chapter aims to focus on the Global South, other regions will be explored in a truncated form covering the specific topic of filicide. Recent research done in Malaysia and South Africa have shed new light on the issue and present interesting challenges for the future ahead. For example, Razali et al.'s (2019) paper on women convicted of filicide in Malaysia hints to the fact that some of the women were imprisoned not for the crime they were charged and found guilty of but rather for breaching the local norms on femininity. Razali et al.'s (2014, 2019) research highlights the fact that socioeconomic inequality and, more specifically, gender inequality are contributing to infanticide and abandonment in the Global South. Razali et al. (2014) argues that to reduce the rate of infanticide and abandonment in Malaysia, surveillance systems need to be bolstered and gender-based inequalities, that underline human development, need to be eliminated. The surveillance approach alone, however, ignores the fact that the root cause of the problem is unplanned or forced pregnancies. Women's reproductive capacities are still contested ground and the backlash against increased reproductive rights are a clear sign that women around the world are still not able to decide when and if they have children (Aiken et al. 2018; Baird 2018; Freeman 2017). Increased surveillance will not solve this problem, and, in countries of the Global South, it is likely to make women the targets of even further oppression. The work done in Malaysia reveals that the legal system plays a part in the further stigmatization of women and "the detrimental effects of living in a patriarchal society where women are subservient to men and held responsible for public and private morality" (Razali et al. 2019: 156).

An interesting insight into the perspectives of women convicted of filicide, in contrast to that of health and policy professionals who linked filicide to non-compliance with traditional femininity norms, reveal the ubiquitous damage of violence against women and children and its link to filicide. In their earlier work on infanticide and child abandonment, Razali et al. (2014) note that gender-based inequalities reduce women's ability to manage their fertility and make autonomous choices about their life, they note that intimate partner violence, rape, incest, adolescent pregnancies, and violence against migrant workers may all play a part in contributing to unplanned pregnancies and ultimately filicide. Their work is pivotal to further understanding how the conditions of a country have a direct impact on the real and perceived female crime rate.

South African studies that do exist have shown that women's pathways to criminality and later imprisonment are characterized by prior sexual and physical victimization, parental neglect, stressful life events, substance abuse, and mental health issues (Pretorius and Morgan 2013). Further studies exploring the intersection between violence against women and children from the perspective of parents convicted of child homicide show that that violence in the intimate and parenting relationships are the key factor in child homicide and that patriarchal family structures contribute to the use of violence in women (Dekel et al. 2019).

Pretorius and Morgan (2013) analyzed media reports for women who killed in post-apartheid South Africa and found that the two most common domestic homicides reported were matricide (the killing of one's mother) and filicide. Pretorius and Morgan (2013) also report that the majority of the reported motives were financial, whether they be the financial burden of another child or the financial gain of matricide. A noteworthy finding is the one that states there was a statistically significant association between the category of murder and the involvement of a third party (Pretorius and Morgan 2013). Such a finding goes against the popular knowledge that female crime is unplanned and lacks premeditation. More likely, however, it reveals the fact that for some women, the measures they must take to survive are far more extreme than the ones taken by women who have means. While media reports are a contested source of data that lack the rigor of register-based studies, they are an antidote to the lack of systematically collected information.

Further research done in South Africa by Abrahams et al. (2016) estimated that, of the 454 children under 5 killed in South Africa, 53.2% were neonates under 28 days and 74.4% were infants under 1 year. This brought the neonaticide rate to 19.6 per 100,000 live births and the infanticide rate of 28.4 per 100,000 live births (Abrahams et al. 2016). A further look into the data showed that most neonates died between 0 and 6 days, and abandonment accounted for 84.9% of all the neonates killed. This one of a kind study was a national retrospective mortuary-based study of child homicides. The authors report that mothers were suspected to be or identified as the perpetrators in nearly two-thirds of the homicides and in all of the neonaticides (Abrahams et al. 2016). The work done by Abrahams et al. is important not only because it establishes a knowledge base that was lacking but also because they are able to make broader links to the reality in South Africa. For example, Abrahams et al. note that there might be a link between unplanned pregnancies and the higher rates of neonaticide despite the fact that South Africa has one of the most liberal abortion laws in the world. They cite a previous study done in Cape Town looking at women who were denied abortions that shows access remains an issue for women who wish to exercise their reproductive rights (cited in Abrahams et al. 2016).

A survey of violent deaths in the city of Dar es Salaam, Tanzania estimated a rate of neonaticide (within 24 h of birth) of 27.7 per 100,000 live births, which is one of the highest reported (Outwater et al. 2010). The authors estimate that 80% of the child homicides in Dar es Salaam are neonaticides and that the majority of the perpetrators are mothers. While the study identified the remains of the newborns, there were only two perpetrators identified, both mothers and both women who were impregnated by their employer. Outwater et al. (2010) posits that, despite the limited perpetrator evidence, the findings of their studies echo the gender-based violence seen in Europe in the nineteenth and beginning of twentieth century were poor women were exploited for more than their labor.

Psychiatric Diagnosis

Throughout this chapter, it has become clear that the link between female criminality and mental health is a pervasive one. Studies conducted in the 1990s showed that the majority of female prisoners, over 80%, met the criteria for one or multiple lifetime psychiatric disorders (see, for example, Teplin et al. 1996, 1997). Teplin et al.'s (1996) study argued that psychiatric epidemiological data on male prisoners could not be transposed onto the female population as their diagnostic profiles were very different. Their study showed that the most common disorders were drug abuse or dependence, alcohol abuse or dependence, and post-traumatic stress disorder. Rates for mental disorders were significantly higher than general population and men and women differed in their pattern and rates. One interesting point made by Teplin et al. (1996) is that the true prevalence rates among female prisoners might be underestimated due to the study design and the fact that women who enter the criminal justice system – who present with severe mental disorders – may be dismissed at the point of trial.

Further analysis carried out by Teplin and her colleagues, exploring service delivery among female detainees pre-trail, showed that of the women who needed services 23.5% received them while in jail (Teplin et al. 1997). Participants were defined as needing services if they had schizophrenia or a major affective disorder and were symptomatic within 2 weeks before the intake interview, if they had severe and definitive cognitive impairment and were mentally disoriented at the time of the intake interview, or if they had a moderate or severe substance use disorder and were mentally disoriented at the time of the intake interview (Teplin et al. 1997). In conclusion type of disorder, treatment history, and sociodemographic variables all affected the odds of a mentally ill woman's receiving services (Teplin et al. 1997).

Current estimates of the prevalence of mental health issues for women in prison suggest that not much has changed since the early research carried out in the 1990s. WHO estimates that women in prison are more likely to have mental health problems when compared to the general population or to their male counterparts (Enggist et al. 2014). These problems include higher rates of post-traumatic stress disorder and substance abuse or dependence. For example, in the UK, 90% of the women in prison had a diagnosable mental disorder (Enggist et al. 2014). This same report states that studies worldwide have shown that suicide rates in prison are up to ten times higher than the general population and that suicide remains a serious issue and a leading cause of death in custody (Enggist et al. 2014).

New diagnoses, such as ADHD, have been assessed within prison populations and the results have shown there is a high prevalence in younger female prisoners. Prevalence that exceeds the estimates from epidemiological studies in the general female population (Rösler et al. 2009). Rösler et al.'s (2009) study suggests that ADHD is more frequent in adolescent and young adult female offenders and that this increases the risk for future psychiatric morbidity. Rösler et al.'s (2009) also found a significant higher prevalence of axis I diagnoses in persons with ADHD. While more research on adult ADHD in imprisoned women needs to be conducted, findings such as these raise the question of how to best provide treatment and interventions in a prison setting.

A recent systematic review and meta-analyses focuses on health gains following therapeutic interventions. Previous studies had reported high mental health burden in female prison population (see, for example, Teplin et al. 1996, 1997; Enggist et al. 2014), therefore the evidence for efficacy of mental health interventions such as DBT, trauma-focussed therapy and substance abuse intervention, and CBT group interventions were studied. Outcomes were measured by assessment of depression, trauma symptoms, and global mental health. In total, 11 articles were included in the meta-analyses which showed some effect on consequences of earlier trauma (effect size for depression −0.36 and −0.33 for trauma both small but significant) and comorbid drug misuse. Data on intervention with offenders suffering from substance abuse mostly do not report on women and men separately, ignoring the gender aspect of the drug abuse problem (Bartlett et al. 2015). Substance abuse is seen by the authors as self-medicating response to historical or recent trauma. There were several limitations mentioned by the authors such as small sample sizes and that mostly prison populations in the USA were studied; however, their findings are important in the face of an increasing prison population. The issue of measurement in this complex situation and further strategies to improve the quality of the research is discussed. Work such as Bartlett et al.'s (2015) suggest that there is strong evidence to extend interventions beyond prison.

Conclusion

It seems safe to say that the rise in female offenders is one that is global and one that shows no signs of abating. It seems important to remind the reader that while there are more women in prison now than ever before, this alone is not evidence enough to state that the rates of female criminality have risen in ways that call for a general state of alarm. Who ends up in prison and who doesn't is not as straight forward as thought. Historical antecedents need to be taken into consideration, for example, the impact of the war on drugs during the 1990s and cultural factors need to be accounted for, such as the levels of persistent systemic disadvantage women face in strict heteronormative societies.

It is also important to account for the link between mental health issues and female criminality. Early studies looking at the prevalence of these in the female prison population found very high rates of female offenders who have drug and alcohol abuse or dependence issues and post-traumatic stress disorder, a trend that has shown no signs of abating. This link is a feature that the Global North and South have in common and one that requires appropriate diagnostic protocols for women who enter the criminal justice system. While there is not much evidence to suggest that prison-based mental health interventions are as effective as hoped inaction would, arguably, be even more detrimental to these women.

In terms of the research that is being conducted either side of the equator, the commonality lies in the fact that women offenders remain an appendix to most of the research that is carried out. In Latin America, women offenders are even less likely to feature in research and the focus of what has been done so far continues to be tainted by positivistic notions imported from the north. Latin American women are most commonly constructed as the victims of crime, and while women are the primary victims of crime the world over, they also participate as offenders making this gap in the knowledge base an oversight.

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Interpersonal Violence and Perinatal Mental Health

17

Jane Fisher, Stephanie McKelvie, and Susan Rees

Contents

Abstract

Experiencing or witnessing interpersonal violence, especially when it occurs within households, incurs fear and is harmful to health, including perinatal mental health. Both the perpetration and experience of interpersonal violence occur in gendered patterns and violent transgressions of the human rights of females begin prior to birth and occur across the life course. Although there is variation in prevalence between countries and cultures, violence against women is a universal phenomenon. It encompasses diverse forms of abuse, but the World Health Organization considers violence to be the principal gender-related cause of

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_26

general health and common mental health problems among women. In this chapter, four examples of gender-based violence against women and girls and their impact on perinatal mental health are described: preference for male children and female feticide, childhood sexual abuse, intimate partner violence, and intimate partner violence in the context of especially difficult life circumstances.

Keywords
Interpersonal violence · Male child preference · Childhood sexual abuse · Intimate partner violence · Perinatal mental health

Introduction

The World Health Organization (2002) defines (United Nations General Assembly 1993) any act of violence against women in their families, the general community, or perpetrated by the state as gender-based violence. The Declaration and Platform for Action of the Fourth World Conference on Women, Beijing, 1995, elaborates the definition of gender-based violence as being acts that ". . .result in physical, sexual or psychological harm or suffering to women [and girls], including threats of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or private life" (United Nations 1995). Although there is variation in prevalence between countries and cultures, violence against women is a universal phenomenon. It encompasses a broad range of forms of abuse, but the World Health Organization considers violence to be the principal gender-related cause of general health and common mental health problems among women. For most of the twentieth century, violence against women received scant research attention or recognition by clinical services, researchers, and policy-makers. However, there has been a marked increase in recent decades in recognition of the prevalence of violence, the disproportionate risks that women face of exposure to violence, and of the nature of its consequences for health.

Violent transgressions of the human rights of females begin prior to birth and occur across the life course. Gender-based acts of violence take place in domestic, institutional, and general community settings. They encompass, but are not limited to, sexual abuse of girls, female genital mutilation, dowry-related violence, and other harmful traditional practices; sexual harassment and intimidation at work; trafficking; and forced abortion or sterilization. Some groups, including women who are indigenous or members of ethnic or religious minority groups, women who are occupying low socioeconomic positions, women with disabilities, and women who are refugees or asylum seekers, are especially vulnerable.

Experiencing or witnessing interpersonal violence, especially when it occurs within households, incurs fear and is harmful to health, including perinatal mental health (Fisher and Cabral de Mello 2015; Malhotra and Shah 2015). In order to comprehend the relationship between experiences of violence and perinatal mental health problems and their implications for clinical practice, policies and programs, and research, four illustrative examples are considered.

Preference for Male Children and Female Feticide

Since the early 1980s when ultrasound technologies, which could be used to determine fetal sex, were first available, selective abortion of female fetuses has increased. It occurs predominantly in countries with a strong cultural preference for sons rather than daughters, including China, India, Korea, and Pakistan (Miller 2001). It is regarded as one of the leading causes of "missing girls" or disproportions of males to females in the population. In India, Sahni et al. (2008) established, through examination of medical records for more than 320,000 births (1900–2006) at one hospital in Delhi, that the ratio of female to male babies fell significantly from 935 girls to 1000 boys before 1979 to 892 girls to 1000 boys after 1980. The ratio was even lower if the first baby had been a girl (716 girls). However, if the first child was a boy, there was an excess of girls (1140).

There has been extensive research into the psychological consequences of elective abortion in contexts where it is affordable, accessible, and legal. While, as with all major life decisions, some women can experience ambivalence and distress, so too can those who proceed with an unintended or unwanted pregnancy. Dadlez and Andrews (2010) reviewed the evidence asserting that there were adverse consequences for the mental health of women who experienced induced abortion. They concluded that many of the investigations that reached this conclusion had been undertaken by people holding undeclared positions opposed to abortion and that this had influenced all aspects of the research including interpretation of the data. Post-abortion "counseling," which focused on violated fetal rights, was likely to have increased rather than diminished psychological distress, but was not acknowledged in the research. Dadlez and Andrews (2010) concluded that there was no evidence for the mental health problem that had been called a "post-abortion syndrome."

However, almost all the evidence about psychological consequences of abortion had been generated in high-income nations, and it did not include consideration of the impact of selective abortion of female fetuses. In general, this practice is illegal, but it persists in settings where male children are preferred and where it is widely believed that fetal sex is determined by the mother, who can feel highly responsible for conceiving a girl. There have been few systematic investigations of the psychological aspects of this situation. Unnithan-Kumar (2010) concluded on the basis of the accounts provided in personal interviews with women, their family members, and health-care providers that this practice represents a paradox. From one perspective, it could be construed as representing agency, in which a woman uses this procedure to protect herself and a potential female child against discrimination and marginalization. It represented a "pragmatic understanding" of the realities of gender discrimination and, for women with little education, that the only path to inclusion and standing within a patriarchal family is to give birth to sons. From another perspective, it represents violation of the rights of women by subordinating and devaluing them and removing autonomous decision making in service of the maintenance of cultural norms that favor men. Unnithan-Kumar (2010) also concluded that doctors rationalize this practice, often undertaken clandestinely, as being provision of a social service. In the absence of formal investigations of psychological aspects of abortion for sex selection, it is only possible to speculate on the potential consequences. It is possible that women in the situation of having conceived a female fetus in these settings might experience intense ambivalence (Kjelsvik et al. 2018) about the pregnancy and, if they lack autonomy in making a decision about the pregnancy outcome, that this is especially difficult to resolve.

There is more evidence about the links between postpartum depressive symptoms and giving birth to a female baby in cultural contexts with a preference for male children. Jain et al. (2014) compared exclusive breastfeeding and scores on the Hindi translation of the Edinburgh Postnatal Depression Scale (EPDS) 48 h postpartum among 3466 women who had given birth vaginally at St. Stephen's Hospital in Delhi, India. Boy babies were significantly more likely than girls to be exclusively breastfed ($p < 0.001$), and the mean EPDS scores were significantly lower among mothers of boys than mothers of girls. These two factors operated independently and were interpreted as clear indications of a gender bias toward male children. In China Xie et al. (2007) conducted a cohort study of 320 primiparous women without a psychiatric history who had given birth in one of four hospitals in Changsha, in Hunan Province, over a 5-month period. The adjusted rate of "postpartum depression" (assessed by the Chinese validation of the EPDS) was nearly three times higher (AOR 2.80) among mothers of daughters than those who had given birth to sons. Similarly, Mohammad et al. (2011) found in a prospective investigation of 353 Arabic-speaking women recruited while receiving antenatal care at a hospital in Jordan that at about 8 weeks postpartum, most clinically significant depressive symptoms could be predicted by a constellation of variables that included a difficult relationship with a mother-in-law, lack of support, and giving birth to a girl baby.

Together these data demonstrate the power of the sociocultural context, in particular entrenched attitudes, values, and stereotypes that devalue females, to influence women's perinatal mental health.

Childhood Sexual Abuse

Childhood sexual abuse is defined as any activity with a child before the age of legal consent that is for the sexual gratification of an adult or a substantially older child (Johnson 2004). It includes diverse behaviors involving physical contact, exposure to sexual anatomy or sexual material, and involvement of children in the making of pornography. It is usually clandestine, might involve threats to the child to maintain secrecy, and occur to children who are too young to describe what has been done to them. Adults might not remember the details of what happened to them. One of the most common violations of girls' rights is sexual abuse. The impact of childhood sexual abuse on adult mental health has been investigated comprehensively but is difficult to elucidate as it often co-occurs with other risks to adult mental health including neglect, exposure to family conflict, and emotional and physical abuse. Estimates of the prevalence of experiences of sexual abuse perpetrated against a child vary by definition, age cutoff, and method of assessment. Disclosures are governed by shame, health literacy, and availability of an adult in whom to confide

(Shack et al. 2004). In general, prevalence of noncontact forms of abuse is higher than contact sexual abuse, and therefore establishment of precise prevalence is not possible (Johnson 2004).

Childhood sexual abuse is experienced by boys, but much more commonly by girls. Anderson et al. (1993) found that almost a third of a randomly selected cohort of 3000 women in New Zealand reported having had at least one unwanted sexual experience by the age of 16 years. Finkelhor and Dziuba-Leatherman (1994) in a review of the then available epidemiological studies, including nationally representative surveys, found that 7–36% of girls had experienced sexual abuse, most commonly perpetrated by a male who was known to them. Childhood sexual abuse often co-occurs with threats to a girl's life or personal safety if she discloses it to another adult. All unwanted sexual experiences in childhood are potentially problematic.

The impact of childhood sexual abuse on adult mental health has been investigated comprehensively, but the relationship is difficult to elucidate as it often co-occurs with other risks to adult mental health including neglect and experiences of family conflict and emotional and physical abuse. The use of clinical rather than population-based samples, diverse definitions of abuse, non-validated assessment measures, and failure to adjust in analyses for confounding factors have led to varied estimates of the effects of childhood sexual abuse. Multistaged approaches which have taken into account the influences of co-occurring adversities including family structure, socioeconomic position, and multiple forms of abuse have been able to identify impacts more explicitly. Risk of adult mental health problems, including depression, anxiety, and substance abuse, and co-morbid occurrence of these conditions appear to be higher if the abuse involved genital contact or sexual penetration and was perpetrated by a family member or known caregiver, especially when the abuse was conducted repeatedly and over sustained periods. Somatization is the experience of clinically significant symptoms, which cannot be explained by a known medical condition, disproportionate anxiety about physical symptoms, or "psychogenic" or idiopathic symptoms. Dissociation is a state in which psychological stress leads to loss of "normal psychological integration." These are presumed to be a means of communicating psychosocial distress and are diagnosed ten times more frequently in women (point prevalence of 2%) than in men (0.2%) (American Psychiatric Association 2013). Somatization and dissociation are closely linked to experiences of traumatic events, which involve actual or witnessed threats to life coupled with helplessness and horror (Chaturvedi and Rajkumar 2009). They are both more common among women who have experienced childhood sexual abuse than those who have not (Fisher et al. 2018). Seriousness and chronicity of exposure to childhood sexual abuse and severity of mental health problems appear to have a dose-response relationship (Johnson 2004).

Seng et al. (2009) postulating that because pregnancy is a psychosexual life event and pregnancy care can involve intrusive procedures, women with past experience of childhood sexual abuse might be especially vulnerable to experiencing trauma-related pregnancy mental health problems. They assessed lifetime and point prevalence of post-traumatic stress disorder (PTSD) among women who were pregnant and receiving antenatal care in eight public and private health services in the Midwest of the United States. Computer-assisted diagnostic telephone interviews were conducted with more than 1500 women meeting the eligibility criteria of being aged at least 18 years, nulliparous, and less than 28 weeks' gestation using the National Women's Study PTSD Module. To meet criteria for diagnosis of PTSD, the person must have experienced a traumatic event or events (Criterion A); experienced at least one intrusive symptom (e.g., involuntary images or thoughts, flashbacks when in a similar situation, or distressing nightmares related to the traumatic experience) (Criterion B); three numbing or avoidance symptoms (e.g., difficulty experiencing enjoyment from once pleasurable activities and avoidance of thoughts or conversations about the event(s) (Criterion C); and two hyperarousal symptoms (e.g., sleeping problems, irritability, being easily startled) (Criterion D), which have occurred together and lasted more than one month (Criterion E). Past month symptoms yielded a current PTSD diagnosis. A Life Stressor Checklist was used to assess experiences of childhood maltreatment and adult abuse. The lifetime PTSD prevalence for women participating in this study was 20.2%, and current prevalence was 7.9%, higher than the general community prevalence.

Women experiencing current PTSD were more likely than others to have adverse social circumstances including occupying a low socioeconomic position, being African American, an adolescent, with less than secondary education, and living in a violent neighborhood. Past experiences of sexual and other forms of abuse were much higher among women with, than without, PTSD, in particular: being raped (OR 5.3; 95% CI 3.2 to 8.7), physically abused (OR 6.6; 95% CI 4.3 to 9.8), emotionally abused (OR 10.2, 95% CI 6.9 to 10.0), or physically neglected (OR = 10.3, 95% CI 6.0, 17.5) during childhood. The study's second major original finding was that major depressive disorder (MDD) was much more common among women with, than without, PTSD. Among women without PTSD, rates of MDD were quite low (3.4% among women who had not experienced a traumatic event). However, the rate of MDD in the lifetime PTSD group was 27%, and the current PTSD group was 35%. Overall, 84.5% of pregnant women with MDD had comorbid full or partial PTSD.

In a subsequent investigation of the impact of childhood abuse and pregnancy mental health problems, including PTSD on emotional bonding with an infant, Seng et al. (2013) conducted a prospective cohort study of 566 women selected from the participant pool of the prior study (Seng et al. 2009) to meet criteria for one of three groups: (1) to have a lifetime diagnosis of PTSD (156 women); (2) to have experienced trauma, but not developed PTSD (220 women); and (3) to have no experience of trauma (190 women). Participants were re-interviewed in late pregnancy and 2 months postpartum. Experiences of dissociation, postnatal depression, and mother-infant bonding were ascertained using standardized measures. They found that lifetime PTSD either alone or in association with pregnancy MDD, predicted postpartum depression, and impaired mother-infant emotional bonding highly significantly. Childhood maltreatment was the major predictor of pregnancy PTSD. High-quality relationship with an intimate partner, family support, and a network of supportive peers modified these effects.

Together these findings demonstrate the lasting adverse psychological impact of childhood maltreatment, in particular sexual abuse and its relevance as a predictor of pregnancy and postnatal mental health problems among women and the flow on consequences of difficulty in establishing an emotional bond with the baby.

Intimate Partner Violence

Family violence is a descriptor that encompasses destructive behaviors in an intimate relationship where one person tries to dominate and control another. Intimate partner violence (IPV) is violence committed by a current or past spouse or partner. The World Health Organization estimates that 35% of women aged 15–49 years worldwide have experienced physical and/or sexual violence perpetrated by an intimate partner or former partner, or sexual violence perpetrated by someone who is not a partner, in their lifetimes, with most being perpetrated by intimate partners (Devries et al. 2013). Although IPV also occurs in same-sex relationships and is perpetrated by females against males, a male intimate partner perpetrating violence against a female partner is the most common form of IPV (Walters et al. 2011; Laskey et al. 2019).

Intimate partner violence is commonly classified as physical, sexual, or psychological violence, controlling behaviors and economic violence. Establishing the prevalence of violence perpetrated against women by intimate partners is difficult and influenced by the methods of ascertainment, which have included self-report questionnaires, telephone interviews, and anonymous postal surveys. However, it is agreed that accurate ascertainment needs to describe behaviors across physical, sexual, and emotional domains and not just to ask women whether they have experienced abuse. The most widely used operational definitions of the different classifications of IPV (see Boxes 1 and 2) were developed for the landmark World Health Organization Multi-Country Study on Women's Health and Domestic Violence Against Women (García-Moreno et al. 2005).

Box 1 The World Health Organization's Multi-Country Study on Domestic Violence and Women's Health Household Survey (García-Moreno et al. 2005)
This study collected data from more than 24,000 women from randomly selected households in ten countries using individual face-to-face interviews. There were wide inter-country variations in lifetime prevalence of experiences of violence perpetrated by a current or ex-husband or partner: 13% in Japan to 61% in Peru, with most countries in the range 23% to 49%. Co-occurrence of violence was widespread: 94% of women experiencing physical violence also experienced verbal insults and humiliations and 36% forced sex. This study has established the gold standard for ascertainment of exposure to physical, emotional, and sexual violence in women. It demonstrates that it is essential to address specific behaviors and not general self-reports of whether or not abuse has been experienced.

Box 2 World Health Organization's Operational Definitions of Behaviors Constituting Intimate Partner Violence (García-Moreno et al. 2005)

Physical IPV	Sexual IPV	Psychological IPV	Controlling Behaviour
• Slapped or had something thrown at her that could hurt her • Pushed or shoved Hit with fist or something else that could hurt • Kicked, dragged or beaten up • Choked or burnt on purpose • Threatened to use or actually used a gun, knife or other weapon against her	• Physically forced to have sexual intercourse when she did not want to • Had sexual intercourse when she did not want to because she was afraid of what partner might do • Forced to do something sexual that she found degrading or humiliating	• Insulted or made to feel bad about herself Belittled or humiliated in front of other people • Perpetrator had done things to scare or intimidate her on purpose, e.g. by the way he looked at her, by yelling or smashing things • Perpetrator had threatened to hurt someone she cared about	• Tried to keep her from seeing friends • Tried to restrict contact with her family of birth • Insisted on knowing where she was at all times • Ignored her and treated her indifferently • Angry if she spoke with another man • Often suspicious that she was unfaithful • Expected her to ask permission before seeking health care for herself

Violence against women in domestic settings, once considered a private matter and not a public health priority, gained recognition as a significant cause of death and disability in the latter half of the twentieth century. Homicide and suicide were counted in the top 10 causes of death in the United States and declared a national health priority in 1979 (Dalhberg and Mercy 2009). A third of women who die by homicide are murdered by an intimate partner (Stockl et al. 2013). It is only quite recently that the determinants and nature, prevalence, and health and social consequences of IPV have begun to be recognized and prioritized.

Intimate partner violence is multifactorially determined including cultural and social factors (Abeya et al. 2011; Dixon and Graham-Kevan 2011). It is most common in settings in which women are devalued and discriminated against and in which strong gendered-role restrictions prevail (Akmatov et al. 2008). Intimate partner violence occurs in social and cultural settings. Risk is, however, higher among women occupying the lowest socioeconomic positions, have low educational attainments, live in rural rather than urban areas, have been married by “abduction” (Abeya et al. 2011), or as an adolescent (Hong Le et al. 2014), are in a polygamous marriage, or have witnessed IPV between their parents.

Intimate partner violence (IPV) is a clear and consistent predictor of depression, anxiety, trauma symptoms, suicidal ideas, and substance abuse experienced by women at all stages of life (Astbury and Cabral de Mello 2000). Mental health problems are even more common than physical injuries following IPV (Kamo 2009). In the WHO Multi-Country Study, women who had experienced IPV were at two to three times higher risk of suicidal thoughts and suicide attempts compared to those who had not (García-Moreno et al. 2005). Depression diminishes in women who have left violent relationships and are living in refuges; this improvement is attributed to the benefits associated with cessation of violence, provision of professional and peer support, and an environment in which personal agency is promoted (Kamo 2009).

While cross-sectional data can identify associations between psychosocial factors and outcomes, they cannot establish the direction of these relationships. Problems in the relationship with an intimate partner were identified in early research as being associated with postnatal depression, but the interpretation was that it was a depressive perception, rather than an accurate account of a personal predicament. Brice Pitt (1968), in his highly influential investigation of 305 women who had given birth in two hospitals in London and his conclusion that some were experiencing an “atypical depression” following childbirth, offered the interpretation that few women lacked support, but many had *negative feelings about their husbands* [who were] *regarded as unhelpful or unsympathetic*. O’Hara and Swain (1996) in one of the first systematic reviews of the prevalence and risks for postpartum depression described it as partners “... being less available after delivery and providing insufficient practical support.” Wilson et al. (1996) acknowledged that a woman was at greater risk of postpartum depression if her partner held *traditional rigid sex role expectations*. Boyce et al. (1991) in interpreting their finding that women who became depressed in the postpartum period were less likely than others to experience their partners as trustworthy and supportive commented:

> [a depressed woman] *may be particularly incapable of evoking additional care and support from her partner* or *may tend to choose a partner incapable of providing care or to behave in way, which elicits uncaring responses from her intimate*. (Boyce et al. 1991)

The possibility that the behaviors of an intimate partner, including perpetration of violence experienced during pregnancy or after giving birth, might contribute causally to the mental health problems that women experience at this life phase was only considered relatively recently.

In rural Vietnam, this relationship was investigated in a community-based longitudinal study in which 497 pregnant women were recruited and followed until 6 months postpartum. Different forms of IPV were measured by the Intimate Partner Violence section of the WHO Multi-Country Study on Women’s Health and Domestic Violence Against Women questionnaire. The Edinburgh Postnatal Depression Scale–Vietnam Validation was used to assess symptoms of the common perinatal mental disorders of depression and anxiety (CPMD). Overall, 27.3% (95% CI 23.3 to 31.2) women had experienced at least one form of IPV during their lifetimes, and 5.9% (95% CI, 3.8 to 8.1) had experienced IPV during the first 6 months after childbirth. Experiences of any form of IPV were associated with higher likelihood of CPMD. Lifetime experience of sexual violence was associated with a 14-fold (AOR 14.3, 95%CI 3.3 to 62.7) increased rate of antenatal CMD and of two or more forms of violence a more than sevenfold (AOR 7.7, 95%CI 2.4 to 24.5) risk of perinatal suicidal thoughts (Fisher et al. 2013).

In a sample of 1500 pregnant women recruited from antenatal health services in Durban, South Africa, Groves et al. (2012) found that nearly 25% had experienced at least one form of IPV, most commonly psychological abuse, during the pregnancy. Compared to those who had not experienced abuse, women who experienced physical, psychological, or sexual abuse during pregnancy were at substantially higher risk of emotional distress. After adjusting for other factors, likelihood of emotional distress was 1.41 times (95% CI1.26 to 1.57) higher for each episode of psychological violence and 2.01 times (95% CI1.16 to 3.77) higher for each episode of sexual violence during pregnancy.

In an extensive narrative synthesis of the evidence available about "marital violence" in India, Jejeebhoy et al. (2010) found that up to one in two women experienced physical violence and one in three sexual violence perpetrated by their husbands, from early in their marriages. For large proportions, these experiences continued at the same rates during pregnancy. They also ascertained the data available from men about perpetration of violence: one in four acknowledged perpetration of physical violence and almost one in three of sexual violence against their wife. Experiences of IPV were associated with multiple adverse health outcomes for women, including increased likelihood of high-risk health behaviors like smoking, alcohol consumption, and substance abuse.

The first systematic review of the then available evidence about IPV and perinatal mental health was published in 2013. Howard et al. (2013) identified, through a systematic search, papers reporting 67 investigations of the associations between having experienced domestic violence (defined as violence perpetrated by an intimate partner or another family member) and having symptoms of a perinatal mental disorder as assessed by a validated diagnostic or screening instrument. They found that the prevalence of having experienced domestic violence during pregnancy was 4% to 8% and noted that rates were higher in low- and middle-income than in high-income countries. Most data were collected in cross-sectional surveys (56 studies), which are only able to reveal associations and not causality. There were fewer (16) prospective cohort studies, which are able to establish the links between experience of a risk factor and a subsequent adverse health outcome. Meta-analyses were used to identify the associations. Prevalence was assessed on the basis of whether the violence had been experienced in the lifetime, in the previous year, or during pregnancy. The risks of experiencing depression during pregnancy or in the postpartum year are summarized in Table 1.

Table 1 Domestic violence and likelihood of experiencing perinatal depression

Antenatal depression	
Lifetime	OR 3.04 (95%CI 2.31 to 4.01)
Past year	OR 2.82 (1.51 to 5.28)
Pregnancy	OR 5 (4.04 to 6.17)
Postnatal depression	
Lifetime	OR 2.94 (1.79 to 4.82)
Past year	OR 2.82 (1.72 to 4.64)
Pregnancy	OR 4.36 (2.93 to 6.48)

Source: Howard et al. (2013)

The findings are striking and include that experiencing violence during pregnancy confers a more than fourfold increased risk of depression not only during pregnancy but also postpartum.

A healthy relationship with an intimate partner is characterized by emotional closeness, trust, mutual exchange of affection, familiarity and a shared daily life, and willingness and capacity to adapt to altered needs as these occur across the life course. During pregnancy dependence is increased by the physical demands of the growing fetus but also by the psychological challenges of adaptation and transition. It remains high after giving birth as women have to suspend their own needs in service of the work of caring for an infant. In general, women have less involvement with their workplaces and the social and economic protections that these confer, from advanced pregnancy through the postpartum year. If an intimate partner is experienced as kind, encouraging, and trustworthy, with a shared commitment to the pregnancy and the baby, it has been shown worldwide to be highly psychologically protective (Fisher et al. 2012). Experiencing abuse is especially harmful when, rather than experiencing a protective response from an intimate partner, in a domestic setting which is meant to be a safe haven, women experience criticism, coercion, threats, or physical violence.

In summary, there is now consistent evidence that experiencing IPV during pregnancy or after giving birth increases the risk of common perinatal mental disorders among women (Fisher et al. 2012).

Intimate Partner Violence in the Context of Especially Difficult Life Circumstances

Natural Disasters, Intimate Partner Violence, and Pregnancy Mental Health

Natural disasters can occur anywhere, often with little warning, but their impact is much greater in resource-constrained low- and middle-income nations. After emergency assistance for survivors, the priority for governments and humanitarian organizations is generally rebuilding infrastructure and providing essential goods and services for people who have lost housing and livelihoods. The World Health Organization's guidance for maternal and newborn health in humanitarian crises focuses on the equipment and skills needed for safe births and newborn care (World Health Organization). The mental health of women who are pregnant or have recently given birth has not to date been a primary focus of post-disaster policies or interventions.

There is growing evidence that IPV increases among people who have survived a natural disaster (Schumacher et al. 2010), which is an especially stressful circumstance. Schumacher et al. (2010) conducted a large population-based study of adults recruited through systematic household sampling, living in areas which were most severely affected by Hurricane Katrina. Of the 810 respondents, 455 were married or cohabiting and were asked in computer-assisted interviews about their experiences during and after the hurricane, their health, and interactions with their intimate partner since and before the disaster. There was an increase in the proportion of women reporting psychological abuse from 33.6% in the 6 months before to 45.2% in the 6 months after Hurricane Katrina ($p < 0.001$). For nearly 20% of women, the first experience of psychological abuse followed the hurricane. Physical abuse increased from 4.2% to 8.3% for women ($p = 0.01$). Predictors of violent victimization after the hurricane included being young and less well educated and having experienced previous IPV but were compounded by post-disaster stressors, like food shortage and having to relocate to temporary housing. Experiencing IPV increased the risk of post-hurricane depression and post-traumatic stress disorder.

In a systematic review of (Khatri et al. 2019) the seven studies (all from high- and middle-income countries) which had investigated pregnancy mental health problems among women who had recently experienced an earthquake, Khatri et al. (2019) found that a wide range of clinically significant symptoms of common mental disorders had been documented. In Japan 4% (95% CI 3.2 to 6.5) of pregnant women were found to be experiencing stress (K6 score $\geq$ 13) and in China 40.8% (95% CI, 35.5; 46.4) "depression" (EPDS score $\geq$ 10) at varying intervals up to 18 months after direct exposure to an earthquake. Meta-analyses were precluded because of the heterogeneity of the studies, but the variation was potentially attributable to differences in access to post-disaster services. Three studies included assessment of the quality of relationship with an intimate partner as a mediator of the link between experience of an earthquake and pregnancy mental health. Higher "marital satisfaction" and quality of relationship appeared protective, whereas higher conflict was associated with more depressive symptoms. None of these studies assessed experiences of intimate partner violence.

Khatri et al. (2018) then investigated, 8 months after the 2015 Nepal earthquakes, the mental health of women aged at least 15 years who had been pregnant at the time of the earthquake and living in Bhaktapur, one of the most highly affected districts in Nepal. In order to enable women with low literacy to participate, data were collected by local health research workers in individual structured interviews. Clinically significant symptoms of CMDs were ascertained using the Nepali validation of the Edinburgh Postnatal Depression Scale (EPDS-N). Experiences of the earthquake were assessed with study-specific questions about property damage, impact on daily life, domestic relocation, personal experiences of or witnessing others being trapped or injured, and bereavement. Relationship with the intimate partner since the earthquake was assessed using a standardized scale to ascertain perceptions of how effectively their partner was able to understand and meet their emotional needs and to express affection. Experiences of controlling behaviors and physical, sexual, or emotional abuse were assessed using the pregnancy module from the World Health Organization's Multi-Country Study on Women's Health and Violence Against Women Questionnaire.

Eligibility criteria were to have been pregnant and living in Bhaktapur at the time of the earthquake. Potential participants were identified through health services, female community volunteers, and peers. In total 497 women (a 99.7% recruitment fraction) agreed to participate and contributed data (Khatri et al. 2019). Among them, 17.1% had scores from 10 to 12 on the EPDS-N and 21.9% scored more than 12, indicating that nearly 40% were experiencing clinically significant depressive symptoms. Mean EPDS-N scores were higher, indicating worse mental health, among women who had more severe earthquake experiences and who had received no earthquake-related practical or emotional, social support. However, the greatest contributor to severity of symptoms was experiences of intimate partner violence. One in four participants had lifetime experiences of physical and/or sexual abuse and higher proportions of emotional abuse or controlling behaviors within their relationships with an intimate partner. Each form of violence was associated with increased severity of CMD symptoms, but emotional abuse, which includes belittling, humiliation, and threats of harm, had the most severe impact. Mental health was protected among whose partners were experienced as kind, trustworthy, and who had a shared approach to problem-solving.

Together these data indicate that IPV can increase, or be experienced for the first time following a natural disaster, and that it is linked consistently with increased risk of mental health problems among survivors. This is especially problematic for women who are already experiencing the adaptive challenges of being pregnant or caring for infants during the disaster and whose needs for practical and emotional support are therefore heightened.

Migration from a Refugee-Like Background, Intimate Partner Violence, and Perinatal Mental Health

High proportions of the world's population are living in nations characterized by fragility, conflict, and violence (Bank) and experiencing the profound social disruptions to homes, livelihoods, communities, access to essential services, and safety that these incur. In 2017 it was estimated by the United Nations High Commissioner for Refugees that more than 65 million people had been forcibly displaced worldwide because of persecution, civil conflict, violence, or human rights violations. These reflect long-term conflicts in countries including Somalia and Afghanistan which lead to mass departure of refugees and new conflicts or fragile states in Syria, South Sudan, and Yemen, where many people flee violence and the difficulties in finding permanent solutions for already displaced populations.

In addition, each year, an estimated 800,000 women and children (DoSomething) are trafficked across international borders, and more are trafficked within countries, usually for sexual exploitation or domestic servitude. Some sex trafficking is highly visible, but many victims of trafficking are unseen, working in unmarked brothels in suburban neighborhoods.

Women and children who are displaced experience often-desperate circumstances, without adequate food, clothing, or housing. They can be detained and separated from their families in the confusion of escape. Language barriers make it difficult for children and their families to seek the help they need. Legal barriers can prevent them from accessing education, health care, and other services. These obstacles are magnified for the 70,000 children who are born stateless every year, often as a result of their parents' migration. On arrival in a new country, they can experience a "climate of xenophobia" due to political rhetoric painting refugees as terrorists or beggars.

Rees et al. (2019) are undertaking one of the world's first cohort studies of women from conflict-affected or refugee backgrounds who were recruited while pregnant and receiving antenatal care at three major public hospitals in Australia. In total 1335 women (685 from conflict-affected backgrounds and 650 born in Australia) contributed baseline data, which were collected in individual interviews using standardized measures of experiences of interpersonal violence, traumatic life events, and depression and other mental health problems. Interviews were administered in the participant's first language to enable those not fluent in English to contribute.

Participants were from diverse conflict-affected nations including Iraq, Lebanon, Sri Lanka, and Sudan, some traveling to Australia as refugees. Women who identified as refugees had experienced more lifetime traumatic events, for example, being badly beaten by their parents or another caregiver during childhood; having experienced a life-threatening accident, or illness; been threatened with a weapon; or having someone close to them die in an accident or by homicide or suicide, than women born in Australia. They had also experienced higher rates of psychological intimate partner violence (42.9%) than locally born women (20.5%, $p < 0.001$). A greater proportion of women who identified as refugees (22.5%) were experiencing multiple economic stressors than women born in Australia (6.3%, $p < 0.001$). The prevalence of major depressive disorder was 14.5% for women born in the host nation compared with 32.5% for women who identified as refugees. In regression analyses, the risks associated with major depressive disorder were identifying as a refugee (AOR 1.57; 95% CI 1.07 to 2.30); not having paid work (AOR 1.44; 95% CI 1.03 to 2.03); having experienced at least two traumatic lifetime events (AOR 2.13; 95% CI 1.47 to 3.08); severe psychological IPV (AOR 1.62; 95% CI 1.18 to 2.23); physical IPV (AOR 4.64; 95% CI 2.78 to 7.74); low levels of support (AOR 1.78; 95% CI, 1.16–2.72); and finance-related stressors (AOR, 1.87; 95% CI 1.31 to 2.66).

Together these data reveal that in humanitarian crises following natural disasters or armed conflict, many women who are pregnant also experience violence perpetrated by an intimate partner, some for the first time (Zeid et al. 2015). These experiences have direct adverse effects on perinatal mental health. Reflecting these realities, Zeid et al. (2015) conclude in their position paper on the health of women and children in humanitarian and other crises that interpersonal violence warrants comprehensive consideration in disaster responses.

Conclusion and Implications

The mechanisms by which gender-based risks, including experiencing violence perpetrated by an intimate partner, contribute to mental health problems in women have been considered in theories about the social origins of depression. Brown and

Harris (1978) concluded from systematic investigations of women living in situations of chronic adversity in public housing in London that social circumstances are crucial to psychological state. Depression they asserted is a consequence of co-occurring experiences of entrapment and humiliation. It was generally precipitated by a severe adverse life event, chronicity being associated with having experienced childhood maltreatment, but most importantly the quality of relationship with an intimate partner: specifically, by inability to confide, or "negative verbal or behavioral responses" toward disclosures or expressions of heightened need.

A household is optimally a place in which there is physical and psychological safety and in which people can trust that they will be responded to with sensitivity and care. Childhood maltreatment and intimate partner violence are a complete contravention of this and involve inability to escape (entrapment) and breach of trust (subordination and humiliation). It violates women's and girl's rights to liberty, security of person, and freedom from fear and thereby constitute a major rights transgression. There are clear adverse impacts on the mental health of women who are pregnant or have recently given birth.

The Sustainable Development Goals (see Box 3) (2016–2030) (United Nations Organization 2015) signed by the United Nations member states include four targets for interpersonal violence.

Box 3 Sustainable Development Goal Targets for Violence Against Women and Girls

- Target 5.2 to eliminate all forms of violence against women and girls
- Target 5.3 to eliminate all harmful practices against women and girls
- Target 16.1 to reduce significantly all forms of violence and related deaths everywhere
- Target 16.2 to end abuse, exploitation, trafficking, and all forms of violence against children (United Nations Organization 2015)

Comprehensive strategies and sustained actions are required to reduce interpersonal violence against women and girls and prevent mental health problems among them. The World Health Organization's Global Status Report on Violence Prevention (2014) identified that most countries lack local evidence about prevalence and determinants to inform policies and strategies and that without these, strategies are much less likely to be effective and cost-effective.

Mikton et al. (2017) completed a Delphi consultation among 280 international experts about priorities for reduction in interpersonal violence. The highest priority was to develop, implement, and evaluate well-informed interventions. Identifying risk and protective factors and the causes and correlates of violence was ranked as the second priority, but that at present scaling up and evaluating interventions ranked lowest because at present there is still insufficient evidence of effectiveness.

Box 4 Seven Promising Strategies for Preventing Violence

1. Developing safe, stable, and nurturing relationships between children and their parents and caregivers
2. Developing life skills in children and adolescents
3. Reducing the availability and harmful use of alcohol
4. Reducing access to guns and knives
5. Promoting gender equality to prevent violence against women
6. Changing cultural and social norms that support violence
7. Victim identification, care, and support programmes (Source: World Health Organization 2014; Mikton et al. 2017)

Despite the limits to evidence, the World Health Organization recommends seven strategies which on the basis of available evidence are promising (see Box 4).

The implications for clinical services are that any strategies to screen for perinatal mental health problems have to be implemented taking the risk factor of experiences of interpersonal violence into account (Rees and Fisher 2016). This requires careful consideration of how, where, and by whom enquiries about mental health, risk, and protective factors for mental health problems and current and past social circumstances are made. Trauma-informed services require specifically trained and skilled general and specialist staff who are able to enquire about past and recent traumatic experiences and respond appropriately to disclosures.

The World Health Organization emphasizes that the extent and complexity of interpersonal violence against women and girls requires multi-sectoral, collaborative national, regional, and global violence prevention efforts.

Cross-References

- ▶ Evidence-Based Interventions for Mental Health Consequences of Intimate Partner Violence
- ▶ Mental Health Consequences of Sexual Assault
- ▶ Refugees and Asylum Seekers
- ▶ Suicide and Suicidal Behavior in Women

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Part VI

Topical Issues

Personality Disorders in Women: An Overview

18

Poornima Bhola and K. Dharani Devi

Contents

Abstract

Personality disorders represent enduring patterns of difficulties in ways of thinking, feeling, and behaving that deviate from cultural expectations and typically emerge in adolescence or early adulthood. The associated distress

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_27

and impairment associated with these complex vulnerabilities impact relationships, work, and the sense of self and present significant treatment challenges. Using a gendered lens can provide a more nuanced view of the interface between gender and personality vulnerabilities. This perspective can reveal the ways in which content and approaches are “gendered,” informed by, shaped by, or biased toward men’s or women’s perspectives or experiences. In this chapter, we use a critical reflective stance to unpack and interrogate the meaning of gender, spanning the process from diagnosis to treatment of personality disorders. The gender inequalities in rates and diagnoses of personality disorders are critically examined. The expressions of personality vulnerabilities and the therapeutic process are viewed through the lens of culture. The importance of understanding developmental psychopathology pathways and intergenerational transmission of personality dysfunction among women is emphasized. Contemporary, and sometimes divergent, perspectives on the diagnostic models and approaches for personality disorders are explored. These include the changes in diagnostic nomenclature and positioning, the pulls between categorical and dimensional approaches, and the emergence of transdiagnostic frameworks. Although the debate on the intersections between PTSD, complex PTSD, and borderline pathology continues, the centrality of trauma in working with these vulnerable women is evident. In thinking about all these questions, we examine the implications for sensitive and informed assessment and intervention frameworks.

Keywords
Personality disorder · Women · Gender · Dimensional personality · Culture · Developmental psychopathology

Introduction

Personality disorders represent enduring patterns of difficulties in ways of thinking, feeling, and behaving that deviate from cultural expectations and typically emerge in adolescence or early adulthood. The associated distress and impairment associated with these complex vulnerabilities impact relationships, work, and the sense of self and present significant treatment challenges. Using a gendered lens can provide a more nuanced view of the interface between gender and personality vulnerabilities among women. This perspective can reveal the ways in which content and approaches are “gendered,” informed by, shaped by, or biased toward men’s or women’s perspectives or experiences. In this chapter, we use a critical reflective stance to unpack and interrogate the meaning of gender, spanning the process from diagnosis to treatment of personality disorders. In thinking about these questions, we examine the implications for sensitive and informed assessment and intervention frameworks for these vulnerable women.

Rates of Personality Disorders: Understanding Gender Inequalities

Research on personality disorders in nonclinical community samples across countries typically reveals prevalence rates of 4.50–21.50% (Gawda 2018), with variations depending on sampling, measurement, and the cultural context. Many of those with personality vulnerabilities do not reach mental health-care services, and their difficulties remain unaddressed. Community-based prevalence estimates and an examination of any gender inequalities can help in planning for mental health-care services to bridge the treatment gap and allocate resources in response to needs (Quirk et al. 2017). An examination of gender inequalities in the rates and patterns of personality disorders seeks to understand both what is experienced differently *and* what is common to both genders. In doing so, we shift from the oversimplified "men are from Mars, women are from Venus" stance (Gray 1992) and situate our search for answers in a more complex and multidimensional space.

While borderline personality disorder, histrionic personality disorder, and dependent personality disorder are more commonly diagnosed among women, antisocial personality disorder, narcissistic personality, and obsessive-compulsive personality disorder are diagnosed more frequently among men (Holthausen and Habel 2018; Paris 2004). The largest gender differences are seen in antisocial personality disorder (female:male 1:3) and borderline personality disorder (female:male 1:3), with a large proportion of the research focusing on these two personality disorders. Some personality disorders, such as avoidant personality disorder, do not demonstrate prominent gender differences.

The marked female preponderance in borderline personality disorder appears to be more clearly evident in clinical settings (Widiger and Trull 1993). Some community-based studies (e.g., Lenzenweger et al. 2007; Torgersen et al. 2001) reported no significant gender differences, although women with borderline personality disorder had greater functional impairment in one study (Grant et al. 2008). There are many potential explanations for the discrepancy across clinical and community settings; one possibility is the use of less precise methods of data acquisition (use of self-report measures, less experienced raters) in community-based studies. Another viewpoint is that women may be diagnosed more frequently in clinical settings, in part due to their higher treatment-seeking rates as also due to any latent diagnostic biases.

Are the purported gender differences in rates of some personality disorders "true differences," or are they related to some invisible or more obvious form of bias? This "long-standing and often emotionally charged controversy" about the differential prevalence of personality disorders across gender (Corbitt and Widiger 1995, p. 234) is examined in the next section.

Making the Personality Disorder Diagnosis: Does Gender Matter?

The gender differences in the rates of some personality disorders have been said to mirror gender differences seen in the associated personality traits (Corbitt and Widiger 1995; Paris 1998). Any "true differences" between men and women would be the culmination of complex interactions between biological, social, and cultural processes. Others assert that the biases in the diagnostic criteria and their applications are strong contributors to the skewed gender ratios that are particularly evident in borderline and antisocial personality disorders (Ford and Widiger 1989; Kaplan 1983).

The diagnostic constructs and criteria for personality disorders have been critiqued for their inherent biases (e.g., Ussher 2013); the constructs for borderline and histrionic personality disorders have been viewed as sexist characterizations of women. The diagnostic criteria have also been closely examined as reflecting extreme versions of traits and behaviors that are traditionally ascribed to women. There have been several proposals for changes in diagnostic criteria so that they are gender-neutral or at least equally applicable to both genders. For example, Kaplan (1983) suggested that the criteria for dependent personality disorder should also include masculine representations of dependency. Similarly, there was concern that the overemphasis on aggression in the criteria for antisocial personality disorder may lead to an underdiagnosis among women. The diagnostic thresholds in the *Diagnostic and Statistical Manual of Mental Disorders* (DSM) are not guided by any explicit or stated rationale, and this allows for different thresholds being applied for men and women. For instance, clinicians have the leeway to decide how and what constitutes “potentially damaging impulsivity related to sex” or “unstable and intense interpersonal relationships” as criteria for diagnosing borderline personality disorder. It is possible that clinicians’ judgments would vary for women and men; most often these biases would operate out of conscious awareness.

Clinician bias in the application of diagnostic criteria for personality disorders has received much attention. Several studies have shown how clinicians tended to diagnose histrionic, borderline, and dependent personality disorders more among women and antisocial personality disorder among men, even when the symptom information was identical (e.g., Sprock et al. 2001). These biases are more likely when there is ambiguity (Braamhorst et al. 2015), and the clinician’s tilt may also be influenced by the base rates of the disorder (Ford and Widiger 1989). Kaplan (1983) asserted that women who displayed either highly stereotypical feminine behaviors or those who underconformed were more readily labelled by clinicians as having a personality disorder. The tolerance for expressions of anger and sexuality may differ for men and women (Barrett and Bliss-Moreau 2009). This suggests that the boundaries of acceptable behavior for women may be quite narrowly defined, in the clinic as in society.

Another potential bias in the diagnostic decision-making process relates to the willingness or reluctance to acknowledge particular kinds of symptoms, attitudes, and experiences. For instance, men might hesitate to reveal dependency needs or express them in subtle or indirect ways, and this increases the risk of missing a diagnosis of dependent personality disorder.

Both overt and subtle manifestations of stigma surround the diagnosis of personality disorders (Ring and Lawn 2019), and this is often magnified by gender bias. Mental health practitioners are certainly not immune; persons with certain diagnoses like borderline personality disorder and histrionic personality may be considered "manipulative," "dramatic," "seductive," or "dangerous" (e.g., Ussher 2013). Negative attitudes among clinicians working with this vulnerable group could result in a minimization of their patients' difficulties while overlooking their strengths (Aviram et al. 2006). A sense of therapeutic nihilism and distancing on the part of some therapists can begin a cycle of stigmatization and perceived discrimination, which may directly contribute to poor outcomes (Aviram et al. 2006). Another worrying pattern is the hesitation about disclosing the diagnosis of personality disorder to a patient. Lequesne and Hersh (2003) discuss compelling reasons for open examinations and discussions about the diagnosis, in the interests of the recovery process.

Clinicians would benefit from expanded training to engage with the complexities of working with personality disorders. This should include opportunities to examine and critique their diagnostic decision-making process and reflect on their personal values, assumptions, and biases. It is true that working with personality disorders can be challenging and requires commitment to a long-term, continuously evolving, often difficult process, while medical management is certainly no panacea. Both trainees and mental health practitioners may experience difficulties, particularly if they have not received skills training, and are unaware of available evidence-based effective therapies. There is emerging evidence that even brief workshops targeting clinician attitudes about persons with personality disorder can be impactful (Keuroghlian et al. 2016).

Working with personality disorders offers the possibility of deep and meaningful engagement and the opportunity to strengthen professional skills. If therapists operate from a position of empathy and recognize their patients' strengths and resilience in the face of developmental and ongoing challenges, they can be co-travellers in the process of change and recovery. The process of professional growth can be strengthened by examining how cultural beliefs and assumptions operate to influence how we view and respond to personality vulnerabilities among women.

Personality Disorders Through an "Enculturated" Lens

The lenses of gender are embedded in our cultural discourses and social institutions; and this "enculturated lens" (Bem 1993) is evident in mental health practice as well. As culture shapes personality, it will inevitably shape personality disorders as well. Cultural processes and biases can influence the diagnostic labels, manifestations, and treatment of personality disorders.

Culture, Gender, and the Expression of Personality Disorders

Cultural frames of reference can have a powerful impact on what behaviors are valued and which ones are discouraged or considered nonnormative. Culture can be an interpretative or explanatory tool for behaviors that might otherwise be mislabelled as pathological (Alarcon and Leetz 1998). For instance, cultural expectations of women and their roles and deeply embedded gender-power hierarchies foster and maintain dependency in certain contexts. In persons from collectivistic cultures that value interdependence and deference to authority, the diagnosis of dependent personality disorder must be made after a “cultural translation” of the diagnostic criteria (Chen et al. 2009). In contrast, individualistic cultures may consider dependent traits as pathological at a lower threshold, with an opposite response to narcissistic traits (Paris 1998).

Cultural processes have been implicated in increasing vulnerability to personality disorders as well as in serving a protective function. Sociocultural factors can influence the developmental trajectories of individuals, either by increasing the impact of existing disadvantages or by creating vulnerabilities for a specific group of individuals. Gender inequalities and disadvantages exist across all cultures; women tend to have limited spheres of decision-making and constraints on their choices and are more vulnerable to abuse and trauma (Putnam 2003). The range of difficulties experienced through the developmental trajectory may increase their vulnerability to the development of certain personality disorders. It is also possible that the protective or survival strategies used by women may be pathologized and behaviors viewed as symptoms particularly when they are inconsistent with traditional sex roles (Sprock et al. 2001) or deviate from cultural expectations.

Traditional or collectivistic societies with their strong relational ties have also been regarded as conferring some advantages. Social structures may buffer against the development of psychopathology (Paris 1998), and any emergent personality difficulties may be contained within the family unit or subcultural group at least for some time (Ronningstam et al. 2018). Although Paris (1998) quoted indirect evidence to suggest lower rates of borderline personality disorder in traditional societies, there are few epidemiological studies in non-Western contexts to support this assertion. Although there is no denying the protective influence of social structures in collectivistic cultures, the same cultural frame can also increase the risk for personality dysfunction. The emphasis on closeness and interpersonal harmony means that persons may be more sensitive to disruptions in relational contexts. This may be particularly salient for women, who tend to define themselves in the context of relationships and judge themselves in terms of their ability to care (Gilligan 1982). In patriarchal societies such as India, the patterns of female infanticide, male-child preference, differential treatment of girls in the family, the involvement of male members (father, brother) in decision-making, and social structures against divorce could increase vulnerability and risk for girls and women. In the study by Narayanan and Rao (2018), women with personality disorders described limited freedom to choose the timing of their marriage or to make independent decisions about working after marriage. Conflicts between individual values and needs and existing cultural belief systems may result in increased tensions. The rapid pace of change in transitional societies, with geographical and social mobility, and family breakdown, can increase the vulnerability to personality disorders (Paris 1998; Ronningstam et al. 2018). An associated implication is that personality disorders will present differently in subcultural spaces or “local worlds” and across historical periods (Ryder et al. 2015).

Even when there is no difference in prevalence rates across cultures, sociocultural forces may also have *pathoplastic* effects, shaping the symptom profiles and expression of personality disorders (Jani et al. 2016; Paris 1998). The cultural variability in emotional expression is one example; externalized representations of emotions may be discouraged in traditional societies which promote conformity and emotional restraint. In a qualitative study in India, Narayanan and Rao (2018) discussed how internalized emotions (anxiety, sadness) were more prominent among women with a personality disorder, rather than acting out or aggressive behaviors. These internalized presentations may lead clinicians to miss the diagnosis and result in consequent delays in treatment (Ronningstam et al. 2018).

In the next section, we examine how the intersections of gender and culture can enter the therapy room and influence interactions between the therapist and the patient diagnosed with a personality disorder.

Culture, Gender, and Interventions for Personality Disorders

The cultural norms of the therapist and the patient particularly concerning distance and intimacy in relationships can be strong influences on the relational style and boundaries of their interaction. In cultures where relational boundaries are more fluid, therapists have to reconcile patient expectations with their understanding about professional and ethical mandates about boundary management. This tension may be more pronounced during the process of boundary negotiation with Cluster B "dramatic" personality disorders (antisocial, borderline, histrionic, and narcissistic) which are all characterized by pushing of limits.

Additionally, during the therapeutic process, and particularly with women, clinicians may respond with defensiveness or an evaluative eye to disclosures about expressions of sexuality (Alarcon and Leetz 1998). Practitioners would benefit from an examination of their own personal-cultural values concerning expressions of sexuality, "nontraditional" relationship choices, and individuation processes, both for their male and female patients.

The issue of gender-matching of therapist and patient has not been examined deeply and needs further attention. In one study (Tan et al. 2018), a proportion of male and female patients with personality disorders reported discomfort in discussions about intimate and sexual material with an opposite-gender therapist. Löffler-Stastka et al. (2006) found that women with borderline personality disorders in gender-matched patient-therapist dyads gained more insight into their problems and were more engaged in therapy. The authors also reported that it was difficult to engage men effectively in the therapeutic process. Although these conclusions are derived from a small sample of men and women in therapy, it reminds us that gender-sensitive therapy processes are needed to connect and work with both genders.

The implications for training are many, and these will enable therapists to situate the problems and the therapeutic work in the "enculturated" context. The lens can guide therapists in their understanding and interpretations of their patients' lives, attend to therapy processes, and reflect on modifications needed to attune to gender and cultural factors. Strong countertransference reactions may emerge in the therapeutic work and may be associated with blocks in therapeutic progress, boundary violations, and premature termination. Training and supervision that supports mental health practitioners in honing their awareness of countertransferential reactions is necessary. As a pantheoretical construct, countertransference is no longer confined to clinicians working within a psychodynamic frame; the examination of therapists' emotional reactions is a legitimate arena for practitioners with varied theoretical persuasions.

Research on therapeutic interventions for personality disorders has focused largely on borderline personality pathology. Most studies of therapy process and outcome from Western cultures focus on individual interventions, and this is in contrast to practice settings in India where adjunctive family interventions, both to address pathology or harness strengths and support, are not infrequent. In collectivistic cultures, families are an integral part of the help-seeking pathway, the developmental stories, and the lives of their adult children with personality vulnerabilities. As therapies are transplanted in varied setting, culturally sensitive translations must be made.

In the next section, we present frameworks to explain what makes persons vulnerable to developing personality disorders and examine any gender differences concerning risk factors, developmental histories, and symptom expression. This understanding can guide efforts toward treatment, prevention, and advocacy.

Developmental Psychopathology Models and Pathways for Personality Disorders

Developmental psychopathology models use a life course perspective and explain the interrelated genetic/biological, environmental, and parenting factors that contribute to the emergence and expression of mental health outcomes. We will look at borderline personality disorder as an exemplar of the research in this area. A few developmental psychopathology models, the biosocial model (Linehan 1993) and the mentalization-based model (Fonagy and Bateman 2008), trace the trajectory of adult borderline pathology from childhood vulnerabilities, genetic/biological factors (e.g., inherited theory of mind capacities), temperamental or trait factors (e.g., negative affectivity, emotional sensitivity), and repeated interactions with adverse environmental influences (e.g., emotional invalidation, childhood adversities, trauma). These explanatory frameworks connect early caregiving disruptions and childhood adversities to the relational, emotional, and self-identity difficulties experienced in adulthood.

These complex dynamic models describe developmental trajectories traced back to infancy and provide focal areas for intervention; the biosocial model emphasizes emotion regulation difficulties, while reflective functioning (the ability to think about thinking) has a central position in the mentalization-based model. Consistent evidence has emerged for the effectiveness of treatment approaches such as dialectical behavior therapy (DBT) and mentalization-based therapy (MBT) that are based on these developmental models. The life course perspective implies that therapeutic approaches may need to address multiple areas of long-standing vulnerability, and this will necessarily involve a longer duration of intervention. Therapies for borderline personality disorder emphasize a long duration of treatment, with individual and group formats over a period of 12–18 months. Knowledge about these troubled life stories of persons with borderline personality disorder can help clinicians in different ways. For one, this could increase clinicians' understanding of why building an alliance, anticipating ruptures, and working toward repair are so critical to the therapeutic process. The importance of the therapeutic alliance has been emphasized in both the DBT and MBT process. In Linehan's words, "The relationship in DBT has a dual role. The relationship is the vehicle through which the therapist can effect therapy; it is also the therapy" (1993, p. 514). More importantly, as clinicians conduct a sensitive exploration of their patients' early experience, they may experience a shift from viewing them as "difficult" to recognizing and empathizing with their struggles in the face of "difficult experiences."

When we look to situate gender in the developmental trajectories of borderline pathology, the extant models do not outline differential risks or pathways for girls/women and boys/men. Research examining gender differences in risk factors/trauma histories, symptom expression, and patterns of comorbidity offers patchy information; many studies include only women or have an overrepresentation of women; some have relatively small sample sizes or do not analyze by gender.

Research confirms that childhood adversities such as neglect; physical, sexual, emotional, and psychological abuse; parental psychopathology; difficult family environments; and temperamental vulnerabilities are implicated in the histories of most individuals diagnosed with a personality disorder (e.g., Widom et al. 2009; Zanarini 2000). The Collaborative Longitudinal Personality Disorders Study (Johnson et al. 2003) reported similarities in rates of childhood abuse experienced by men and women who met criteria for borderline personality disorder. To speculate, the higher prevalence and severity of childhood sexual abuse among women (Putnam 2003), particularly abuse that involves a caregiver, could in part be associated with the gender imbalance in rates of borderline personality disorder. Girls are more sensitive to the quality of parenting and family environment (e.g., Zahn-Waxler et al. 2008), and this may also be part of the explanation for higher rates of borderline personality disorder reported among women.

Gender differences in the experience and response to abuse were examined by Godbout et al. (2019) who found that men and women experience parental abuse differently; both maternal and paternal maltreatment were directly associated with borderline symptoms among women, whereas among men, only paternal maltreatment was directly linked with borderline symptoms. Opposite-gender parental abuse (father-daughter, mother-son) was indirectly linked with borderline symptoms through attachment anxiety, for both men and women.

Some studies have tried to identify divergent gender-linked pathways by examining how difficulties manifest in childhood and adolescence. The pattern of internalizing difficulties among girls contrasts with externalizing manifestations among boys (e.g., Bradley et al. 2005). This makes it less likely for women to develop antisocial traits and more likely to exhibit borderline, narcissistic, and histrionic traits (Crawford et al. 2001). We note a similar trend in symptom expression; women diagnosed with borderline personality disorder exhibit less impulsivity, more affective instability, feelings of emptiness, and suicidal behavior than do men (e.g., Hoertel et al. 2014).

Gender differences are also present in the patterns of comorbidity among persons diagnosed with borderline personality disorder. Women with borderline personality disorder tend to have greater lifetime prevalence of eating disorders, somatoform disorders, and depressive disorders when compared to men, all disorders with internalizing manifestations (Silberschmidt et al. 2015; Sansone and Sansone 2011; Zlotnick et al. 2002). Substance abuse disorders, intermittent explosive disorder, and ASPD tend to be common comorbidities among men with Borderline Personality Disorder (Johnson et al. 2003; Sansone and Sansone 2011; Zlotnick et al. 2002). These gender differences in symptom expression and patterns of comorbidity may be influenced by biological factors (e.g., levels of autonomic arousal, serotonin sensitivity, and brain activity in the frontal areas), as also socialization processes. In comparison to men, women are taught to value interpersonal connectedness and control expressions of aggression (Skodol and Bender 2003).

An alternate viewpoint holds that the gender differences that exist in the general population are attenuated by certain personality disorders (Johnson et al. 2003; Silberschmidt et al. 2015). These studies suggest that the clinical presentations of men and women with borderline personality disorder are more similar than different and tend to obscure some of the expected differences. For example, suicidality is expected to be higher among women in the general population, while aggression and substance abuse are more common among men. However, Silberschmidt et al. (2015) reported no such differences between men and women who met criteria for borderline personality disorder.

The developmental perspective has many implications for the way we understand and work with personality disorders. An emergent debate has been the suggestion that antisocial and borderline personality disorders reflect multifinal outcomes of shared risk factors (Beauchaine et al. 2009; Paris 1997). Support for this position has come from the similarities in risk factors (e.g., childhood abuse and neglect) and overlapping symptoms such as emotional instability and high rates of associated depression and suicidality. Beauchaine et al. (2009) proposed that common vulnerabilities in environmental risk factors and inherited trait impulsivity interacted with deviant peer affiliations in later childhood and adolescence resulting in a borderline trajectory for girls and an antisocial trajectory for boys. Viljoen et al. (2015) examined whether psychopathic and borderline personality disorders were distinct or differently gendered expressions of the same disorder and concluded that there was not enough evidence for the multifinality hypothesis. Future studies, particularly those with a longitudinal design, could enhance our understanding about developmental pathways leading to personality dysfunction.

Research has identified many developmental precursors of adult borderline personality disorders, and this connects with the debate about diagnosing borderline pathology in adolescence. In most clinical settings, personality disorders are diagnosed after 18 years, and there is considerable resistance to "labelling" a younger person with a diagnosis that has negative connotations and uncertain prognosis. Adolescence is considered a time of inevitable problems and potentially transient disruptions, and it has even been said that all adolescents are "a bit borderline" (Paris 2014). So, even when clinicians note emotional and behavioral difficulties indicative of borderline pathology among adolescents, they may hesitate to code a personality disorder. Anecdotal accounts suggest that clinicians may use terminology such as "borderline traits" or "evolving personality disorder" in clinical records, suggesting that borderline features are manifested during adolescence. When we look at the DSM-5 classification system, it allows for the application of personality disorder categories to adolescents when maladaptive traits are pervasive and persistent, unlikely to be explained by an episode of Axis 1 or limited to the particular developmental stage. There is also a 1-year duration criterion and the caveat that this diagnosis must be applied in "relatively unusual instances."

Sharp and Fonagy (2015) built a case for diagnosing borderline personality disorder in adolescence using validated assessment measures, albeit with caution. Using a developmental psychopathology lens, they recommended further assessment in adolescents with a mixture of internalizing and externalizing difficulties, in the context of other known correlates of borderline pathology. Proactive assessment and early interventions could identify vulnerable youth and present a chance to modify difficult developmental trajectories. Sharp and Fonagy (2015) also pointed to the emerging evidence for DBT and MBT interventions that have been adapted for use with adolescents. While a formal diagnosis of borderline personality disorder among adolescents is still uncommon in many clinical settings, select researchers and clinicians are trying to consolidate enough evidence to change "entrenched" attitudes (Sharp and Fonagy 2015). As we follow this controversial topic closely and examine the positions of various diagnostic frameworks and practice guidelines, further clarity may emerge for clinicians who work with children and adolescents.

Overall, the developmental psychopathology models do not explicate gender differences in early vulnerabilities, but there is some evidence that boys and girls may experience childhood adversities differently. Gender differences in patterns of symptom expression and comorbidities associated with borderline personality disorder can inform assessment and comprehensive treatment plans. Future research can help further illuminate the additive or synergistic effects of risk factors, mediating and moderating influences and complex developmental pathways leading to personality vulnerabilities.

Ghosts in the Nursery: Mothers with Personality Disorders

Parenting and Intergenerational Transmission of Borderline Personality Disorder

Several patterns of dysfunctional parenting behavior have been implicated in all developmental psychopathology models of borderline personality disorders. These "ghosts in the nursery" (Fraiberg et al. 1975) are likely to appear when adults with borderline personality disorder become parents themselves (Judd and McGlashan 2003). Most studies on parenting behaviors in persons with personality disorders have centered on borderline personality disorders and, barring a few exceptions (e.g., Johnson et al. 2006), have studied only mothers. Various influences may coalesce to create difficult child-rearing patterns among mothers with borderline personality disorder; these include their own experiences of being parented and their core dysfunctions in domains of emotion regulation, behavioral control, interpersonal interactions, and identity (Zalewski et al. 2014).

Parenting may present multiple challenges for persons with borderline personality disorder, and this can translate into an intergenerational transmission of vulnerabilities and psychopathology among the children (Reinelt et al. 2014). Further research on these parenting patterns and associated mechanisms and pathways can translate into interventions that could help impact these intergenerational trajectories.

Mental health practitioners have shared their perceptions of parenting problems among persons with borderline personality disorder (Bartsch et al. 2015); these include disruption of empathic responsiveness and understanding of the child's mental states, difficulty maintaining stable and safe environments, difficulty managing interpersonal boundaries with possible role reversals, parenting skill deficits, and poor parental efficacy Distinctive patterns of parenting among mothers with borderline personality disorder have been examined, such as oscillations between extreme forms of hostile control and passive aloofness (Stepp et al. 2011) or both an overprotective and a rejecting parenting style (Reinelt et al. 2014). Difficulties related to maternal sensitivity and intrusiveness seem to emerge in early mother-infant interactions (e.g., Hobson et al. 2005), and mothers experience doubts about their competence (Newman et al. 2007). Much of the research is in the infancy period with less relatively attention to childhood and adolescence.

Sensitive and informed comprehensive interventions, which encompass both parenting skills and attend to emerging vulnerabilities among children and adolescents, represent a strong emerging trend in working with personality disorders.

Mothers with Borderline Personality Disorder: Parenting Interventions

Interventions targeting parenting skills of mothers with borderline personality disorder have shown some promise (Florange and Herpertz 2019). These approaches include psychoeducational approaches and attachment-based interventions which include both psychotherapy with the mother and with the mother-infant dyad (Stepp et al. 2011). In addition to parenting skills, parental reflective functioning, which assesses the parent's capacity to notice, read, and interpret their child's emotional cues, has been a target in recent intervention programs.

The expansion of interventions for vulnerable women with borderline pathology needs to be strengthened with culturally contextualized approaches relevant for different developmental stages, along with a focus on assessment and early interventions for the child when needed. In a shift from the deficit perspective, intervention components could also benefit from information about adaptive parenting among parents with a diagnosis of borderline personality disorder (Bartsch et al. 2015). The relative absence of fathers, either as partner/co-parent or as the one with a diagnosis of borderline personality disorder, needs redressal (Reichl et al. 2017). As a starting point, clinicians need to have conversations with their patients about being a parent and provide the comprehensive care needed in this role.

The Counter-Narrative: Rethinking Diagnostic Labels for Personality Disorders

The process of diagnosing and thinking about personality disorders is undergoing radical changes at many levels, often accompanied by contentious debates and limited consensus.

Removal of Select Diagnostic Categories

There have been calls to remove various diagnostic categories, stemming from concerns about their conceptual clarity and validity, limited research evidence, the presence of heterogeneity within and occurrence of comorbidity across personality disorders, gender bias, and lack of cultural sensitivity. Blashfield et al. (2012) proclaimed the “death of histrionic personality disorder” and highlighted the associations between this label and stereotypically feminine behaviors. The label of dependent personality disorder has also been questioned for decades (Blashfield and Davis 1993). This emphasizes the ongoing tension between a gender- and culture-free nosology (with a largely biological focus) and a contextually relevant understanding of mental illness (van de Water et al. 2016). The diagnosis of dependent personality disorder is an exemplar, with prominent concerns about potential gender bias/stereotyping and inadequate sensitivity about the possible lack of fit in cultures that value dependence and submission (Chen et al. 2009).

In fact, the DSM-5 Personality and Personality Disorders Workgroup had recommended that five DSM-IV personality disorders (paranoid, schizoid, histrionic, narcissistic, and dependent) be eliminated as formal diagnostic categories, largely because of concerns about their validity and limited clinical utility (Bornstein 2011). In later discussions, the diagnosis of narcissistic personality disorder was retained. There was significant opposition to the sweeping changes initially recommended by the workgroup, and eventually, the DSM-5 retained all ten categories of personality disorders. The controversies about the DSM-5 categorization system are not completely resolved, but this may well be a starting point for more systematic research on personality pathology (Bornstein 2011). Future studies could include a closer examination of clinicians’ diagnostic decision-making processes, inclusion of stakeholder perspectives, and a focus on questions about possible gender differences and gender biases concerning personality disorders.

In countries which follow their own diagnostic system, e.g., the Chinese Classification of Mental Disorders, borderline personality disorder has been removed and replaced with a more culturally resonant "impulsive personality disorder" (IPD; Zhong and Freedom 2007). Males with IPD outnumbered females, with a 3:2 sex ratio, and this is at odds with the expected gender patterns of a borderline personality disorder diagnosis. There are alternate views (Wang and Xiao 2012) that support the presence of borderline personality disorder in China, recommending the examination of potential cultural differences in the phenomenology of this disorder and the addition of culture-specific diagnostic criteria.

The conceptual underpinnings of personality disorder categories are being questioned, and we can anticipate further changes in the number of diagnostic categories.

Axial Shifts in the Positioning of Personality Disorders

The division between Axis I clinical syndromes and Axis II personality disorders was based on purported differences in phenomenology, cause, and course. Ruocco (2005) was among those who questioned the separation of clinical syndromes and personality disorders, and the multiaxial system has been discarded in the fifth version of the DSM. Various arguments were proposed either for the elimination of this axial division or for a shift of select disorders such as borderline personality disorder and antisocial personality disorder into the Axis 1 umbrella (Gunderson 2013). One possible fallout of this shift could be the reduction in stigma experienced by those diagnosed with personality disorders. Unlike Axis II disorders, Axis I disorders are typically viewed as largely due to biological factors, with the person not held directly responsible for their actions (New et al. 2008).

Although this appears to be a positive shift, clinicians may have questions about which disorder to prioritize in the face of comorbidity. This reconceptualization also brings concerns about the dominance of "biological" etiologies and treatments, with less room for the complex psychosocial factors associated with the emergence of personality disorders. Many of these discussions have centered on borderline personality disorder, a condition that has been most widely researched. For instance, New et al. (2008) had argued for the inclusion of borderline personality disorder among Axis 1 mood disorders, citing evidence for the heritability of borderline personality disorder, and called for more neurobiological research to support their view. They also questioned the inevitability of a traumatic etiology for this disorder and saw this as a "misconception."

While a diagnosis is only part of our understanding of a person, the way it is conceptualized and positioned can skew the assessment and treatment process. Although personality disorders are no longer coded on a separate axis, mental health practitioners must continue to be sensitive to the interrelated psychosocial factors associated with the trajectories of personality disorders. Developmental psychopathology models of personality disorders emphasize complex interconnected vulnerabilities and struggles through the life course.

There is a growing movement which places chronic interpersonal trauma at the center of our understanding of borderline personality disorder, and this has led to further questions about diagnostic nomenclature.

Borderline Personality Disorder or Complex Post-traumatic Stress Disorder?

Complex post-traumatic stress disorder (cPTSD) refers to the constellation of symptoms resulting from prolonged, chronic exposure to traumatic experiences, especially in childhood, as opposed to PTSD which is more typically associated with a discrete traumatic incident or set of traumatic events. Unlike PTSD, complex PTSD encompasses dysregulation in emotion processing, self-organization (including bodily integrity), and relational security (Ford and Courtois 2014). First described by Herman (1992), it has now been legitimized in the forthcoming ICD-11 diagnostic classification system while remaining out of the DSM ambit.

The intersections between PTSD, cPTSD, and borderline personality disorder have been the subject of much research and academic debate, with trauma and traumatic victimization as shared vulnerabilities. Adverse childhood experiences are present in other personality disorders as well (Afifi et al. 2011), but these have been studied most extensively in borderline personality disorder. However, despite evidence for developmental histories of trauma among persons diagnosed with borderline personality disorder (Bandelow et al. 2005; Golier et al. 2003; MacIntosh et al. 2015), the diagnostic criteria for the disorder make no reference to this. Kulkarni (2017) offers a strong critique of this decontextualized view of the experience of distress, one which locates both distress and difficulty firmly within the individual. The use of complex PTSD as an alternative label for borderline pathology, or as a major subset of the borderline personality disorder diagnosis (Kulkarni 2017), is seen as a positive step toward reducing stigma and providing gender-sensitive trauma-informed care.

There are divergent perspectives on the relabelling of borderline personality disorder as cPTSD; the similarities in phenomenology and gender distribution are emphasized by those who support this shift. Similar to borderline personality disorder, the diagnosis of cPTSD is more common among women than men. Research suggests gender differences, with girls more vulnerable to experiences of multiple traumas over a longer duration, with increased risk for high-betrayal traumas and later-life traumas (Golier et al. 2003; Yen et al. 2002). Kulkarni (2017) also pointed to similarities in phenomenology between borderline personality disorder and cPTSD, with symptoms of emotional dysregulation and dissociation leading to behavioral correlates like deliberate self-harm and rage.

Interesting counterpoints and explanations for the links between borderline personality disorder, PTSD, and cPTSD have been put forward by various researchers. Golier et al. (2003) pointed to inadequate evidence to support singling out borderline personality disorder, from other personality disorders, as a trauma spectrum disorder or PTSD. Further, they speculated that key symptoms of impulsivity and chaotic interpersonal relationships may put persons with borderline personality disorder at greater risk for victimization or trauma, *indirectly* increasing their risk for PTSD. MacIntosh et al. (2015) argued that conflating risk (trauma) with causation of borderline symptoms is problematic, and in this process, the multidimensional etiology of borderline personality disorder may be neglected. Unresolved trauma, affect dysregulation, and interpersonal distress were seen as shared vulnerabilities across PTSD, cPTSD, and borderline personality disorder. Their recommendations included the need to assess, explore, and address these difficulties using a transdiagnostic perspective, rather than focusing on categorical diagnoses. Overall, MacIntosh et al. (2015, p. 235) concluded that borderline personality disorder is, likely, "both a disorder of personality and a disorder of trauma."

The debate continues, with some researchers proposing that cPTSD be viewed as a distinct clinical entity (Cloitre et al. 2014), while others (Ford and Courtois 2014) recognize the overlap but caution against conceptualizing cPTSD either as a replacement for or as a sub-type of borderline personality disorder. With the introduction of cPTSD as a diagnostic category in the ICD-11 and the emerging differences across the ICD and DSM systems, these conversations are likely to continue.

The juxtaposition of borderline personality disorder with diagnostic categories centered on trauma has helped both clinicians and researchers engage deeply with questions about how repeated traumatic events have impacted the lives of persons with borderline pathology. In clinical settings, persons with borderline personality disorder, many of whom are women, may tend to repress painful emotions and traumatic memories, and practitioners may be reluctant to open the door to these complex experiences (Kulkarni 2017). Clearly, past and current trauma warrant a sensitive exploration for all patients with borderline pathology, and some may need focused and sustained intervention for complex traumatic experiences.

Understanding Personality Vulnerabilities: Diagnostic Categories or Dimensions?

The diagnostic classification systems, ICD and DSM, represent the lens through which we view mental health difficulties and plan targeted intervention and management. The two widely used diagnostic systems differ in the way personality disorders are conceptualized and operationalized. For instance, unlike the DSM-5, the current ICD-10 does not include narcissistic and schizotypal personality disorders. A disruptive shift in understanding personality vulnerabilities is demonstrated in the forthcoming ICD-11 classification, a complete change from a categorical to a dimensional approach. There are two proposed steps: the first to assign a level of severity and the next to assign up to five prominent traits (negative affectivity, detachment, disinhibition, dissociality, and anankastic). The ICD-11 will also allow for a borderline pattern descriptor to be selected as a diagnostic option after the severity rating. In the DSM-5, the categorical nature of classification of personality disorders is retained (10 personality disorders distributed over 3 clusters) under section II (Diagnostic Criteria and Codes). However, the DSM-5 also proposes a new hybrid model under section III (Emerging Measures and Models). This model includes diagnostic categories, along with the assessment of disturbances in personality functioning and 5 major personality domains (negative affectivity, detachment, antagonism, disinhibition, and psychoticism) and 25 traits. These five dimensions are maladaptive variations of general personality structure.

There have been long-standing concerns about the heterogeneity among persons within the same categorical diagnosis and the arbitrary thresholds (Widiger and Clark 2000) set for making a diagnosis (in the DSM system). The high comorbidity among PDs also indicates that the categorical and clustering system is not optimal. It is likely that the boundaries between PDs are incorrectly drawn and that using a relatively independent set of trait dimensions to classify personality pathology would be both more economical and informative. Persons with personality disorders would represent extreme ends of a continuum of personality traits that are evident within all individuals, rather than having disorders that are qualitatively distinct entities. A dimensional model is also easier to communicate to the patient and helps to target unique problems by portraying a full and individualized picture of the patient instead of just heterogeneous clusters of problems (Bach et al. 2015). The advantages of the dimensional approach also include the reduction of gender bias in diagnostic decisions about personality disorders and greater diagnostic reliability (Morey and Hopwood 2019; Samuel and Widiger 2009; Trull and Widiger 2013).

More than the results of research studies, the acid test for classificatory systems rests with clinicians who work with personality disorders. The dimensional approach requires a radical change in conceptual frames and diagnostic and treatment decision-making processes, and documentation requires acceptance and adequate skills from clinicians. Herpetz et al. (2017) strongly recommended the incorporation of user perspectives and ongoing debate among clinicians before opting for a dimensional approach which bases service provision solely on a severity dimension. Pull and Janca (2018) critiqued the three different models for personality disorders and discussed their relative advantages and disadvantages: the categorical model of personality disorders, the hybrid version proposed in DSM-5 in the “Emerging Models and Measures” section, and the upcoming dimensional framework of the ICD. The lack of a unified framework means possible confusion as researchers, clinicians and users make choices between three divergent models and might lean toward widely different models each with their own ways of assessing personality disorders. In a recent study examining clinician preferences, Morey and Hopwood (2019) reported a clear leaning toward the mixed/hybrid approach over a purely dimensional approach and a clear preference against a categorical model. The jury is still out and the metaphor of the “garden of forking paths” captures our current position.

Transdiagnostic Models of Personality Disorders

There has been a growing interest in looking at common psychopathological risk factors and processes across various diagnostic categories, including personality disorders. A transdiagnostic approach involves a recognition that fundamental dysfunctional processes (e.g., emotion regulation) may manifest in multiple/comorbid mental health conditions and offers additional benefits of parsimony with respect to assessment and interventions (Nolen-Hoeksema and Watkins 2011). While some transdiagnostic models have proposed cross-cutting dimensions across a range of mental health conditions, others have focused on personality disorders as a group. Krueger and Eaton (2015) proposed the internalizing-externalizing model, with personality disorders as manifestations of specific combinations of specific facets of these broader dimensions. A hierarchical model proposed by Conway et al. (2015) outlined a broadband propensity to *all* personality disorders, as well as specific personality processes controlling the surface features of *particular* personality disorders. Transdiagnostic frameworks (e.g., Nolen-Hoeksema and Watkins 2011) attempt to provide crosscutting explanations that can also account for multifinality (where a transdiagnostic risk factor leads to multiple disorders) and divergent trajectories (where individuals with the same transdiagnostic risk factor develop different sets of symptoms). The challenge for transdiagnostic models is to balance the simplification of causal explanations across disorders with the complexity of interactive mechanisms leading to dysfunction.

Research on gender differences in purported transdiagnostic factors and mechanisms is limited. Nolen-Hoeksema's (2012) extensive review of gender differences in emotion regulation, relationships with psychopathology, and implications for treatment represents the in-depth examination that is needed. Women were seen to use more emotion regulation strategies, but this may well reflect their heightened emotional awareness and sensitivity and involve a ruminative focus which could partially account for greater risk for anxiety and depression. Nolen-Hoeksema (2012) identified some missing areas in research, emotion regulation methods used by men and intersections between emotion regulation and borderline personality disorder, and speculated if men and women may respond differently to interventions that target emotion regulation. The *Unified Protocol for Transdiagnostic Treatment of Emotional Disorders* (Barlow et al. 2011) is representative of the corresponding interest in transdiagnostic treatments. In this relatively brief cognitive-behavioral intervention, a range of modules address disorders that have some shared underlying vulnerabilities related to emotion regulation, e.g., mood disorders, anxiety disorder, and borderline personality disorder. There is preliminary support for its efficacy with borderline personality disorder, and future studies are recommended.

Transdiagnostic processes and linked treatment approaches represent a paradigm shift, away from the proliferation of narrow therapeutic approaches to those that can address complex and comorbid presentations. Future research is needed to explore any gender-linked processes and mechanisms, to support decisions about common and specific treatment components, and to strengthen the evidence base for emerging transdiagnostic models and treatments.

Conclusion

Using a gendered lens both advances and deepens the discussion on personality disorders, and these learnings can be integrated into research, clinical training, and practice.

Research on personality disorders would benefit from ensuring that both men and women are included in samples and that the data is analyzed by gender. Although most research has used a binary construct for gender, a more inclusive stance is recommended. Some emerging areas such as parenting and personality disorders, dimensional and transdiagnostic frameworks, and developmental trajectories for personality vulnerabilities all warrant further research.

Training contexts need to include modules to strengthen the understanding of social and developmental determinants in the life trajectories of persons with personality disorders. Training in responsive interventions for complex trauma is essential in services for persons with personality vulnerabilities. An underemphasized but key issue relates to the need for gender-sensitive approaches in assessment and interventions, with open discussions about potential stereotypes and biases.

Specialized trauma and parenting services can be developed to address specific needs of persons with personality difficulties. The dimensional approach has promise for individualized interventions in clinical settings and for indicated prevention in community settings. Large-scale multilevel and inter-sectoral efforts are critical to address issues such as family violence and conflict and physical, sexual, and emotional abuse, which are all adversities implicated in the developmental trajectories of personality disorders.

As we make gender visible in our understanding of personality disorders, there could be direct, far-reaching, and positive impacts on research, mental health training and practice, and public health policies and initiatives.

Cross-References

- ▶ Classificatory Systems and Gender
- ▶ Culture and Women's Mental Health
- ▶ Interventions to Enhance Mother-Infant Attachment in the Context of Trauma, Depression, and Substance Abuse
- ▶ Mental Health Consequences of Sexual Assault

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Interventions to Enhance Mother-Infant Attachment in the Context of Trauma, Depression, and Substance Abuse

Megan M. Julian and Maria Muzik

Contents

Abstract

In the first months and years of life, a young child’s relationship with his mother and other caregivers is critical and serves as the foundation for rest of the development. The postpartum period is a time of increased vulnerability to psychopathology for mothers, especially in the context of prior trauma. Trauma exposure, depression, and substance abuse can impede a mother’s ability to provide a kind of sensitive, responsive, attuned care that is necessary for her child’s optimal development. In this chapter, we discuss parenting processes among mothers with trauma exposure, depression, and substance abuse along

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_29

with mother-infant therapeutic interventions that aim to improve mother-infant relationships in these at-risk populations to mitigate the intergenerational transmission of risk.

Keywords
Mother-infant relationships · Parent-child relationships · Mother-child relationships · Intergenerational transmission of risk · Parenting · Infancy · Trauma · Depression · Substance abuse · Attachment · Parenting intervention

In the first months and years of life, a young child's relationship with his mother and other caregivers is critical and serves as the foundation for the rest of development. Infants and young children depend on their caregivers to shape and guide their social experience and to scaffold their physical, cognitive, and social-emotional development; essentially, they experience the world through the lens of their relationship with their caregivers. When these relationships are strong and secure, children are able to use their caregivers as a source of comfort and support and a secure base from which to explore, making it more likely that they will be able to reach their full potential. However, when young children experience challenging early relationships – for example, when their caregiver is suffering from mental illness or has experienced trauma – they are at higher risk for later problems in a multitude of domains including peer relationships (Schneider et al. 2001), emotion regulation and self-reliance (Sroufe 2005), and behavior problems and internalizing problems.

The postpartum period is both a time of increased vulnerability to psychopathology for mothers, especially in context of prior trauma (Muzik et al. 2016a), and a time of rapid development for infants. In the prenatal period through early childhood, children are especially susceptible to the effects of their experiences; many neural structures are built during this time, so experience can easily "get under the skin" to affect the course of development (Fox et al. 2010). Through neural pruning, epigenetic processes such as DNA methylation, and other mechanisms, experience alters young children's biology (Szyf and Bick 2013), laying the foundation for lasting effects on development. Specifically, in the first years of life, neural connections are pruned and reinforced on the basis of our experiences, and experiences are heavily shaped by an infant's caregiver. Research with animal models has also demonstrated that maternal behavior (i.e., licking, grooming) is associated with epigenetic changes that are linked to gene expression and phenotype (Meaney 2010).

The Role of Caregiver-Child Relationships in Infancy

Mothers and other caregivers scaffold and support their infant's development in many domains including cognitive, social, behavioral, and physical development. Importantly, caregivers also help infants to develop skills that are foundational to self-regulation, which is fundamental to early childhood mental health (Masten and Coatsworth 1998) and numerous positive outcomes such as social competence, school readiness, and positive adjustment later on (Blair and Raver 2015). Infants do not yet have the skills to regulate their negative affect and rely on their caregivers to help them do so (Kopp 1989). Caregivers attend to their infants' cues, anticipate their needs, redirect their attention, and respond promptly to soothe their negative affect (i.e., by providing physical affection, rocking, etc.). Repeated experience of successful regulation in the context of the caregiving relationship enables children to begin internalizing strategies to regulate themselves more and more independently (Brophy-Herb et al. 2012). Thus, a caregiver who is attuned and emotionally present to her infant is key to the infants' future ability to regulate his emotions and behavior.

Integral to the bond between a parent and child is the parent's internal working model or their mental representation of the particular relationship (Bowlby 1969). In any relationship, we make interpretations and attributions that are based in part on our past experience in relationships. Our past experiences, particularly those stemming from early childhood, are the basis for cognitive schemas and affective memory traces that are carried forward in life and are the foundation for Bowlby's internal working models of relationships. These working models are the substrate for interpretations and attributions that parents make about their children and shape the way they behave in interaction with them, which then influences the way that children behave in interaction with their parents. Mothers who interpret their child's behavior in an accepting and positive way (i.e., have a "balanced" representational style) are also more reflective and able to take the perspective of their child, which ultimately also increases their empathic stance toward their child's behaviors (Berthelot et al. 2015). Such "balanced" mothers also tend to behave in a more sensitive and responsive way when interacting with their child and are more able to effectively and accurately process emotional experience related to parenting (Rosenblum et al. 2006). In turn, sensitive and responsive care is known to facilitate the development of secure attachment styles for young children, while insensitive, unpredictable, or harsh care is more likely to be associated with insecure attachment styles (Thompson 2006). When children have a secure relationship with their caregiver, they are able to be effectively soothed and comforted by that caregiver in times of distress and can use that caregiver as a secure base from which to explore. Secure attachment relationships set the stage for cascades of positive parent-child interactions over time that further support children's development. A secure attachment relationship is thought to be at the core of early childhood mental health and is associated with positive peer relationships (Schneider et al. 2001), better emotion regulation and self-reliance (Sroufe 2005), and fewer behavior problems and internalizing problems (Carlson 1998). Thus, in this critical developmental period for young children, their mothers and other caregivers play an especially central role.

Parenting in the Context of Risk

When a child's caregiver is in distress, it becomes more difficult for the caregiver to provide the kind of sensitive, responsive, attuned care that is necessary for their child's optimal development. A wide body of work suggests that maternal trauma exposure, depression, and substance abuse are associated with lower-quality parenting behavior and poorer child mental and physical health and behavior problems (Cook et al. 2018; Goodman et al. 2011; van Ee et al. 2015).

Maternal Trauma Exposure

Women of childbearing age have high rates of trauma exposure, with a third having experienced intimate partner violence and 40% having experienced sexual violence (Breiding et al. 2014; Tjaden and Thoennes 2000). Among women, sexual abuse is the strongest risk factor for developing PTSD (Perkonigg et al. 2000), and having a lifetime diagnosis of PTSD increases the risk for a relapse of PTSD after a more recent trauma (Breslau et al. 2008). Research on the link between maternal exposure to violence and related psychopathology (i.e., post-traumatic stress disorder, PTSD) and mental representations or reflective functioning is limited but so far suggests that there may not be a direct association between PTSD and reflective functioning (Stacks et al. 2014). But, for mothers who have PTSD, re-experiencing the trauma can limit their ability to reflect on their child's needs (van Ee et al. 2015; Berthelot et al. 2015). Thus, if a trauma-exposed mother is triggered by her child's distress, her ability to accurately identify and sensitively respond to her child's needs may be impaired. Parents who have PTSD tend to perceive their relationship with their child to be of lower quality; endorse higher levels of aggression toward their children; show less sensitive and responsive care, more controlling behavior toward their children, and are more avoidant, overprotective, intrusive, and hostile; and are less emotionally available to the child (van Ee et al. 2015).

There is evidence that changes in the HPA axis and autonomic nervous system related to trauma exposure are associated with more negative parenting (Sturge-Apple et al. 2011). Mothers' trauma-related psychopathology is also related to epigenetic changes in genes that are involved in regulating stress-relevant compounds such as cortisol and serotonin (Perizzolo Pointet et al. 2018). Importantly, longitudinal analyses suggest that dysfunction in the biological stress regulation systems appears to precede parenting difficulties (Leerkes et al. 2015; Sturge-Apple et al. 2009).

Mothers who have more severe PTSD symptoms tend to have babies that have a more difficult temperament, more disruptions in sleep, and more separation anxiety around bedtime (Hairston et al. 2011). As children grow older, mothers' PTSD symptoms are associated with increased risk for child internalizing and externalizing problems, aggression, attentional bias to danger and distress, and conflict avoidance (van Ee et al. 2015). Effects of maternal trauma on child outcomes may be partially mediated by maternal psychological distress (e.g., anger, depression, anxiety) or parenting behavior (e.g., child-directed aggression, child maltreatment; Plant et al.).

In many cases, mothers who are exposed to trauma are also raising young children who have been exposed to trauma. For the trauma-exposed child, early attachment relationships are especially critical. Young children who have a secure attachment relationship with a caregiver are able to be easily soothed when in the presence of that caregiver – when they encounter stress in the context of the caregiving relationship, their physiological and behavioral stress responses are buffered by the relationship, reducing the likelihood that their stress will have lasting effects on their development (Gunnar and Quevedo 2007). For those young children who do not have a secure attachment relationship, the experience of significant stress is associated with disturbances to the endocrine stress response system (i.e., HPA axis activity) and greater risk for behavioral and emotional problems later on (Gunnar and Quevedo 2007).

Maternal Depression

Maternal depression is one of the most common complications of childbirth, with about 20% of mothers experiencing depression within the first 3 months postpartum (Marcus et al. 2003); mothers who have low income and low educational achievement, are unmarried, or are African American are at elevated risk (Mayberry et al. 2007). Depression can have pervasive effects on an individual's thoughts, feelings, and behaviors, and so it follows that parenting can be affected at many levels. Mothers who are depressed tend to be less aware of the emotional impact they have on their child and less attuned to their child's perspective (Coyne et al. 2007). They also subjectively experience their own and their child's experiences more negatively than less depressed mothers (Coyne et al. 2007).

Relative to non-depressed mothers, depressed mothers tend to parent with moderately more negative behavior, moderately more disengaged behavior, and slightly less positive behavior (Lovejoy et al. 2000). While effects for negative behavior are most pronounced during an episode of depression, there is evidence to suggest that mothers who are not currently depressed but have a history of depression also parent with relatively less positive and more disengaged behavior (Lovejoy et al. 2000). These effects of maternal depression on parenting are most pronounced when children are youngest and most dependent on parents to initiate interactions and keep them engaged (Lovejoy et al. 2000). Importantly, there is evidence to suggest that effects of maternal depression on observed parenting behaviors are mediated by mothers' ability to take their child's perspective (Trapolini et al. 2008). In other words, depression appears to be associated with changes in the way that mothers subjectively experience their child and parenting, and these changes in their mind-set around parenting appear to drive observable changes in the way that they behave when interacting with their child.

Maternal depression is associated with both biological and behavioral effects on the infant (Kelly et al. 2002; Steer et al. 1992). Biologically, mothers with depression are more likely to have infants that have low birth weight (Steer et al. 1992) or are born preterm (Suri et al. 2007). Later on, children of depressed mothers also show decreased flexibility in the hypothalamic-pituitary-adrenal (HPA) axis, a key pathway involved in stress regulation (Apter-Levi et al. 2016), and decreased levels of oxytocin, a hormone involved in bonding and attachment (Apter-Levy et al. 2013).

Behaviorally, mothers with depression often have infants who are more irritable, less active and attentive, and show fewer facial expressions (Field et al. 2006). Children of depressed mothers are also more likely to develop insecure attachments (Martins and Gaffan 2000). As children of depressed mothers grow older, they are likely to experience higher levels of internalizing and externalizing problems, peer relationship problems and social withdrawal, psychopathology, and negative affect and lower levels of positive affect, though effect sizes are small (Goodman et al. 2011). Similar to effects of maternal depression on parenting, effects of maternal depression on child outcomes are strongest for the youngest children (Goodman et al. 2011).

Maternal Substance Abuse

Parents who abuse substances often have multiple risks, including high rates of comorbid psychopathology (Swendsen and Merikangas 2000) and a high prevalence of childhood maltreatment (Kunitz et al. 1998). Substance abuse can alter the functioning of a mother's dopaminergic system; dopamine, which is involved in reward and motivation, is typically released during positive parent-child interactions, so these processes may be disrupted in substance-abusing mothers (Renk et al. 2016). Parental substance abuse is associated with a more authoritarian and harsh disciplinary style (Fals-Stewart et al. 2004), lower attentiveness and engagement with their children (Mayes et al. 1997), and a three- to fourfold increase in likelihood of abusing or neglecting their children (Kelleher et al. 1994). In fact, the majority of children who are removed from their home by child welfare services due to neglect have a parent who abuses substances (Dakof et al. 2010). Given the high rates of incarceration for substance-abusing parents, absence of a parent due to incarceration and related social and financial impacts on the family should also be considered as important sequelae of maternal substance abuse (Calhoun et al. 2015). While it is not yet known how maternal substance abuse relates to parents' mental representations related to parenting, there is evidence that individuals who abuse substances often also experience disordered affect regulation, which is associated with impaired reflective capacity (reviewed in Söderström and Skårderud 2009).

Exposure to illicit substances in utero is widely known to cause biological and behavioral effects on the infant including low birth weight, feeding difficulties, stunted or delayed cognitive and physical development, increased irritability, and later emotional and behavioral problems (Bada et al. 2007; Kelly et al. 2002). Infants exposed to drugs prenatally can also show more unpredictable temperament and poor state organization, which can make it more difficult for parents to appropriately read and attend to their cues (Azuma and Chasnoff 1993). As they grow older, children of substance-abusing parents are at greater risk for depression and anxiety, low self-esteem, social problems and loneliness, serious behavior problems including substance use, and lower intellectual functioning (Peleg-oren and Teichman 2008).

Interventions to Support Mother-Infant Relationships

An infant's relationship with his mother is perhaps one of the strongest predictors of his later well-being, and maternal distress can pose a risk to his development. While the sequelae of different types of maternal risk are unique in some respects, there is substantial symptom overlap between the categories of risk described above, and many mothers experience multiple risks. Given the critical role of the caregiving relationship to children's development and well-being, numerous interventions have been developed to improve mother-infant relationships, particularly among mothers who are at greater risk due to psychopathology, trauma exposure, and poverty. Below, we discuss therapeutic intervention approaches that are designed to bolster mother-infant relationships in families experiencing various forms of risk and in such promote secure child attachments despite the context of adversity.

Interventions for "At-Risk" Mothers and Their Infants

Several intervention approaches have been designed to bolster mother-infant relationships among dyads who are generally "at risk," whether due to trauma exposure, mental illness, poverty, or other risk factors.

Mom Power

Mom Power (MP) is a 12-week, manualized, multifamily parenting and self-care intervention that is based in attachment theory, trauma theory, and social learning theory and aims to improve parenting and self-care for high-risk mothers of young children (Muzik et al. 2016b). The intervention offers three individual and ten group sessions for mothers and their children up to age 6 and is multimodal and experiential in nature. MP offers attachment-focused parent education, in vivo support of parent-child interaction, self-care and stress-reduction strategies aimed at reducing mental health symptoms, a group context to facilitate peer social support, and individualized referrals to community resources. During the group sessions, parents are coached to reflect on their child's needs from an attachment perspective using a powerful and elegant metaphor of a tree to illustrate the role of a parent in creating a secure base and/or safe haven (terms coined by John Bowlby 1969) for her child: when children are exploring and playing, they are "branching out" from the mother who acts as a secure base for exploration, whereas when a child is hurt or emotionally distressed and needs to return to the mother for seeking safe haven and connection, she is "building roots." With the use of the tree metaphor, mothers discover how to meet a child's needs while exploring and connecting with a caregiver; how to repair a disruption in the relationship; how to co-regulate a child's emotions; and how to create an atmosphere of warmth, joy, and delight in which their child can learn and grow. They learn how a child's sense of self develops through this balancing of exploring and connecting and through daily experiences of having their needs met. In addition, parents explore what experiences from the past might impact their parenting and what current experiences may be affecting their children. In addition, each group session also includes a focus on self-care. The self-care skills utilize strategies derived from DBT and mindfulness and guided imagery to improve affect regulation and decrease symptoms associated with depression, anxiety, and PTSD.

While parents are in the parent group, children participate in a child group focused on child-led play and opportunity to observe children's behavioral and emotional coping with separation and peer play. The child group team carefully observes and assesses the children's developmental functioning and actively assists children in practicing safe and predictable separation and reunion routines with their mothers.

MP was designed with the needs of the highest-risk mothers in mind, and most participants thus far have risk factors including trauma exposure, psychopathology, poverty, and/or single parenthood (Muzik et al. 2015). In an "open trial" (i.e., no control group) of MP, participation in the parent group was associated with a decrease in mental health symptoms and improved reflective functioning, social support, and connection to care (Muzik et al. 2015, 2016b). A recent randomized controlled trial demonstrated that relative to mothers who received mailed psychoeducational materials, MP participants had improved mental health symptoms and parenting stress, and these results were most pronounced among mothers with a history of interpersonal trauma (Rosenblum et al. 2017b). MP was also associated with an increase in mothers with a "balanced" representational style and improved reflective functioning relative to mothers who received mailed psychoeducational materials (Rosenblum et al. 2017a). Examination of biological underpinnings of intervention effects suggests that MP participation is associated with activation of brain circuitry relevant to parental empathy (Swain et al. 2016, 2017).

Circle of Security

Circle of Security (COS) is another attachment-based parent intervention that helps parents to improve their observational and inferential skills related to their child's behavior so that they can respond appropriately to their needs (Powell et al. 2014). COS teaches parents about the attachment system using a "circle" graphic that shows how parents provide children a safe haven in times of distress or threat and a secure base in times of exploration. Parents are taught to recognize these two primary modes of the attachment system, and they discuss ways that young children sometimes "miscue" and present behavior that is in contrast with what they actually need (e.g., push parents away when they need emotional support). Parents are also taught about how their own strong feelings can get in the way of providing children with the secure base or safe haven that they need. While the COS program was initially designed to be a 20-week multifamily group involving videotaped observations and feedback, it has since been adapted to other formats including a four-session home-based program (COS-HV4) and a ten-session DVD-based parent group intervention (COS-P) that uses standardized video clips instead of personalized video feedback.

The original 20-week COS group is associated with pre- to post-intervention improvements to children's attachment security and attachment organization, as well as improvements to parents' reflective function and caregiving representations (Huber et al. 2015). A randomized controlled trial of the COS-HV4 model suggested that while there was no main effect of treatment, intervention effects were detected for infants who were more irritable (Cassidy et al. 2011). The COS-P DVD program, which is the most widely disseminated version of COS, is associated with improvements in self-efficacy and depressive symptoms, but not reflective functioning (Gray 2015). A recent randomized controlled trial of COS-P found that relative to wait-listed mothers, COS-P mothers provided fewer self-reported unsupportive responses to their children's distress, and their children had better observed inhibitory control (Cassidy et al. 2017). While there is some evidence to suggest that mothers' attachment style might moderate the effects of COS-P, more research is needed (Cassidy et al. 2017).

Attachment and Biobehavioral Catch-Up

Attachment and Biobehavioral Catch-up (ABC) is a ten-session home-based, manualized caregiver-child intervention program that is based in attachment theory and informed by stress neurobiology (Bernard et al. 2012). ABC targets young children who have experienced early adversity and consists of two versions – one for children 6 months to 2 years old (ABC for Infants; ABC-I) and one for children 2–4 years (ABC for Toddlers; ABC-T). ABC interventionists use a combination of in-the-moment and video feedback, structured activities, discussion of research findings, and discussion of caregivers' early experiences to promote sensitive and synchronous parent-child interactions. There is a particular focus on helping caregivers to create a responsive and predictable environment, follow the child's lead, show delight in the child, and limit any behaviors that might be frightening or overwhelming to the child. ABC-T also helps parents to be able to co-regulate their child in times of distress.

High-risk mothers who participated in ABC-I showed more sensitivity and less intrusiveness relative to mothers who participated in a psychoeducational control intervention (Yarger et al. 2016). Foster mothers who participated in ABC-I showed more sensitive parenting, less parenting stress, and less child abuse potential (Bick and Dozier 2013; Sprang 2009). There is evidence that these behavioral changes are accompanied by neural changes; ABC-I mothers showed greater event-related potential response to emotional faces relative to a control group (Bernard et al. 2015b). ABC-I also has effects on children, with participating children showing improvements in attachment security and organization (Bernard et al. 2012), less negative affect in a challenging task (Lind et al. 2014), fewer externalizing and internalizing problems (Sprang 2009), better language and cognitive skills (Bernard et al. 2017), and more normalized diurnal cortisol patterns (Bernard et al. 2015a). Foster children who received ABC-T were also reported to have better attention and cognitive flexibility than children who received a control intervention (Lind et al. 2017).

Other Interventions

Several other intervention programs exist that aim to improve mother-infant relationships in at-risk populations. Child and Family Interagency Resource, Support, and Training (*Child FIRST*) is a home-visiting intervention conducted by a clinician and a care coordinator that provides both trauma-informed treatment (e.g., child-parent psychotherapy) and parent guidance and care coordination and connection to community resources (Lowell et al. 2011). A randomized controlled trial of Child FIRST demonstrated that the intervention is associated with less parenting stress, maternal psychopathology, and protective service involvement, better child language and fewer child externalizing problems, and greater access to wanted services (Lowell et al. 2011). A similar intervention, *Minding the Baby*, is a home-visiting intervention that begins prenatally and is aimed at high-risk first-time mothers (Sadler et al. 2013). Minding the Baby places a particular focus on helping parents to become more reflective and responsive in their interactions with their baby, and when applicable, the social worker home visitor assesses the mother's mental health and provides treatment. Participation in Minding the Baby is associated with higher likelihood of being on track with child immunizations, lower rates of rapid subsequent childbearing, lower likelihood of referral to Child Protective Services, improved maternal reflective functioning, and improved child attachment (Sadler et al. 2013).

Interventions for Trauma-Exposed Mothers and Their Infants

The most prominent mother-infant relationship-focused intervention for trauma-exposed dyads is *Child Parent Psychotherapy (CPP)*. CPP is a dyadic psychotherapeutic treatment model, conducted either in a clinic or in the home, and is designed for infants and young children who have experienced traumatic events and have behavioral, attachment, or psychiatric problems (Lieberman et al. 2015). CPP draws from psychodynamic and attachment theories and also incorporates ideas from social learning theory and cognitive behavioral theories. CPP is unique for its explicit focus on trauma; both the child's and caregiver's history of trauma is explored, and a key focus of treatment is helping the caregiver to identify how their own history might impact the way they understand and interact with their child. The core intervention phase of CPP involves dyadic play-based developmental-relational therapy. The clinician helps the dyad to develop a play-based narrative about the traumatic experience, acknowledge the impact of the trauma, and create shared positive memories. Throughout these sessions, clinicians provide developmental guidance, help caregivers to reframe interpretations and attributions that may be shaped by their own history, and regulate both the child's and the parent's affect during emotionally charged play and discussions. Given that CPP participants have a history of trauma, a crucial goal of treatment is to ensure that the child remains safe both physically (e.g., safe housing, access to services) and psychologically (e.g., acknowledgement of past risks to safety, consistency, and predictability in relationships), and this portion of the work is often done in partnership with child welfare workers. A course of treatment in CPP typically lasts about 1 year with weekly sessions, though it may be longer or shorter based on an individual family's needs.

CPP has been well-studied and shown to be effective in improving both parent and child outcomes in diverse samples of trauma-exposed families. Randomized controlled trials have demonstrated that CPP is associated with reductions in problematic maternal representations, reductions in maternal distress and psychopathology, more positive mother-child relationship expectations, greater empathic responsiveness, and less angry behavior (Ghosh Ippen et al. 2011; Lieberman et al. 2006). As well, children who participate in CPP are more likely to have secure attachments and less likely to have anxious attachments, have improved relationship expectations, and have fewer traumatic stress disorder symptoms and behavior problems (Cicchetti et al. 2006; Toth et al. 2002). Importantly, improvements in child behavior problems and maternal distress were maintained for at least 6 months after the intervention (Ghosh Ippen et al. 2011; Lieberman et al. 2006).

Interventions for Depressed Mothers and Their Infants

The *Mother-Infant Therapy Group (M-ITG)* model is a 12-week manualized approach designed to treat mothers with postpartum depression and their infants (Clark et al. 2008). M-ITG consists of three components: a therapeutic group for mothers takes place simultaneously to a developmental therapy group for infants, and these are followed by a mother-infant dyadic group. M-ITG has its theoretical base in attachment theory, object relations theory, social learning theory, and revised learned helplessness theory and integrates components of interpersonal, psychodynamic, cognitive-behavioral, and family systems approaches. Mother group sessions are each designed around a theme (i.e., expectations about baby, coping with depression, spousal relationship), and the group format is thought to facilitate peer support and learning through others' experiences. During infant groups, therapists provide responsive caregiving aimed at supporting infants' development and helping them to experience and regulate a range of affect. In the dyadic group, mother-infant dyads participate in interactive activities, and mothers are assisted in accurately reading and sensitively responding to their infants' cues, expressing positive affect and behavior in these interactions, and providing nurturing physical and eye contact.

Relative to a wait-list control group, mothers who participated in M-ITG had fewer self-reported depression symptoms, perceived their children to be more adaptable, derived more reinforcement from their children, and were observed to show more positive affective involvement and verbalization when interacting with their infants, but there was no difference in these factors between M-ITG participants and mothers who participated in interpersonal psychotherapy (Clark et al. 2008). Thus, through its multicomponent approach, M-ITG addresses mothers' symptoms of postpartum depression with particular attention to the way that these symptoms can affect their relationship with their infant and their infant's development.

Interventions for Substance-Abusing Mothers and Their Infants

Two interventions have been designed with substance-abusing mothers and their infants in mind. In each case, these mother-infant relationship-focused treatments are designed to supplement existing substance abuse treatment models.

Mothering from the Inside Out

Mothering from the Inside Out (MIO) is a mentalization-focused treatment aimed at substance-abusing mothers and their young children (Suchman 2016). Instead of delivering specific content to mothers, MIO engages mothers in a process that aims to facilitate her development of mentalization skills, i.e., her capacity to reflect upon her own and her infant's mental states, which are feelings, desires, thoughts, and attributions. MIO is meant to be an adjunctive treatment to mothers that are enrolled in substance abuse treatment; while MIO does not address substance abuse directly, its focus on enabling parents to recognize how their mental and emotional processes contribute to their experience and behavior is highly relevant to recovering women who are especially vulnerable to emotion dysregulation and relapse. In each MIO session, mothers determine the focus of the discussion, and the clinician shapes the discussion to help the mother explore her thoughts, emotions, wishes, and intentions related to the events that are discussed. Gradually, the clinician encourages mothers to have this same kind of curiosity around their infant's mental state, being careful not to do the mentalizing work for the mother but scaffolding her own capacity. Clinicians provide developmental guidance and strategies to promote a secure attachment when indicated, and a more directive approach is used when the child's or the mother's safety is at risk. However, the primary focus of the work remains on enhancing mothers' mentalization skills. While initially designed to be a treatment for substance-abusing mothers, MIO has also been successfully implemented in populations of mothers who are receiving treatment for mental health problems (Ordway et al. 2018; Suchman et al. 2016).

In a randomized controlled trial, mothers who participated in MIO showed higher reflective functioning and better caregiving behavior relative to mothers in a psychoeducational comparison intervention, and group differences were maintained at least 12 months after the intervention ended (Suchman et al. 2011, 2017). Mothers from both groups showed significant intervention-related improvements in both psychiatric symptoms and substance use (Suchman et al. 2011). Importantly, the improvements in mothers' caregiving behavior were directly related to improvements in their reflective functioning (Suchman et al. 2018). MIO was also associated with improvements in children's behavior; among dyads who participated in MIO, children showed greater involvement, and dyads showed more reciprocity (Suchman et al. 2017).

Project BRIGHT

Project BRIGHT (Building Resilience through Intervention: Growing Healthier Together) is a dyadic attachment-based intervention for substance-abusing mothers and their young children (Paris et al. 2018). BRIGHT is heavily rooted in CPP and is meant to be an adjunctive treatment to other existing substance abuse treatments. Like CPP, BRIGHT begins with an assessment and engagement phase where a trauma-informed conceptualization of the dyad's relationship is developed. As treatment continues, the clinician helps mothers to tolerate their affect related to parenting and recovery, recognize their successes (e.g., in arriving on time, completing a goal, or predicting their child's needs), become more reflective and aware of thoughts and feelings related to the parent-child relationship and the clinician-parent relationship, and ensure their child's and their own physical and psychological safety. While CPP places an emphasis on representational play, BRIGHT dyads often begin treatment at a younger age (e.g., during pregnancy or infancy) before representational play develops. Thus, parent-child interactions during dyadic sessions are focused on encouraging moments of pleasure and connection, and clinicians highlight when the infant mirrors the parent. Discussions of the role of substance misuse, sobriety, and recovery in parenting are integrated throughout this work; thus, as an adjunct to substance abuse treatment, BRIGHT addresses mothers' substance abuse and trauma history and the role they play in the parent-child relationship. While outcome data for BRIGHT participants is limited, preliminary findings suggest that mothers who participate in BRIGHT have improved mental health and parenting capacities, and these improvements are most pronounced among those reporting the highest levels of baseline psychological distress (Paris et al. 2015).

Conclusions

An infant's relationship with his primary caregiver is central to his mental health and future well-being. When mothers have been exposed to trauma, are experiencing mental health problems or abusing substances, or have other risk factors, it can be more challenging for them to provide the sensitive, responsive, and nurturing care that their children need, and that is the foundation for secure attachment. While maternal trauma exposure, PTSD, depression, and substance abuse are associated with unique patterns of parenting behavior and affect, each form of risk has the potential to disrupt the mother-infant relationship through effects on the mother's mental representations of her child and her reflective capacity which, in turn, shape her behavior in interaction with her child. Numerous interventions have thus been developed to support mother-infant relationships in the context of these risk factors that target maternal representations, reflective capacity, parenting behaviors, and her mental well-being. Some interventions, like CPP, are tailored specifically to the risks (e.g., trauma exposure) that mothers are experiencing, while others address disturbances to the mother-infant relationship that are common to multiple forms of risk (e.g., mental health problems, socioeconomic adversity, trauma history). Though all these treatments may target depression, anxiety, or substance abuse, they are meant to address primarily mother-infant relationship difficulties that are common in these circumstances and not to serve as the sole method of treatment for women with mental health risk. The interventions described vary somewhat in their theoretical orientation, modality, and specific components, but all place a principal emphasis on child attachment and developmental growth and the mother-infant relationship as the vehicle for change and basis for the infant's mental health and well-being. The evidence base for these interventions is growing, and several have proven to be associated with significant improvements in parents' mind-sets about caregiving and their behaviors, as well as their children's affect and behaviors that are maintained at least several months after the intervention ends. While most of the interventions discussed above have been developed and studied primarily with mothers, several have been successfully implemented with fathers and other caregivers (e.g., grandparents, foster parents, etc.), and this remains an important area for continued work. Future intervention work should aim to increase access to these much-needed services, particularly for caregivers with multiple risk factors, and scientific efforts should aim to further elucidate what interventions work best for whom and how interventions effect "get under the skin" to produce changes in parents' biology and behavior.

Cross-References

▶ Evidence-Based Interventions for Mental Health Consequences of Intimate Partner Violence
▶ Mental Health Consequences of Sexual Assault
▶ Interpersonal Violence and Perinatal Mental Health

Acknowledgments T32 postdoctoral fellowship funding (HD079350; PI: J. Lumeng) supported the primary author.

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Overview of Women and Addiction

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_33

Abstract

Women are gradually losing the protection they had from historic social roles. In general, girls and women seem more influenced by beliefs about weight control and self-image as well as by female friends or role models when they use alcohol or tobacco. As compared to men, women more often use psychoactive substances to cope with stress and negative feelings. Pharmacokinetics and pharmacodynamics differences, reward process specificities, and female hormones play a major role in gender differences observed in addictive behaviors. Therefore, health consequences differ. Finally, women's consumption of psychoactive substances may be associated with serious birth and developmental consequences in babies exposed during pregnancy.

Further research is needed, especially concerning treatment features according to gender.

Keywords

Women · Addiction · Alcohol · Tobacco · Illicit drugs · Pregnancy · Gender

Introduction

Historically, women have consumed alcohol in lower amounts than men and have used tobacco, alcohol, or illicit drugs less often than men. However, over time, the gradual change in societal role of women (they are adopting more dominant roles) and lessening of social taboos have led to an increase in the frequency and amount of alcohol, tobacco, and illicit drug use among women.

For alcohol and tobacco companies, selling alcohol and tobacco to women is the largest product-marketing opportunity in the world. In addition, marketing alcohol and tobacco to women in the developing world is rapidly increasing and the companies benefit from years of marketing experience in industrialized countries. Body image or weight control and gender equality are recurrent themes used by the industry to promote their products among women (European Institute of Women's Health; http://www.eurohealth.ie). Interestingly, women seem to be less influenced by the anti-smoking campaigns than men.

Generally speaking, psychoactive drug-dependent women express greater negative emotional states such as stress, anxiety, and depression which are more likely to trigger craving and relapse as compared to men.

Health consequences differ according to gender; this is partly explained by the fact that men and women differ in terms of pharmacokinetics and pharmacodynamics. In addition, heavy drinking puts women at risk of injuries and death from accidents, as well as of unsafe sex or sexual assaults and violence (ICAP 2013).

Finally, women's consumption of psychoactive substances may be associated with serious birth and developmental consequences in babies exposed during pregnancy.

All these topics will be discussed in this chapter.

Epidemiology (Gender Differences)

Alcohol Use

The mean alcohol per capita consumption in 2010 was 8.9 in females and 21.2 in males (in liters of pure alcohol per year, among all drinkers 15+ years, from all regions). These epidemiological data are also available per WHO region (Global Status Report on Alcohol and Health, 2014 based on epidemiological studies conducted in 2010) (http://www.who.int/substance_abuse/publications/alcohol_2014/en/). According to the WHO report, the current rate of drinking was 29% in females, compared to 48% in males; the prevalence of heavy episodic drinking was 5.7% in females compared to 21.5% in males (defined as drinking at least 60 g or more of pure alcohol on at least one occasion in the past 30 days).

In most countries, the mean level of alcohol use has gradually decreased over time. Somehow, in some countries such as India, China, and Russia, in some Latin American countries, and in Eastern Europe, the mean consumption has increased from 2000 to 2013 (https://doi.org/10.1787/health-data-fr). Yet, the prevalence of alcohol use in women has gradually increased worldwide over time. The highest prevalence of alcohol use disorders (harmful use and dependence) was observed in European women (2.9% in women as compared to 12.6% in men) and the lowest in European Mediterranean countries (i.e., Arabic countries) (0.2% in women and 0.6% in men) (WHO 2014a). Accordingly, the highest prevalence of heavy episodic drinking was observed in European adolescent women (with 22% of females as compared to 40% of males) followed by the Americas (7.1% of females and 29.3% of males) and the Western Pacific Region (WPR) (6.1% of females and 18.3% of males). Interestingly, as compared to the prevalence of heavy episodic drinking observed in all adult women (15+ years), the prevalence observed in adolescent women was almost three times higher in Europe and in WPR. In addition, in Europe, about 50% of 15–16-year-old female students have used any alcoholic beverage during the past month (European School Survey Project of Alcohol and Other Drugs: http://www.espad.org/sites/espad.org/files/TD0116475ENN.pdf); moreover, about 35% of these girls reported having had five or more drinks on one occasion during the past month, which is quite similar to the patterns of use observed in boys of the same age (average of 14 European countries) (ICAP 2013). In the same way, Slade et al. (2016) have stratified

68 studies by 5-year birth cohorts from 1891 to 2001. They have reported the prevalence of alcohol use and alcohol use disorders (AUDs) among cohorts born in the early 1900s: males were 2.2 times more likely than females to use alcohol, 3 times more likely to drink alcohol (problematic use), and 3.6 times more likely to experience alcohol-related harms. In contrast, among cohorts born in the late 1900s, males were 1.1 times more likely than females to use alcohol, 1.2 times more likely to drink alcohol (problematic use), and 1.3 times more likely to experience alcohol-related harms.

Tobacco Use

The highest prevalence of smoking any tobacco product was reported in Europe (19.3% of females) followed by the Americas (13.3%) as compared to a worldwide mean of 6.8% (http://www.who.int/gho/tobacco/use/en/). The prevalence of tobacco use has decreased in many countries between 2010 and 2013 except for Greece, Indonesia, and Latvia where it has increased (https://doi.org/10.1787/health-data-fr). In 2012, the prevalence of tobacco use (cigarettes) was quite similar among boys and girls in Europe and even higher in girls, as compared to boys, in the Americas; in terms of tobacco smoking other than cigarettes, the prevalence of smoking was quite similar among boys and girls in Africa and the WPR (http://www.who.int/gho/tobacco/use/en/).

Illicit Drugs

Overall, men are three times more likely than women to use cannabis, cocaine, or amphetamines, whereas women are more likely than men to engage in the nonmedical use of opioids and tranquilizers. In Europe, for every two girls who use cannabis, there are three boys, whereas the prevalence of cannabis use among adults is nearly twice as high among men than among women. In the USA, the use of cannabis, cocaine, and prescription opioids among young people (ages 12–17) was fluctuating over the past decade, but overall the gender gap has remained similar with a higher rate in males (https://www.unodc.org/doc/wdr2016/WORLD_DRUG_REPORT_2016_web.pdf).

However, there is a higher rate of increase in the burden of disease from cocaine and opioid use disorders among women than men (+25% vs. +19%, respectively, between 2005 and 2015). According to the World Drug Report (2017) (http://www.unodc.org/wdr2017), female outpatients were still underrepresented in treatment settings.

Behavioral Addictions

Considering behavioral addictions, the prevalence of food binging (especially chocolate) was higher in women as compared to men. Concerning sexual addiction, gambling, or Internet addiction, prevalence was usually higher in males (Fattore and Melis 2016); regarding exercise, data were controversial (MacLaren and Best 2010). In countries where the prevalence of problem gambling has been assessed, the prevalence was estimated at 1.5% (Gowing et al. 2015).

Pharmacology (Gender Differences)

Males and females differ in terms of pharmacokinetics and pharmacodynamics (Soldin and Mattison 2009). The rate of absorption is influenced by multiple factors, including gut transit times and pH at the site of absorption, which differ between males and females. The distribution of a drug is also affected by multiple body composition parameters including body fat composition, which is significantly higher in women. Plasma-binding variations can alter the free (or active) fraction of drugs. Some of the CYP450 enzymes show clear sex-related differences with a higher activity in females for CYP3A4 and CYP2D6. Finally, when standardized for body surface area, renal blood flow, glomerular filtration, tubular secretion, and tubular reabsorption are also higher in men.

For example, first pass metabolism of ethanol is greater in men than in women; the volume of distribution is smaller in women; and finally, women have lower levels of alcohol dehydrogenase. Taken together, these data suggest the potential for greater alcohol blood concentrations in women as compared to men. Therefore, women are more at risk even while drinking less alcohol than men.

Differences in receptor number and binding are also observed (e.g., morphine displays both a slower onset and offset at mu-opioid receptors in women who require higher dosages of morphine) (Sarton et al. 2000).

Finally, nicotine metabolism is faster among women (especially with oral contraceptives), which means that they may smoke more tobacco (Allen et al. 2017).

Estrogen and Progesterone Effects (Carroll and Lynch 2016; Becker 2016)

The paucity of studies on gender differences in addictions is surprising when considering the modulatory role of estradiol in decision-making, its interplay with dopamine in modulating reward and cognitive processes, and the presence of estrogen receptors in different brain regions implicated in motivation, reward, and decision-making (Jacobs and D'Esposito 2011; Uban et al. 2012).

In preclinical studies, in females, drug-induced reward was enhanced by estrogen and decreased by progesterone (Quinones-Jenab and Jenab 2010; Anker and Carroll 2011). Importantly, differences in vulnerability to relapse and reinstatement were prominent in female rodents across the ovarian cycle (Lynch et al. 2002). Similarly, the menstrual cycle also plays an important role in drug addiction treatment outcomes in women: the severity of withdrawal symptoms may differ in the luteal and follicular phase (Terner and de Wit 2006).

Preclinical data usually revealed higher responsiveness to drugs and higher motivation to take drugs in females than in males. For example, acquisition of self-administration of psychostimulants occurred at lower doses and might be of greater magnitude in females than in males (Kuhn et al. 2010). In contrast, increased striatal dopamine D2 receptor availability and a lower rate of synaptic dopamine catabolism as well as a higher DA transporter availability in females were protective factors for vulnerability to drug abuse and dependence (Mozley et al. 2001; Volkow et al. 2002).

For almost all drugs of abuse, enhanced vulnerability of women to develop drug addiction has been widely recognized, although the prevalence of drug dependence remains generally higher in adult men compared to women (Carroll et al. 2004). Interestingly, more recent epidemiological studies indicate a narrowing in this gender gap (Substance Abuse and Mental Health Services Administration, 2014: https://www.samhsa.gov/samhsa-data-outcomes-quality/major-data-collections/reports-detailed-tables-NSDUH) especially in adolescents. This may reflect changing sociocultural patterns rather than biology. In fact, in comparison to men, women begin using drugs younger, develop addiction more quickly with a stronger motivation to take drugs, enter into drug rehabilitation sooner, and experience shorter periods of drug abstinence (Brady and Randall 1999; Dluzen and Liu 2008; Kuhn 2015). Indeed, men and women have different propensities to relapse and are differentially affected by triggers for relapse to drug taking (e.g., concerning cocaine and methamphetamine) (Becker and Hu 2008). In women and men addicted to cocaine, Potenza et al. (2012) reported sex differences in neural correlates of cue-induced craving, with cortical-striatal-limbic hyperactivity being linked to stress cues in women but to drug cues in men. In the same way, women are also less sensitive to the reinforcing effects of nicotine but more sensitive to social cues. Surprisingly, female injection drug users were more likely to engage in risky behaviors than males (Evans et al. 2003).

At-Risk Levels of Psychoactive Drug Use in Women

Concerning tobacco and illicit drug use, there is no safe level of use.

The WHO has defined different levels of risk for occasional and chronic alcohol use (in grams per day), which are significantly lower in females. Risks are defined as follows in women: low risk (<20 g/day), moderate risk (>20–40 g/day), and high risk (>40 g/day) (http://apps.who.int/iris/bitstream/handle/10665/66529/WHO_MSD_MSB_00.4.pdf?sequence=1&isAllowed=y). In the same way, in many countries, recommended limits of alcohol use were defined in standard drinks (for men and women). It is interesting to emphasize the fact that the definition of a given standard drink may differ according to countries (see table below).

Country	Alcohol content of a standard drink(in grams)	Recommended limit for adult women in standard drinks/day (SD) or in g/day or week
Australia	10	2 SD/day; 20 g/day
Austria	8	2 SD/day; 16 g/day
Bulgaria	15	8 g/day
Canada	13.6	2 SD/day; 27.2 g/day up to 9 SD/week;122.4 g/week
Denmark	12	14 SD/week;168 g/week
France	10	2 SD/day; 20 g/day
Great Britain	8	2–3 SD/day;16–24 g/day
Ireland	10	14 SD/week;140 g/week
Italy	12	1–2 SD/day; 12–24 g/day > 65-year-old: 12 g/day
Spain	10	11 SD/week; 110 g/week
United States	13.7	1 SD/day; 13.7 g/day

Adapted from Latino-Martel et al. (2011)
D day, *w* week, *g* grams, *SD* standard drink

The risk of alcohol use should be evaluated at least in the previous year in women, especially when a pregnancy is planned. Screening can be conducted by anyone, using validated questionnaires or simply by asking open-ended standardized questions (e.g., the National Institute on Drug Abuse quick screen). The latter questionnaire uses the following questions: "In the past year, how many times have you drunk >4 alcoholic drinks per day? Used tobacco? Taken illegal drugs or prescription drugs for non medical reasons?" (Resource guide: screening for drug use in general medical settings. March 2012. Available at: https://www.drugabuse.gov/publications/resource-guide-screening-druguse-in-general-medical-settings/nida-quick-screen). If women drink more than the recommended limit defined above (in SD per day or per week), they are considered at risk. Standardized questionnaires such as the AUDIT-C may also be used. The AUDIT-C is a brief alcohol screen that reliably identifies patients who are hazardous drinkers or have active alcohol use disorders. An AUDIT-C score > 3 in women means harmful alcohol use (Bush et al. 1998).

Health Consequences in Women

In many industrialized countries, women were used to live longer than men, outliving men by an average of 5 years. Men drink more frequently and in larger quantities than women, which explains why they have a higher rate of deaths and disabilities related to alcohol. However, women's increased tobacco and alcohol consumption will probably narrow this gender gap in illness and death over time. Moreover, alcohol-related health issues start sooner in women than men.

Alcohol

The WHO (2014a) reported the distribution of all alcohol-attributable deaths: 7.6% of all male deaths were attributable to alcohol compared to 4% of female deaths; across disease categories, females were overrepresented in the category cardiovascular diseases and diabetes (58.2% of all these deaths were attributable to alcohol vs. 22.1% in men). In women, the RR of mortality due to hemorrhagic stroke was seven as compared to two in men for the same amount of alcohol consumption (120 grams/day) (Patra et al. 2010).

The global alcohol-attributable burden of disease (in thousands of disability-adjusted life years (DALYs) showed a higher percentage of alcohol-attributable DALYs in men (7.4% in males vs. 2.3% in females). Yet, in the following disease categories, the prevalence observed in females outnumbered males: cancer (10.2 vs. 8.2), cardiovascular diseases and diabetes (33.6 vs. 10.6), and gastrointestinal diseases (http://www.who.int/substance_abuse/publications/alcohol_2014/en/). The risk of breast cancer increased according to the daily dose of alcohol used with a relative risk (RR) of 5–9 with 1 standard drink/day and of 41 with 3–6 standard drinks/day (Schütze et al. 2011). According to Rehm et al. (2016), the RR of ischemic heart disease was higher in women for the same amount of alcohol consumption, with virtually no effect in men when alcohol consumption was less than 100 grams/day as compared to only 30 in women. The protective effect of alcohol at low dose was less clear in women as compared to men in whom a clear decrease of RR of ischemic heart disease was observed at doses lower than 2–3 standard drinks per day. In the same way, the RR of liver cirrhosis increased by 13 with 4 standard drinks of alcohol in women as compared to 6 standard drinks/day in men (ICAP 2013). Overall, women are more susceptible to alcohol dependency, liver cirrhosis, and tissue damage than men (ICAP 2013).

Tobacco

The WHO reported the distribution of all tobacco-attributable deaths which were higher in men and women as compared to alcohol-attributable deaths, 11% of all male deaths were attributable to tobacco compared to 6% of female deaths (http://www.who.int/tobacco/publications/surveillance/rep_mortality_attributable/en/). The RR of death in women who smoke was 12 for respiratory diseases, 7 for lung and bronchus cancer, 3 for cardiovascular diseases, and 5 for cerebrovascular stroke (Ribassin-Majed and Hill 2015). Tobacco-attributable burden of disease (including second hand tobacco smoke) was the third leading cause in 2010 (6% of DALYs); second hand tobacco smoke contributes about 1% of the total global disease burden (Samet and Yoon 2010). In the USA, Jemal et al. (2008) have reported an important decrease of annual age-adjusted death rates from almost all cancers among females (including breast cancer) except for lung and bronchus cancer, which has dramatically increased since the 1930s. Pirie et al. (2013)

confirmed these results in a cohort of 1.2 million females followed up for 12 years in the UK. The relative risk of lung cancer was 21 in smoking women.

Illicit Drugs

In contrast, the total burden (DALYs) of drug dependence remained about half in women as compared to men (Degenhardt et al. 2013); the highest number was observed with opioids.

Vulnerability and Environmental Triggers (Gender Differences)

Emotional and Psychiatric Disorders

Men and women experience dissimilar emotions in response to a social stimuli and show diverse susceptibility to stress and mental diseases (Thibaut 2016; Kuehner 2017). In general, women with addictive behaviors exhibit higher comorbid neuropsychiatric disorders and suicidal tendencies than men (Whiteford et al. 2013). Consistent with negative reinforcement mechanisms of addiction, drug-dependent women express greater negative emotional states such as stress, anxiety, and depression (Griffin et al. 1989; Zilberman et al. 2003), and, in turn, these are more likely to trigger craving and relapse in women as compared to men (MacDermott et al. 2006; Fox and Sinha 2009).

For example, women may smoke to temper negative emotions; depressed smokers are more likely to become nicotine dependent and less likely to quit smoking; they have also a greater risk of relapse after a cessation attempt (Borrelli et al. 1996; Carroll et al. 2004; Wilhelm et al. 2006). Women may also smoke because of negative life experiences, lower status in the society, and the inequality they face (Tyas and Pederson 1998; Department of Health and Human Services, 2001: Women and smoking a report of the Surgeon General, https://www.cdc.gov/tobacco/data_statistics/sgr/2001/complete_report/index.htm) or in response to other types of emotional distress such as anger, resentment, or anxiety (Benowitz and Hatsukami 1998); finally, they may also smoke to better fit the societal norm.

Female drug users and pathological gamblers share the same comorbidity with dissatisfying social conditions (e.g., lack of education, low job status, poor financial income) or psychiatric disorders (anxiety, depression, stress-related disorders).

Women who had a past history of depressive disorders, as compared to women who did not, have a significantly increased risk of illicit drug use, cigarette use, and heavy alcohol use (Brady and Randall 1999). Women are also more likely to have past histories of physical and/or sexual abuse, partners who are drug users or who are violent, which may increase the risk of addictive disorders. In contrast, as compared to men, they have less conduct disorders, less impulsivity, and less sensation-seeking and risk-taking behaviors, which are known to increase the risk of addiction (WHO: http://www.who.int/mental_health/prevention/genderwomen/en/).

Weight Control (Tobacco)

In industrialized countries, the media promotes an image of female attractiveness where women are expected to be youthful and thin. Weight control and dieting became major obsessions among adolescent girls regardless of the cost to their health (Tomeo et al. 1999). Being slim gives these girls self-confidence. Many women use smoking as a means of weight control to better fit this western societal norm of thinness (Women and smoking: a report of the Surgeon General Rockville, MD USA, https://www.cdc.gov/mmwr/preview/mmwrhtml/rr5112a4.htm). In a population of students in Minnesota (USA), Fulkerson and French (2003) have reported that 50% of adolescent female smokers, compared to 28% of male smokers, reported smoking cigarettes to lose weight or control weight in the previous 12 months. Afro-American females were less concerned (25%). Adolescent heavy smokers reported three times more frequently than light smokers using tobacco to control weight. Women who smoke to control weight report greater dietary restraints and more eating disorder symptoms. In addition, restrained eaters endorse the use of smoking for weight control purposes significantly more than unrestrained eaters do. Women's concerns about weight may encourage smoking initiation, be a barrier to smoking cessation, and increase relapse rates among women who stop smoking. Additionally, women tend to gain more weight than men do after quitting smoking (Pirie et al. 1991; French and Perry 1996).

Environmental Factors (Social Representation, Peers, Parents, Socioeconomic Factors, etc.) and the Interplay with Genetic Factors (Tobacco)

Social representation of tobacco is associated with maturity and adulthood in men and with being sophisticated, modern, free, equal to men, feminine, and sexually attractive in women. There is a significant relationship between positive attitudes toward smoking and initiation of smoking among females or youth (Weinstein et al. 2005). In industrialized societies, smoking is a powerful mechanism for self-enhancement and improvement of social image. Role models who smoke are frequently seen as tough, sociable, and sexually attractive; interestingly, when adolescents became adults, there was more cessation among those who assumed adult social roles and less cessation among less educated individuals and in those with smoking parents (Chassin et al. 1996). Nichter et al. (2004) have reported some examples of false ideas about tobacco in India: college students believe that more-expensive cigarettes are made of better tobacco and are less harmful; they also think that cigarette smoking may increase cognitive functions. Moreover, although many of the young women disliked smoking, the majority thought it would be inappropriate to disclose those feelings to a male.

Tobacco industry has used the false idea that tobacco is linked to women's empowerment by suggesting that cigarette smoking symbolizes fashion, freedom, gender equality, and "modern" styles and values and that it helps in weight reduction. In industrialized countries, tobacco companies have used these firmly established strategies for years, and now they are focusing on developing countries. Alcohol industry was also highly inspired by these marketing techniques (Samet and Yoon 2010).

In a cross-sectional survey of approximately 12,000 sixth- and eighth-grade students in India, Mathur et al. (2008) found that students from government schools, as compared to private schools, were more likely to be current (within the previous 30 days) and ever-smokers of "bidis" and cigarettes. They were also about four times as likely as private school students to have ever used "bidis." The survey found a higher prevalence of many psychosocial risk factors among students in government schools. Interestingly, 2 years later, in 2006, the relationship between smoking and socioeconomic status reversed (Mathur et al. 2014).

It is difficult to determine whether female adolescents model their behavior after friends or select peers with similar behavior (e.g., tobacco smoking increases in women or in schools where popular students smoke (Boardman et al. 2008).

Chassin et al. (2008) have reported that heavy smoker parents (with an early onset and persistence over time) had the highest risk for transmission of smoking to their adolescent children. However, in US adolescents, cigarette smoking among mothers was associated with a greater risk of cigarette smoking by daughters than by sons. Pocket money and allowing smoking in the home were also key determinants of daily smoking by adolescents, especially in girls. Kendler et al. (2012) have compared the daily number of cigarettes smoked in pairs of twins and shown that, from the age of 13 to the age of 40, genetic factors have played an increasing role (almost 60% of the liability at 40 years old), whereas, during adolescence, peers and familial environment contributed each for half of the variance in liability (whatever the gender).

Other factors underlying sex differences in tobacco use were identified in several studies (West et al. 1999; Berlin et al. 2003; Slater et al. 2007). Pleasure/rewarding, compulsion, and gesture are as important in men and women; in contrast, transgression as well as psychostimulant effects of tobacco might play a greater role in women who smoke. In women, restrictions as well as the availability of a drug on the legal market or the price may reduce tobacco smoking or drug intake.

Marketing

Tobacco (for Review, See Samet and Yoon 2010)

Young women are seen everywhere by the alcohol and tobacco industry as a potential growth market. Nichter et al. (2004) quoted an interesting example of tobacco marketing in India, in the 1990s: a tobacco company launched a women's cigarette named Ms. The launch involved large-scale promotion and the use of attractive female models who promoted "Ms" and gave away free samples. In response to protests by women activists about the direct targeting of women and girls in a culture where females traditionally do not smoke, company representatives rallied to the defense of Ms, explaining that "the brand was targeted towards emancipated women, that they were showing models only in Western rather than traditional Indian dress, and that the female models were not actually shown smoking." Concerned that Indian women might be hesitant to purchase the cigarettes in shops, advertising copy proclaimed: "Just give us a call, and we will deliver a carton at your address!" Tobacco advertising in India associates cigarette smoking with financial success and make it appear attractive, it targets both high- and low-SES youth (Reddy and Gupta 2004). After the 1995 India-New Zealand cricket series sponsored by tobacco companies, adolescents and young adults thought that smoking could improve athletic performance, including batting and fielding in cricket players (Nichter et al. 2004).

GW Hill (CEO of the American Tobacco Company) wrote in 1928: "If women start smoking, it is like opening a golden mine in our garden." For years, a famous American tobacco company has offered clothing items and accessories in exchange for proofs of purchase from packs of cigarettes. Some additives such as menthol, which are more frequent in women's cigarettes, increase the risk for dependence. Concomitantly, industry attempts to reduce health fears in women by presenting figures on lower nicotine, tar content of particular brands, with the implication that these brands are better for health.

Alcohol

Following the example of the tobacco industry, the alcohol industry increasingly targets their promotional activities at women. For this purpose, they use a variety of techniques such as TV program sponsorship, fashion blogs, social media, special events (girls' night out, offering free drinks for women, giving fashion advice), famous actresses used as spokeswomen to portray alcoholic drinks as glamorous and sophisticated. . .sponsoring of Arts, Sports, as well as of Women's associations or research programs. . .. e.g. Heineken published an advertisement for its drink in a newspaper that encouraged funding for breast cancer research, despite the link between alcohol consumption and breast cancer.

As early as in the 1950s, companies have used babies to promote tobacco smoking or alcohol use in women. For example, in France, beer was promoted as a way to enrich maternal milk during breastfeeding.

The alcohol industry develops specific tastes for women (fruit-flavored beer). They also target women with "light" products (fewer calories) and "healthy" alcohol products. Alcohol advertising has also targeted women by marketing products such as alcopops or spirits with a high alcohol content. Beer is also increasingly being marketed to women. The companies decrease prices, which is an important incentive in women. The companies even try to get female customers to personally connect with the product. Clever marketing strategies target various subsets of women. For example, to appeal to younger women, companies are using attractive men. Other advertisements depict women mimicking historically male behavior while enjoying beer to show that women can "keep up with the boys." Advertisements promote also gender equality, increased sexual attractiveness when using alcoholic drinks

(European Alcohol Policy Alliance. 2009. Alcohol trends – markets and innovations. http://eurocare.org; European Centre for Monitoring Alcohol Marketing (EUCAM). 2008. Women – the new market. Trends in alcohol marketing. http://www.eucam.info/content/. . ./women_the_new_market_final.pdf).

Pregnancy and Psychoactive Substance Use (for Review, See Thibaut et al. 2019)

Alcohol

Despite the international consensus recommending total abstinence during pregnancy, prenatal alcohol exposure remains a major public health issue. Prenatal alcohol exposure is the major cause of avoidable neurodevelopmental disorder. Yet, a recent review of public health interventions aimed at increasing awareness and reducing alcohol consumption in pregnant women concluded that there was an improvement in knowledge but the reduction in alcohol use reported was not significant in half of the studies (Crawford-Williams et al. 2015).

According to a recent meta-analysis conducted by Popova et al. (2017), the global international prevalence of consuming any amount of alcohol during pregnancy was estimated to be 9.8%, with the highest percentage observed in Europe (25.2%) and the lowest in the WHO Eastern Mediterranean Region countries (i.e., Arabic countries) (0.2%). There is also an increasing trend toward using multiple substances, either concurrently or alternately, which further increases the risk for the fetus. According to a review conducted by Skagerström et al. (2011) that assessed data from 14 studies published between 2002 and 2009, the most consistent predictors for alcohol use during pregnancy were prepregnancy alcohol consumption and past history of sexual abuse or exposure to violence. Unemployment, marital status, and education level were less consistent predictive factors.

In fact, alcohol consumption during pregnancy is associated with a large range of adverse effects including spontaneous abortion, stillbirth, weight and growth deficiencies, birth defects, prematurity, and fetal alcohol spectrum disorder (FASD). FASD, as first described by Lemoine et al. (1968), is characterized by growth deficiencies, craniofacial dysmorphologies, and CNS damage (Del Campo and Jones 2017); prenatal alcohol exposure can cause intellectual disability; deficits in learning, attention, language, and motor development; poor impulse control; and hyperactivity. Fetal Alcohol Syndrome (FAS) represents the extreme end of the FASD spectrum. Prenatal alcohol exposure may also result in later mental problems such as depression, anxiety, inappropriate sexual behavior, increased rate of delinquency, or drug and alcohol problems which might be prevented or attenuated by early diagnosis and management of FASD (Cook et al. 2016). Unfortunately, the diagnosis of FAS or FASD is usually made after birth (sometimes at adult age), when alcohol damage has become irreversible and permanent. According to Popova et al. (2017), the worldwide prevalence of FAS among the general population was estimated to be 14.6 per 10 000 people. In line with the prevalence of alcohol use during pregnancy, the prevalence of FAS was the highest in Europe

(37.4 per 10 000) as well as in South Africa (585.3 per 10,000) and the lowest in the WHO Eastern Mediterranean Region countries (Arabic countries) (0.2–0.9 per 10 000). On the basis of data obtained in Australia, Canada, Croatia, France, Italy, South Korea, and the USA, with prevalence of both alcohol use during pregnancy and FAS available, these authors estimated that 1 in every 67 mothers who consumed alcohol during pregnancy delivered a child with FAS (Popova et al. 2017). Yet, a pregnant mother using alcohol will not necessarily give birth to a child with FAS. Research evidence is inconclusive about the effects of low levels of alcohol use during pregnancy and its risk for the fetus (Henderson et al. 2007); however, a toxic effect of alcohol was well documented with moderate to heavy levels of exposure (30–40 g per occasion and 70 g or more per week) (O'Leary and Bower 2012). In conclusion, there is no safe level of alcohol use during pregnancy, and abstinence is recommended.

All perinatal caregivers should be aware of fetal problems related to alcohol use during pregnancy (such as FASD or birth defects) as well as of risks associated with pharmacological treatment for AUDs. All childbearing age women must be informed about the potential harm of alcohol prenatal exposure. Ideally, women should stop alcohol use when pregnancy is planned and, in any case, as soon as pregnancy is known. Detecting patterns of alcohol maternal drinking should be systematically conducted at first antenatal visit and throughout pregnancy. At birth, fetal alcohol spectrum disorders must be searched for, and alcohol metabolites should be measured in meconium of neonates in any doubt of fetal alcohol exposure (Lamy et al. 2017). Breastfeeding is not recommended in case of alcohol use or pharmacological treatment for maintenance of alcohol abstinence.

The International Association for Women's Mental Health in collaboration with the World Federation of Societies of Biological Psychiatry recently published guidelines (WFSBP and IAWMH Guidelines for the treatment of alcohol use disorders in pregnant women (Thibaut et al. 2019): https://www.wfsbp.org/fileadmin/user_upload/Treatment_Guidelines/WFSBP_guidelines_AUDs_and_pregnancy.pdf: you can freely download our guidelines; our guidelines are summarized on pages 36–42).

In some cases, alcohol use is associated with polyconsumption (including tobacco and illicit drugs), homelessness, comorbid psychiatric or somatic disorders, and domestic violence, which require specific psychosocial and/or medico-psychiatric care. The WHO published interesting recommendations for first-line intervention regarding the identification and management of intimate partner violence often associated with alcohol use disorders (Clinical handbook at http://apps.who.int/iris/bitstream/10665/136101/1/WHO_RHR_14.26_eng.pdf), and clinical and policy guidelines (http://apps.who.int/iris/bitstream/10665/85240/1/9789241548595_eng.pdf).

Tobacco

It is estimated that 20 to 30% of pregnant women use tobacco during pregnancy worldwide (Lamy and Thibaut 2010). Fetal exposure to tobacco is strongly associated with preterm birth, placental hematoma, low birth weight, and birth defects (Lamy et al. 2015; Ion et al. 2015). In previous studies, young age, ethnicity, low socioeconomic status, past personal history of psychiatric disorders, lack of social support, alcohol or illicit drug use during pregnancy, and a smoking partner were considered as risk factors for tobacco use during pregnancy (Cui et al. 2014; Lamy et al. 2019). In a multinational, anonymous web-based study (evaluating 8344 pregnant women in 15 European countries), 35% reported tobacco smoking before pregnancy, and 26% maintained smoking during pregnancy of whom 11% smoked more than 10 cigarettes per day (Smedberg et al. 2014). Yet, quitting tobacco smoking at any time during pregnancy has positive consequences for the fetus. These results emphasize the urgent need for community education and implementation of prevention strategies focused on risks associated with tobacco use during pregnancy.

Illicit Drugs

Concerning substance use during pregnancy, the WHO published interesting and well-documented guidelines for the identification and management of substance use and substance use disorders in pregnancy (WHO 2014b).

Public awareness about risks of alcohol, tobacco, and illicit drug use during pregnancy should be raised. Pregnancy is a window of opportunity for addressing alcohol and also tobacco or illicit drug use as a vast majority of pregnant women are interested in giving birth to a healthy baby. Fathers or partners should be included as much as possible in withdrawal of tobacco, alcohol, and/or illicit drug use.

Gender Differences in Treatment

Treatment is likely to be successful in women, but there are barriers to entry. Women have lower expectations about treatment and often they do not perceive the need for it (Erol and Karpyak 2015). The stigma associated with addiction in women can make accessibility to treatment even more difficult (WHO: http://www.who.int/mental_health/prevention/genderwomen/en/). In addition, pharmacodynamics and pharmacokinetics may contribute to differential responses (Franconi et al. 2012). Further research is needed in this field (Thibaut 2017).

Finally, women have special needs in case of pregnancy. Guidelines for the management of alcohol use disorders during pregnancy (Thibaut et al. 2019) as well as guidelines for the identification and management of substance use and substance use disorders in pregnancy (WHO 2014b) have been recently published and can help caregivers.

Conclusion

Women are gradually losing the protection they had from historic social roles. In general, girls and women seem more influenced by beliefs about weight control and self-image as well as by female friends or role models when they use alcohol or tobacco. As compared to men, women more often use psychoactive substances to cope with stress and negative feelings. Pharmacokinetics and pharmacodynamics differences, reward process specificities, and female hormones play a role in gender differences observed in addictive behaviors. Further research is needed, especially concerning treatment features according to gender.

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Classificatory Systems and Gender

21

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_34

Abstract

Classificatory and diagnostic systems play an important role in helping clinicians make treatment decisions, communicating with each other, supporting medical education, and conducting research. Gender influences multiple aspects of psychopathology, help-seeking, social support, economic status, cultural expectations, and factors such as vulnerability to discrimination and violence. It is therefore essential for the DSM and ICD nosological systems to become gender sensitive. Gender differences are seen in prevalence, risk factors, course, and prognosis of psychiatric illness. The recent revisions in the diagnostic systems have tried to address some of these issues; however, there is still an opportunity to use better gender-sensitive approaches in the classificatory systems. As we move toward newer paradigms in classification, from a descriptive to an etiological approach, we have opportunities to include biological aspects of gender, that is, sex, as well. Various approaches in classification varying from a gender-neutral approach to providing differing diagnostic thresholds for men and women, using diagnostic specifiers, or having gender-specific diagnosis can improve care for both genders. In this chapter, we discuss various gender-based approaches that classificatory systems have used and make suggestions for better classification of psychiatric disorders in women's mental health based on the influence of gender on psychiatric illness.

Keywords

Gender · Classificatory systems · Women's mental health · DSM · ICD · Nosology · Diagnosis

List of Abbreviations

ADHD	Attention deficit hyperactive disorder
AN	Anorexia nervosa
ASD	Autism spectrum disorders
BPAD	Bipolar affective disorder
BPD	Borderline personality disorder
cPTSD	Complex post-traumatic stress disorder
DSM	*Diagnostic and Statistical Manual of Mental Disorders*
ICD	International Classification of Diseases
ID	Intellectual disability
LLPDD	Late Luteal phase dysphoric disorder
MAD	Mixed anxiety-depression
MDD	Major depressive disorder
PMDD	Premenstrual dysphoric disorder

> *As historians of medicine have increasingly argued, illness is the product of a subtle interplay between cultural perspectives and what is also a shifting biological reality. This is particularly the case with mental illness…*
> *(Excerpt From: Lisa Appignanesi "Mad, Bad, and Sad.").* (Appignanesi 2011)

Introduction

The development of systems for classification of medical diseases has been fundamental to the practice of medicine, and it has long been recognized that diagnosis is key to all medical practices and medical research investigations. The diagnostic system lays the foundation in helping clinicians make treatment decisions, informing prognosis, communicating with scientific experts and medical professionals, and supporting medical education. Another important purpose is to conduct research and plan for public health services.

The current diagnostic systems follow the tradition set in place since the publication of the third edition of *Diagnostic and Statistical Manual of Mental Disorders* (DSM-III) that follows a conceptual paradigm that is empirically based, atheoretical, and agnostic toward etiology (Pichot 1986). However, we are now moving away from the clinically descriptive paradigms and seeking a new diagnostic system grounded in neurobiological science (North and Surís 2017).

The diagnostic criteria should, ideally, not show any bias based on prejudices within society, which in turn has increased the interests of DSM and International Classification of Diseases (ICD) nosological systems to become cultural and gender sensitive.

History of Gender Biases in Psychiatry

From the mid-nineteenth century through the twentieth century, women were diagnosed with disorders such as neurasthenia, nervous prostration, dyspepsia, and hysteria, which were attributed to the “wandering” of the uterus within women’s bodies (Ehrenreich and English 1979). Women institutionalized in mental asylums were subjected to clitoridectomies, hysterectomies, removal of their ovaries, and leeches applied to their labia and prescribed forced rest cures for their psychiatric diagnoses (Ozarin 1994).

When women began advocating for increasing social and political rights, medical experts evoked frightening pronouncements about the possible impact this might have on society. Women were accused of having a disorder called andromania, “a passionate aping” of “everything mannish,” and it was feared that if women won the right to vote, it would “make them change physically and psychically and pass along pathologies to their children.”

A contemporary example of gender bias was the invisibility of the impact of childhood sexual abuse, adult sexual assault, domestic violence, and other traumas on the lives of women, in the classificatory system. Symptoms related to the consequence of abuse and trauma were often misdiagnosed as borderline personality disorder (BPD), with some authors reporting that there is a female gender bias with regard to the diagnosis of BPD (Becker and Lamb 1994).

Gender and Nosology

Gender is defined as a complex psychological, biological, and behavioral process that influences an individual's representation as female or male or the psychosocial expression of living as a man or woman (Narrow et al. 2007).

Gender influences all aspects of psychopathology, including the stressors and exposures that precede the onset of disease, symptom expression, help-seeking behavior, how one is treated in a system, social support, economic status, cultural expectations, and other environmental factors that could influence individual vulnerability to mental illness. Gender also plays a major role in expressions of distress and definitions of normality and pathology (Narrow et al. 2007).

Hence, culture and gender are integral factors when making a psychiatric diagnosis, and a greater appreciation of the interplay between culture, gender, and biology can help clinicians improve diagnosis and treatment planning.

Evolution of Classificatory Systems: Gender Considerations in Classificatory Systems

The first edition of DSM was published in 1952, and the DSM-I did not include any gender-related findings, though it highlighted the need for statistical information and provided tabulations for reporting demographic and related information (Grob 1991). The DSM-II (1968) had not shown much progress from the first edition, though it mentioned a higher prevalence of "delinquent reaction of childhood" in boys and discussed gender differences in the expression of the disorder.

The DSM-III came into light in 1980 and had a drastic change in the approach to diagnosis, breaking away from psychoanalytic jargon and adopting a phenomenological, descriptive, categorical approach, seeking and using documented research findings, enumerating more precise criteria, and assigning codes. DSM-III also added gender-specific information and sex ratios for many disorders. These data varied widely, with some being specific and others vague, and some acknowledging that there was no available information. However, there was definitely an increased gender focus over previous editions.

The success of DSM-III and DSM-III-R brought diagnosis to the forefront in psychiatry, but this also triggered gender debates concerning the proposed diagnosis of late luteal phase dysphoric disorder (LLPDD) and its potential harm to women (Endicott 2000). The DSM-III-R included more precise sex ratios, and "gender identity disorder" included separate diagnostic criteria for children, but not for adolescents or adults.

In the context of severe mental disorders, the description of schizophrenia in DSM-III had an upper age limit of 45 years for the onset of schizophrenia, which may have caused an artifactual increase in rates of schizophrenia in men and also a neglect of late-onset schizophrenia in women. This age criterion was later removed from DSM-IV.

The DSM-IV expanded the manual text to include information on gender-specific differences in the course and expression of disorders under the heading "Specific Culture, Age, and Gender Features."

The working group for LLPDD changed its name to "premenstrual dysphoric disorder" in DSM-IV.

Several critiques questioned statements provided in the DSM-IV concerning the differential prevalence of mental disorders for men and women. The concerns raised were regarding two issues in particular, biases in sampling and biases within the diagnostic criteria themselves, which complicate the understanding of differential sex prevalence (Hartung and Widiger 1998).

The DSM-IV-TR improvised on the previous version by including independently critiqued systematic reviews to provide written documentation for the sex and gender variation and also included potential explanations for reported sex ratios (e.g., help-seeking behavior, study setting, inaccurate assessments, culture and age differences) (Pichot 1986; Spitzer et al. 2002).

The development of the DSM-5 demonstrated a commitment to being more gender and culturally sensitive. Specific task teams and subgroups were employed to address gender, cultural, and cross-cultural issues, including diverse representation in the development process. This process resulted in fairly significant changes to diagnostic labels and culture-specific diagnoses (van de Water et al. 2016).

It is noted that mental disorders show marked gender differences in prevalence, symptomatology, risk factors, or course. Some disorders only occur in women such as perinatal depression and premenstrual dysphoric disorder (PMDD), while others are markedly influenced by female-specific factors such as hormonal changes over the life cycle or during reproductive processes.

Riecher-Rössler in her paper on "Prospects for the classification of mental disorders in Women" highlights the fact that the current classificatory system (ICD and DSM) hardly takes into account gender-specific aspects (Riecher-Rössler 2010).

Sex with its biological and gender with its psychosocial correlates had a strong influence on psychiatric disorders with respect to the prevalence, symptomatology, risk factor, course, treatment-seeking behaviors, and management, but this did not find its presence in the current classificatory systems.

In her paper, she discusses how having a gender-specific or gender-sensitive classification will have a positive influence on research and clinical practice. The author's suggestions on how a gender-based approach can be applied to the classificatory system are by using:

(a) Gender-specific thresholds – using different clinical thresholds for men and women
(b) Gender-specific diagnoses – exclusively diagnosed in women
(c) Gender-sensitive approaches – situation-specific diagnosis and using specifiers (Riecher-Rössler 2010)

We use this three-pronged gender-based approach to examine several psychiatric disorders in the next part of the chapter. For this, we first review gender differences in some of the major disorders and then discuss how they might influence classification.

Gender Aspects of Psychiatric Disorders and Their Influence on Classificatory System

Schizophrenia

Sex and gender differences in schizophrenia have been described for a long time. Such differences have been described in the incidence and prevalence, age at onset, risk factors, symptomatology, course, and prognosis of schizophrenia. Gender differences have also been seen in brain morphology and functioning.

Age at Onset

Age at onset of illness in schizophrenia is one of the most consistently recorded gender differences across the world and in different cultures. Schizophrenia has been shown to have a later age of onset in women and a slightly better course, especially in younger women (Jablensky et al. 1992).

There is some evidence that the age difference might be due at least partly to the female sex hormone estradiol being a protective factor. Men show their peak of first admissions in their early twenties and women only in their late twenties. Furthermore, there is a second, smaller peak of onset in women after age 45 (Häfner et al. 1993). Studies suggest that women are protected to some extent against schizophrenia between puberty and menopause by their relatively high physiological estrogen production during this phase (Riecher-Rössler and Häfner 1993, 2000).

It is around age 45, several years before menopause sets in, that estrogen production begins to fall. Women lose the protection estrogens potentially give, and this may account for the second peak of illness onset in women after age 45. Several investigators have reported initial promising results using estrogens as a therapeutic agent in schizophrenia (Riecher-Rössler 2000, 2018).

Symptomatology

Negative symptoms occur more often in men, and more positive and affective symptoms are seen in women. However, these results are not consistently established (Riecher-Rössler 2000, 2018).

Course

Women seem to have a more favorable course and a better psychosocial outcome than men. They have been shown to have fewer and shorter hospital stays, better social adjustment, and a better living situation than men. Women's mortality is also lower, mainly due to their significantly lower suicide rate. The tendency for the course to be better in women certainly also has to do with the later age of onset, which is associated with better social integration. Other contributing factors could be better care offered to women and women's better compliance (Thorup et al. 2014).

After age 40, women not only fall ill twice as frequently as men; their symptoms and the course of their disease also seem to be worse. However, there seem to be more differences between women and men in late-onset schizophrenia. In the ABC (Age, Beginning, Course) schizophrenia study, men with schizophrenia onset over 40 years showed significantly milder symptoms than those with early onset, whereas late-onset women suffered from symptoms almost as severe as early-onset women (Riecher-Rössler et al. 1997).

The Role of Estrogen

In this context, it has also been suggested that women who are vulnerable to the development of schizophrenia may have a generally lower level of endogenous estrogen than healthy women. Therefore, they are less likely to experience the neuroprotective effects of endogenous estrogen, and this potentially contributes to the onset of schizophrenia (Townsend Taylor et al. 2009).

Initial studies have documented positive therapeutic results achieved through the use of estrogen. Further studies are needed, particularly with regard to certain subgroups of women, i.e., those with frequent perimenstrual relapses or menopausal and postmenopausal women.

Gender and Classificatory Systems in Schizophrenia

The DSM-5 has given details of the gender differences in incidence, age at onset, course, and prognosis. This section in DSM-5 also discusses the possibility of late-onset psychosis, through meeting the criteria of schizophrenia, being a completely different entity in women beyond 55 years of age.

The criticism with the approach in the current classificatory systems (ICD-DSM) is that it embraces an Aristotelian view of psychiatric disorders as discrete entities that are characterized by specific signs, symptoms, and natural histories. This poses a significant problem in explaining the heterogeneous population of individuals with similar symptoms but of very different etiopathogenetic background or being different subtypes of the disorder. Studies have suggested that women with later age at onset of psychosis are considerably different from women with early-onset psychosis.

A gender-focused approach here would be to have “age as a specifier” in women, which could add value to both research and clinical practices. Exploring the difference in age of onset can further help understanding the etiological role of estrogen, and this also opens opportunities to use estrogen as a therapeutic tool for psychosis.

Another approach could be an etiological one as discussed in the Research Domain Criteria (RDoC).

RDoC has a goal to create a neuroscience-based framework for studying mental disorders. The basis of psychosis in women may be a neural circuit activation in response to hormonal changes which needs to be researched further. This may also help us develop personalized treatments and help deliver preventive interventions for psychiatric disorders.

Mood Disorders

Bipolar depression

There is strong, consistent, and widely accepted evidence that depression impacts differently in men and women with respect to the prevalence, course, symptom profile, and comorbidities. Increased risk for women is also noted in the diagnostic subtypes of depression – dysthymia, atypical depression, seasonal affective disorders, and rapid cycling and mixed affective states of bipolar affective disorder (BPAD).

Prevalence

Several epidemiological studies have suggested that the prevalence of depression is twice as common in women as compared to men. Recent epidemiological research suggests evidence for a female preponderance in unipolar depression, present across different cultural settings (Lucht et al. 2003; Seedat et al. 2009).

The Lundby depression study identified that major depressive disorder (MDD) and adjustment disorder with depressed mood were significantly higher in women than men. They also found the mean age of onset of all subtypes of depression in the Lundby population was 46.2 years in women and 47.6 in men. The age-specific incidence rates indicate that women aged 15 and upward are more prone to develop unipolar non-melancholic depression than men with a considerable gender gap in middle life.

This study also identified that the highest incidence rate for depression among women was found in the perimenopausal age band (40–49 years) and the lowest rate in the postmenopausal age band (60–69 years). These findings are in line with earlier studies showing an increased risk of developing depressive symptoms including first onset of MDD during the menopausal transition. Some studies have indicated that it may be the fluctuations in the hormonal milieu in women which carries the depressogenic effect (Bogren et al. 2018).

A common question that arises is whether these differences are true differences or they reflect the differences in the way men and women experience and cope with depression.

Reporting Biases and Threshold for Caseness

Some researchers have been concerned that the sex differences in depression result from men's unwillingness to admit to and seek help. A study looking at how diagnostic criteria influenced the sex ratio in depression identified that men report fewer depressive symptoms than women, in spite of equal social impairment. Men also forget, with time, the frequency of their depressive manifestations, tend to reduce the duration, and also reduce the number of symptoms. Therefore, men report less explicitly on current and even less on earlier depressive episodes.

Women also tend to report sleep, appetite, anxiety, and somatic symptoms more often than men, and thus inclusion of gender-dimorphic items in rating scales and diagnostic algorithms will also influence the depression rates.

Course of Depression

Studies suggest that earlier onset, more chronic and recurrent episodes of depression in women may contribute to lifetime prevalence rates which have been consistently higher among women.

Help-Seeking Behavior

Men seek mental health help far less often than women, and those who do are less likely to be appropriately diagnosed, i.e., women are more likely to be diagnosed with MDD than men, even when they score the same on a standardized diagnostic instrument. This indicates that clinicians may have an unconscious gender bias in their diagnostic judgment. Instead of directly expressing their sadness, depressed men may channel their negative emotions into externalized behaviors, such as yelling, violence, and substance abuse.

Psychopathology

A systematic review of studies looking at gender differences in expression of depression revealed that depressed women reported higher frequency and intensity of symptoms that were included as standardized key diagnostic criteria for depression, whereas depressed men reported higher frequency and intensity of substance use, increased risk taking, and poor impulse control that were not included as part of commonly used diagnostic criteria. These symptoms may exacerbate depression, impede help-seeking, and reduce the effects of depression treatment and also present a physical danger by increasing the risk of accidents and suicide (Cavanagh et al. 2017).

Depressed women reported symptoms that relate to mood and to metabolic and physiological processes at a higher frequency and intensity, including appetite disturbance and weight change, sleep disturbance, fatigue and loss of energy, depressed mood, diminished interest and pleasure, and sexual disturbance and loss of libido (Schuch et al. 2014; Cavanagh et al. 2017).

Women with depression report more atypical symptoms than do men, mainly increased appetite and hypersomnolence. They are also more likely to experience somatic symptoms such as low energy, fatigue, and pain. It is noted that comorbidity with other internalizing disorders is higher among women than among men (Blanco et al. 2012; Schuch et al. 2014). Comorbid anxiety is also more common in women with depression in the earlier ages.

Hormonal Factors

Premenstrual dysphoric disorder (PMDD) and depression in pregnancy and postpartum period have a relation to the cyclical changes in estrogen, progesterone, and other hormones.

Vulnerability and Coping

Certain psychosocial factors such as multiple responsibilities, unequal power status, and vulnerability to sexual and physical abuse are known to predispose women to depression, contributing to the gender gap. Social roles and cultural norms which include gender-specific demands posed by marriage, such as looking after children, have been associated with greater risk for depression, while women entering the job marked face economic discrimination, inequality, role overload, and role conflict posed by concurrent responsibility of household chores and childcare.

Classificatory Systems and Gender in the Context of Affective Disorders

Despite multiple studies focusing on gender and evidence from clinical experience to the contrary regarding gender differences in depressive disorders, DSM-5 states "there are no clear differences between genders in symptoms, course, treatment response, or functional consequences."

Another significant change in DSM-5 which requires attention was to eliminate the category – mixed anxiety and depression (MAD) – and use specifiers of anxious distress in depression. Early research studies suggested that non-specific symptoms of anxiety and depression are common for which MAD was introduced as a new clinical syndrome in the ICD-10 (World Health Organization 1992) and appendix of DSM-IV. It has implications especially for women because perinatal depression is often associated with anxiety symptoms and frequently justifies a mixed anxiety and depression diagnosis.

This syndrome has also been relevant in primary care, and including this may help patients get early treatment to reduce distress and dysfunction and prevent exacerbation to a more serious psychiatric disorder. Studies have noted that MAD group was significantly associated with many potentially clinically relevant validators, including childhood adversity, poor parenting, lifetime traumas, recent life events, high neuroticism, comorbid substance use disorders, and familial aggregation. On the other hand, the predominant concern leading to exclusion of this category from DSM-5 is the possible increase in false-positive diagnoses.

This category has been retained in the ICD-11 draft, which we believe will be beneficial in the early identification, treatment, and further research into diagnostic stability and treatment of this common mental disorder.

Specifiers such as peripartum onset, atypical features, mixed features, and anxious distress are prominent features in women with mood disorder and help include men and women with variations in presentation of depressive symptoms. These specifiers have clinical utility in planning treatment and monitoring response (Cooper 2017).

As discussed above the expression of psychopathology, treatment-seeking, and etiopathological processes differs between men and women, hence the need for gender-sensitive diagnostic assessments for depression which should also be reflected in classification.

Bipolar Affective Disorders

Unlike unipolar depression, in bipolar depression the received wisdom is that there are no major gender differences. There is an unspoken assumption that an equal sex incidence in bipolar disorder is an indication that there are no significant differences between men and women.

Incidence, Course, and Psychopathology

The incidence of bipolar I disorder is approximately equal in men and women. Some studies with clinical samples have reported findings that bipolar II disorder may be more common in women than men. Some studies with clinical samples report that women with bipolar disorder experience fewer manic episodes and more episodes of depression compared to men with bipolar disorder. Women have a rapid cycling course and experience more mixed mania.

Bipolar disorder in women appears to remain unrecognized and untreated for a longer period of time than in men, with a mean delay in treatment of 11 years versus 6 years in men, possibly due to more depressive episodes among women.

It is also well known that the reproductive cycle has an impact on bipolar illness (this has been dealt in detail in a separate section of this chapter).

In the classificatory system, the inclusion of the specifier of peripartum onset for bipolar disorder is a progressive change in both DSM-5 and ICD-11. There is scope for improvement in the classificatory systems to include better gender-specific clinical presentations that may influence sensitive diagnoses and management.

Anxiety and Somatoform Disorders

It has long been held that women report more functional somatic symptoms than do men. A review of the literature suggests that women somatize more than men. Wool and Barsky in their paper suggest five possible mechanisms which may contribute to this phenomenon. These include gender differences in the willingness to admit discomfort; the readiness to seek medical attention; the prevalence of psychiatric disorders such as depression with prominent somatic features; innate differences between men and women in their threshold, tolerance, and sensitivity to minor bodily sensations; and differences in psychosocial stress (Wool and Barsky 1994).

Women seem to experience more frequent, more numerous, more intense bodily symptoms than men. This gender difference is likely affected by a myriad of factors; however, an overview of this complex literature suggests at least three key factors which contribute to the gender differences.

First, women have a higher prevalence of common psychiatric disorders, particularly anxiety and depression, where somatic features are prominent symptoms. Second, women have higher rates of abuse and trauma, which in turn are associated with medical help-seeking and somatic symptom reporting. Third, women and men seem to differ in their thresholds for judging and considering a given sensation to be noxious, unpleasant, and bothersome (Barsky et al. 2001).

The DSM-5 and ICD-11 have modified the diagnostic criteria to improve the clinical utility of this category. DSM-5 has renamed the category somatic symptom disorder, while ICD-11 has renamed it bodily distress disorder. This is also a category where despite culture and gender having a strong influence on presentations of this disorder, the focus on this has been minimal in both classificatory systems.

Classificatory System and Somatoform Disorders

Somatoform disorder is a diagnosis with strong gender bias to the extent that women patients who express emotional difficulties are often viewed as histrionic or somatizing. In women, clinicians seem quicker to conclude non-specific symptoms as having no medical explanation, and they are more often ascribed to psychosocial causes. Studies suggest that women receive less severe medical assessment of chest pain and inadequate treatment of pain symptoms.

We suggest that the classificatory system should use a gender-neutral approach with an opportunity to enlist the psychological factors contributing to the condition. Since many symptoms described are male- or female-specific, separate gender-specific thresholds are to be considered. One of the solutions on how to fix threshold could be by coding for the "core" syndrome, which is the same in both sexes and uses gender and its associated factors as specifiers (Riecher-Rössler 2010).

Neurodevelopmental Disorders

Autism Spectrum Disorders (ASD)

Prevalence

One of the most striking features of ASD is the high male-to-female ratio, which averages at approximately 4:1 but rises to approximately 10:1 in "high-functioning autism" or Asperger syndrome and drops to 2:1 in individuals with comorbid moderate-to-severe intellectual disability (ID).

It is also possible that the high sex ratio in ASD reflects, in part, bias in the diagnostic criteria currently used or in the way these criteria are applied to recognize ASD in practice. If clinicians find it harder to recognize some or all manifestations of ASD in girls compared to boys, this would contribute to the reported high male-female ratio.

The current diagnostic criteria, concepts, or practices are somewhat biased toward the male presentation of social and communication impairments and restricted repetitive behaviors interests, which contributes to girls with ASD being easily missed in the diagnostic process.

More subtle forms of ASD may be difficult for clinicians to recognize in girls than in boys, particularly in the presence of average-range IQ and without behavioral problems. Studies have noted that males are substantially overrepresented among high-functioning cases and males and females are more equally represented among cases with severe ID (Werling and Geschwind 2013).

Presentation of ASD Symptoms and Related Phenotypes in Girls and Boys

A higher proportion of girls with autism is diagnosed with ID as compared to boys. Many studies find no sex differences in overall composite ASD severity as measured on several standard assessment tools suggesting that girls are not more severely affected. However, differences emerge when each core symptom domain of ASD is considered separately.

Internalizing Versus Externalizing

Boys with ASD are found to show more aggressive behavior, hyperactivity, reduced prosocial behavior, and increased repetitive/restricted behaviors and interests compared to girls. Overall, boys with ASD have more externalizing behavior problems, while girls with ASD show greater internalizing symptoms such as anxiety, depression, and other emotional symptoms (Hattier et al. 2011).

Diagnostic Masking

The observed sex differences raise the possibility that male-typical externalizing behaviors are more disruptive in the home or school setting than female-typical internalizing behaviors, preferentially prompting evaluation and diagnosis for boys. High-functioning girls, who present with more socially acceptable behaviors such as being quiet and introverted and developing strong interests in books and dolls, often go unnoticed. Those presenting for evaluation early often have comorbid ID.

Girls also present with stronger imaginative play, more interest in social relationships, and more socially acceptable special interests (such as horses, dolls, pop stars). Girls who do not receive a diagnosis of ASD show more communication difficulties but also show reduced social impairments compared to non-diagnosed boys. These differences could be due to different genetic variants and/or influence of environmental factors.

Hiller et al. (2014) in their paper summarize reasons why ASD may be difficult to detect in girls:

- Behavior of girls at school may seem less impaired or concerning than that of boys.
- Girls show fewer and random restricted, repetitive behaviors.
- Girls are better able to regulate their behavior and adjust to a variety of settings.
- Girls have better imaginative play.
- Girls seek out friendships, even though they have trouble maintaining them.
- Girls retain their ability to engage in conversations, share their interests, and use gestures (Hiller et al. 2014).

Classificatory System for ASD

The gender differences in prevalence of autism spectrum disorders have been described in DSM-5, which also mentions challenges regarding of the current classificatory systems in diagnosing subtle signs of ASD in women or girls with normal IQ.

This is another category which may require separate thresholds for symptoms for ASD in boys and girls. A tailor-made gender-specific diagnosis will be useful in diagnosing girls with high-functioning autism so as to pick up the subtle symptoms which do not overlap with symptoms in boys.

Attention Deficit Hyperactive Disorder (ADHD)

In comparison to ADHD boys, ADHD girls have lower ratings on hyperactivity, inattention, impulsivity, and externalizing problems. In addition, ADHD girls have also been shown to have greater intellectual impairments and more internalizing problems than ADHD boys (Gershon and Gershon 2002).

Girls with ADHD represent a “silent minority,” as a result of their manifestation of the disorder. Specifically, since girls with ADHD display less disruptive behavior and more inattentive behaviors than boys with ADHD, they are less often diagnosed.

ADHD clinics typically receive a higher number of referrals for boys due to their greater likelihood of disruption in settings such as school. Thus, clinically referred girls are more likely to exhibit disruptive behaviors, but may not be representative of most girls with ADHD.

True Differences Versus Diagnostic Bias

Even after accounting for gender differences due to issues of selection bias, measurement invariance, and the possibility that particular symptoms such as greater intellectual impairment which better characterize ADHD in girls are missing from the diagnostic criteria, Arnett and colleagues have identified that boys have more childhood ADHD symptoms than girls (Arnett et al. 2015).

As hyperactive-impulsive symptoms are more characteristic of boys than girls with ADHD, an age-related reduction in hyperactive-impulsive symptoms would proportionately affect the prevalence of ADHD in adult men compared to women (Narrow et al. 2007).

Therefore, ADHD in males may decline with age due to reductions in the hyperactive-impulsive symptoms that are more likely to characterize their disorder, while females with ADHD remains relatively stable, by virtue of being less likely to be characterized by hyperactive-impulsive symptoms.

Gender and Classificatory System in ADHD

The current diagnostic criteria are disproportionately appropriate for children compared to adults and for males compared to females (Owens et al. 2015).

Perhaps because the diagnostic criteria for ADHD were largely developed from samples of male children, their use results in underdiagnosis and underrepresentation when applied to adults of both genders and in girls. We suggest a gender-specific approach with common core symptoms and using different diagnostic thresholds for both genders to improve both research and clinical utility of these diagnostic criteria with the understanding that age and gender interact in the manifestation of symptoms of ADHD.

Disorders Related to the Reproductive Cycle

Women's reproductive life includes pregnancy, postpartum, premenstrual, and perimenopausal periods. These periods are characterized by ovulation-related hormonal cyclicity as well as associated events like pregnancies, deliveries, and motherhood and the process of secession of menstrual cycles and fertility. The periods of reproductive transition are a high-risk period for the onset and exacerbation of psychiatric illness. Studies suggest that sudden estrogen withdrawal, fluctuating estrogen, and sustained estrogen deficit may induce mood and anxiety disorders in estrogen-sensitive women.

In this section, we discuss the presentations of various psychiatric disorders associated with menstrual cycle and pregnancy and discuss their influence on classification.

Premenstrual Dysphoric Disorder (PMDD)

Premenstrual syndrome refers to physiological, psychological, and behavioral changes repeatedly occurring in the luteal phase of the female reproductive cycle and remitting shortly after the onset of menses, causing distress, and disturbing everyday functioning and interpersonal relationships and associated with significant social and professional impairment (Freeman 2003).

Premenstrual symptoms are a broad category encompassing disorders of the same nature with varying severity. In about 20% of women, symptoms are severe enough to require treatment (Halbreich. et al. 2007). Approximately 8% of women at the severe end of premenstrual symptomatology experience PMDD with severely emotionally debilitating symptoms (Halbreich et al. 2007).

The existence of premenstrual syndrome has been long known (Greene and Dalton 1953); however, it has not so far received the attention it deserves, taken into consideration that it disturbs not only everyday life and relationships and causes significant burden as well as significant economic losses (Halbreich et al. 2003).

It was only in 1987 that criteria for a late luteal phase dysphoric disorder (LLPDD) were proposed and published in the Appendix of DSM-III-R. LLPDD was considered a subset of premenstrual syndrome, where the women suffer from mood, cognitive, and physical symptoms in the luteal phase of her menstrual cycle. This triggered debates as several researchers felt that this was pathologizing normal emotions of women, leading to significant false positives and reinforcing the common negative attitude toward menstruation.

A study to determine symptom types and patterns in 180 women with LLPDD identified negative affect, physical symptoms, agitation, and positive arousal as the key areas (Rivera-Tovar and Frank 1990). Subsequently, the term PMDD was adopted and listed as an example of "depressive disorder not otherwise specified" in DSM-IV. The research criteria for the diagnosis were given in the appendix. The work group behind these changes had undertaken an extensive review of the literature up to 1993 and reached good agreement on the proposed diagnostic criteria for PMDD.

The ICD-10 lists "premenstrual tension syndrome" as a physical disorder under "pain and other conditions associated with the menstrual cycle" (World Health Organization 1992).

Due to inclusion of PMDD in the research appendices of the DSM-III-R and DSM-IV, a great deal of research was stimulated, which has established its validity and reliability.

PMDD has now found a place in both the DSM-5 and the ICD-11 draft and is included under depressive disorders. Another change in the DSM-5 is the inclusion of "provisional" if the diagnosis was made retrospectively and the need for a prospective assessment of two symptomatic cycles to confirm diagnosis.

The argument for moving PMDD to a full-fledged diagnosis in the DSM-5 and ICD-11 is that clinical as well as epidemiological studies suggest that PMDD is a chronic condition and some women may experience severe mood symptoms that begin during the luteal phase and terminate with the onset of menses. There is also considerable stability in the course of PMDD from cycle to cycle and over time in the absence of treatment. Very often women with PMDD experience impaired functioning in various domains which improves with treatment (Halbreich et al. 2003). Without clear diagnostic boundaries for PMDD, symptoms may be dismissed or mistaken for a mood disorder, and having more stringent criteria will also ensure that overdiagnosis does not occur (Epperson et al. 2012).

Despite several positive changes in the definition of PMDD, few unresolved issues such as the dichotomy between the physical and mental symptoms are not clear. There is also insufficient evidence to support PMDD as an extreme form of PMS. There is further scope for improvement in classificatory system to capture the diversified phenotypes (e.g., women who report positive mood changes) and report severity on a continuum. This might help us reduce false positives and identify the women who warrant treatment.

Peripartum Disorders

Psychiatric disorders during childbirth have been recognized for many hundreds of years. In the traditional view, three postpartum disorders – the maternity blues, puerperal psychosis, and postnatal depression – have been described, but further studies have revealed a wider range of disorders (Brockington 2004).

The strongest and best-established risk factor for susceptibility to postpartum psychosis is a history of bipolar disorder or previous severe postpartum episodes (Jones et al. 2014). The episodes of mood disorder occurring at peripartum period are of great clinical and public health importance with suicide, a leading cause of maternal death in developed countries and emerging as a leading cause in developing countries (Fuhr et al. 2014). There is a strong temporal relationship of peripartum disorders to bipolar affective disorders. Studies suggest that bipolar women have at least a one in four risk of suffering a severe recurrence following delivery (Jones and Craddock 2001).

Psychopathology

Bipolar women with a previous history of a severe postpartum episode and bipolar women with a family history of postpartum psychosis are at particularly high risk (Jones and Craddock 2001). The presentation of bipolar episodes in the postpartum period shows some differences, with mixed episodes, dysphoric mania, a rapidly changing "kaleidoscopic" clinical presentation, and perplexity and confusion being more prominent (Brockington and Guedeney 1999). Therefore, there is a clear justification for recognizing this very strong relationship between bipolar spectrum disorders and childbirth in the classification systems.

Peripartum Disorders in Classificatory Systems

Perinatal psychiatrists have recommended several changes in both the ICD and DSM to enhance the early detection of perinatal psychiatric disorders and to make it more clinically relevant and in keeping with advancement in science and policy (Austin 2010).

These include:

1. Enhancing the time frame of the onset specifier to include all mood disorders occurring in the first 6 months postpartum, rather than a restrictive time frame of 4 or 6 weeks and specifically mentioning early- and late-onset disorders.
   The rationale for extending the postpartum onset specifier to 6 months for mood disorders was that it would enhance the recognition and treatment of mental health problems in the 1st year after childbirth which have significant impact on the mother and infant. This would ensure that the diagnosis will not be restricted to a small number of new episodes starting within 4–6 weeks postpartum. The 6-week specifier for both depression and psychoses could be used mainly for biological research.
2. Removal of the "Disorders associated with physiological disturbances and physical factors" category and the "not classified" descriptor in the ICD-10 which would bring postpartum disorders into the mainstream, more in line with the DSM.
3. Research has suggested that psychiatric disorders compromise maternal sensitivity during mother-infant interaction and that the disturbance is associated with poorer child outcomes and increases the risk of disturbance in child development (Nicol-Harper et al. 2007).
   One of the recommendations is to also consider a code for mother-infant interaction difficulties to help clinicians and policymakers consider the impact of maternal mental illness on the infant and make adequate service provisions.

4. Two other strong recommendations were to include pregnancy as an onset specifier and to use the word perinatal rather than postpartum.
5. Increasing body of research shows that a proportion of women experience significant symptoms of post-traumatic stress disorder (PTSD) following childbirth, with a high degree of overlap with depression, and a chronic course.

It was also recommended that childbirth-related trauma be included in the types of trauma for post-traumatic stress disorder (PTSD) in the DSM-5, at least as an onset specifier. This was considered important for better recognition of the disorder and better education regarding obstetric care (Condon 2010).

Some changes have been made to PPDs in both classificatory systems, but they are obviously not enough. A major positive change has been the inclusion of pregnancy as an onset specifier for several conditions in both DSM-5 and ICD-11. However, disappointingly, the duration criteria remain the same and are restricted only to 4 or 6 weeks postpartum (DSM-5 and ICD-11). Mother-infant interaction disorders have not been included (even as a category requiring further research), and childbirth trauma does not appear in the section on PTSD.

ICD-11 continues to have a category of “Mental or behavioral disorders associated with pregnancy, childbirth, and the puerperium, not elsewhere classified” with or without psychosis. However, a category of postpartum depression has been added in the latest draft of ICD-11.

ICD-11 has included perinatal onset as a specifier in mood disorders which has not been specified for rest of the psychiatric disorders. This should have ideally been replaced by a perinatal specifier in all psychotic and anxiety disorders like in DSM-5, for better diagnosis, identification, and management.

Menopause

Menopausal transition, or “perimenopause,” is a period of time beginning with the onset of irregular menstrual cycles until the last menstrual period, and this period is marked by fluctuations in reproductive hormones.

Although most women transition to menopause without experiencing psychiatric problems, about 20% experience depression at some point during menopause. There are wide variations in presentation of depression in menopause and cognitive symptoms; paranoia and irritability may be marked in perimenopausal depression compared to symptoms of major depressive disorders seen in men or younger women (Kulkarni 2018).

Current research suggests that perimenopausal depression has a unique presentation and treatment response and possibly a unique pathophysiological process which requires a tailored intervention.

A question to be addressed would be whether inclusion of a specifier for perimenopausal depression would improve further research and better targeted treatment of this condition or increase rates of false positives?

Course of Psychiatric Disorders During Menopause

A second peak in the incidence of schizophrenia is noted among women aged 45–50 years. Some studies have observed a worsening of the course of schizophrenia in women during the menopausal transition. These observations may suggest that estrogen plays a modulatory role in the pathophysiology of schizophrenia. Research suggests that menopausal women may also become less responsive to antipsychotics. Recent studies have found promising results with estrogenic compounds and selective estrogen receptor modulators (e.g., raloxifene) to augment antipsychotic medications in both pre- and postmenopausal women (Kulkarni et al. 2008).

Research has suggested that women with bipolar disorder have higher rates of depressive episodes during the menopausal transition (Marsh et al. 2008). In the context of anxiety disorders, new-onset panic disorder may occur during menopause, or pre-existing panic disorder may worsen. Panic disorder may be most common in women who predominantly have physical symptoms of menopause.

Women in the perimenopause are a vulnerable group; they may show distinct psychopathology, have a worsening of symptoms, have an onset of illness for the first time, and may respond differently to treatment and be prone to more side effects.

In order to address the unique needs of this population, we suggest the inclusion of a specifier of "onset or worsening of illness in menopause" which may be beneficial to improve descriptions of perimenopausal conditions and also help research into newer treatments.

Trauma-Related Disorders: Complex Post-Traumatic Stress Disorder (cPTSD)

There has always been a question about the ability of the standard DSM definition of PTSD to capture the full range of trauma-related psychopathology. Critics have argued that it misses a distinct but important clinical syndrome identified originally in survivors of prolonged childhood sexual trauma, termed complex PTSD (Wolf et al. 2015).

cPTSD is described as a post-trauma syndrome characterized by problems in the domains of interpersonal relationships, somatization, affect regulation, dissociation, and sense of self. A variation of this construct, called "disorders of extreme stress, not otherwise specified," was proposed for inclusion in DSM-IV. However, it was rejected due to concern about its overlap with PTSD and borderline personality disorder (Resick et al. 2012).

DSM-5 also does not have this category but has a new dissociative subtype of PTSD. Pervasive negative mood, distorted negative cognitions, and reckless behavior, which may align with some conceptualizations of cPTSD, have been added to the DSM-5 criteria (Friedman 2013).

ICD-11 has however proposed a new category termed "disorders specifically associated with stress," which would include a narrowly defined (six-symptom) PTSD diagnosis and a new cPTSD diagnosis, conditional on the presence of PTSD.

cPTSD has been proposed as a diagnosis for capturing the symptom clusters observed in survivors of chronic trauma that are outside the current definition of PTSD (Resick et al. 2012).

A study by Roth et al. suggested that sexually abused women, especially those who also experienced physical abuse, had a higher risk of developing cPTSD (Roth et al. 1997).

cPTSD symptoms manifest as alterations in numerous basic psychobiological processes associated with affect regulation (impulsivity, self-harm), attention and consciousness (dissociation), self-perception (shame, guilt), relationships with others (mistrust), somatic functioning (psychosomatic pain), and meaning in life (despair at future) (Ford 2015).

Studies suggest that cPTSD is distinguishable from personality disorders by its restricted symptom profile and its responsiveness to treatments that differ from those for personality disorders and PTSD.

While it is to be seen how often this diagnosis is made and accepted by clinicians, the fact that it is recognized and described will ensure that women who are often victims of multiple traumas are not labeled as personality disorders and are also able to access more trauma-based interventions.

The argument that cPTSD is an amalgam of PTSD and borderline personality disorder (BPD) has been due to reports of the relatively high comorbidity between PTSD and BPD (Pagura et al. 2010). BPD differs from cPTSD that it does not require a traumatic stressor for diagnosis and PTSD symptoms may or may not be present. Rather, BPD is characterized by fear of abandonment, shifting self-image or self-concept, shifting idealization and devaluation in relationships, and frequent impulsive and suicidal behaviors. Complex PTSD, as proposed in ICD-11, highlight chronic avoidance of relationships rather than sustained chaotic engagement. While emotion regulation difficulties are central to both cPTSD and BPD, their expression is quite different. In cPTSD they predominantly include emotional sensitivity, reactive anger, and poor coping responses (e.g., use of alcohol and substances).

Personality Disorders

Personality disorders differ in prevalence by gender. The most striking findings concern antisocial personality disorder, which is more common in men, and borderline personality disorder (BPD), which is more common in women.

DSM-IV-TR states that BPD is “diagnosed predominantly (about 75%) in females.” A 3:1 female to male gender ratio is quite pronounced for a mental disorder and, consequently, has led to debates and speculation about the possible cause and to some empirical research.

A majority of the literature on BPD focuses on its occurrence in women or does not specifically assess for gender differences in clinical presentations.

Some studies report that men with BPD have been more likely to be diagnosed with substance use disorders, passive-aggressive, narcissistic, paranoid, sadistic, and antisocial personality disorders (PDs). Additionally, women with BPD appear to be more likely to report histories of adult physical and sexual abuse and to meet diagnostic criteria for post-traumatic stress disorder (PTSD) and eating disorders. Women with BPD were more likely to have co-occurring diagnoses of PTSD and eating disorders, while men were more likely to have co-occurring diagnoses of substance use disorders, as well as schizotypal, narcissistic, and antisocial PDs. Additionally, proportionally more women than men meet the borderline diagnostic criterion for identity disturbance.

Zanarini et al. hypothesized that the gender differences found in BPD may be a function of impulsivity, in that men and women may differ in the specific type of "disorder of impulse" that they predominately display. For example, women may be more likely to use food (i.e., internalizing behaviors) and men alcohol or drugs and acting out against others (e.g., externalizing behaviors) in a self-destructive manner. Childhood abuse, in general, and childhood sexual abuse, in particular, have long been hypothesized etiological components of BPD, most notably in women (Zanarini et al. 1997). BPD is yet another condition where it is observed clinically that the threshold for pathologizing is lower for women than for men. There is also an overlap of the presentation with mood disorders and trauma-related disorders, which frequently results in overdiagnosis of BPD among women.

Gender and Classificatory Systems in Relation to BPD

The classificatory system should take a dimensional approach rather than categorical, with an opportunity to grade severity. With men, often being misdiagnosed due to difference in presentations, the classification of BPD should take into account the differential effects of gender expression, and a gender-specific approach in classificatory systems would be helpful. Women are often overrepresented in research studies in BPD; hence, more studies looking at presentation of men with BPD will be useful.

Eating Disorders

Eating disorders (EDs) are diagnosed more frequently in women than men, and have been typically constructed as a woman's disorder. ED presentations differ across gender, as men are more likely to report overeating, while women are more likely to present with loss of control while eating. Studies suggest that women have higher scores for ED behaviors such as drive for thinness, bulimia, and body dissatisfaction compared to men.

Men are also less likely to seek ED treatment services and are also less likely to be diagnosed with an ED if they do seek help for psychological difficulties. Men have reported difficulty in disclosing ED problems as the admission of being a male with an ED does not fit with the traditional societal perceptions of EDs as occurring only in women.

Men are reluctant to seek help; there exists a lack of awareness among clinicians and underdiagnosis of EDs in men.

Under-identification and underdiagnosis of EDs in men may also be due to use of physical measures (such as body weight and body mass index (BMI)) for assessment and weight as an important criterion for ED diagnosis. Men who typically lie on the elevated side because of body musculature are often missed.

Recognition and tailored treatments of EDs that are transformed by gendered perspectives, including those of the non-dominant and vulnerable groups (men and transgender), need more detailed consideration (Thapliyal et al. 2017).

Gender and Classificatory System in ED

ICD-11 and DSM-5 in their newer approach of classifying eating disorders have not only expanded to include feeding disorders of infancy and childhood but have changed the clinical criteria required for the diagnosis based on the available evidence.

Anorexia nervosa (AN) has been redefined, and terms such as “denial, refusal, and self-induced” – terms which lack evidence and also convey a paternalistic attitude – have been removed. ICD-11 criteria are based on clearly observable behaviors and cognitions. ICD-11 provides a definition of “a significantly low body weight” for adults (BMI <18.5 kg/m^2; WHO), while DSM-5 perceives “restriction of energy intake relative to requirements” as a core aspect of the disorder. The provision of thresholds is important in increasing the diagnostic reliability.

Both ICD-11 and DSM-5 have moved away from fear of weight gain and fat phobia being a necessary criterion for the diagnosis of AN, by including the phrase “engagement in persistent behavior that interferes with weight gain” as an alternative. There is evidence that non-Western and younger patients are less likely to express fear of gaining weight or fear of fatness, making the new criteria more culture neutral and improving the cross-cultural validity. ICD-11 now also avoids any reference to the symptoms of starvation and the associated endocrine disturbances; however, this may be considered inappropriate as symptoms of starvation separate females with AN from constitutionally underweight females. In light of attempts to define biological markers for mental disorders, the nonrecognition of endocrine alterations associated with anorexia nervosa including hypoleptinemia has been thought to represent a step backward.

Binge eating disorder has a separate category and definition in ICD-11, which is considered a positive move as this would avoid the overuse of the criteria “eating disorder unspecified.” In ICD-11 and DSM-5, ED-NOS was considered to be heterogeneous and unhelpful.

ICD-11 has included pica, rumination disorders, and a new criterion on avoidant-restrictive food intake disorder (ARFID) along with other eating disorders. The growing evidence on continuity between child, adolescent, and adult psychopathology supports this move. ARFID have a place for women with restricted eating patterns in pregnancy leading to problems in weight gain and nutritional deficiency.

Conclusions

An ideal classificatory system in psychiatry should adopt a gender-based approach, that is the diagnostic categories should be equally applicable to both genders, and if differences are present between men and women, the social and biological influences of sex/gender must be highlighted.

Research into this would give us better insights if gender differences in prevalence of psychiatric illness are true or artifactual.

A few suggestions on how a gender-based approach can be applied to the classificatory system have been summarized below:

(a) Gender-specific thresholds – using different clinical thresholds for men and women (e.g., somatoform disorders, depression).
(b) Gender-specific diagnosis – there has always been a debate if gender-specific diagnosis such as postpartum depression, mother-infant interaction disorders, premenstrual disorders, and perimenopausal disorders are valid entities, with symptomatology and course and etiology differing from other forms of other depression and anxiety disorders. While there is inadequate evidence for these conditions being separate entities, childbirth and gender have a pathoplastic influence and would require specific assessments, treatment approaches, and research into etiological factors, hence the need for a separate diagnosis or a specifier in the classificatory system.
(c) Gender-sensitive approach can be used when a specific situation has a pathoplastic effect (e.g., perimenopausal psychiatric disorders) (Riecher-Rössler 2010).

Finally, it is evident that inclusion of the influence of gender in classificatory systems will not only improve knowledge of mental illness and help research into etiological factors but also ensure delivery of gender-sensitive services and treatment.

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Gender and Brain Stimulation

22

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Contents

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9_35

Abstract

Neuromodulatory techniques are gaining increasing interest toward application in understanding the pathogenesis as well as therapeutics of several neuropsychiatric disorders. Several factors modulate the effect of these techniques on brain function. Given the significant influence of gender on brain structure and function, it is important to evaluate its potential role in brain stimulation. With this in focus, this chapter summarizes the basic principles of several neuromodulatory techniques as well as the biology of sex differences in the human brain. The potential mechanistic basis through which these biological factors might interact with brain stimulation techniques is reviewed. Contextually, the available literature to support the differential effect of gender on the effect of brain stimulation techniques is summarized.

Keywords

Gender · Brain stimulation · Sexual dimorphism · TMS · tDCS

Introduction

The neuronal system in the brain functions primarily as an electrical system mediated by neurochemicals. Activity of the brain can be modulated through chemical and physical avenues. With the relative stagnation in the advancement of pharmacotherapy, brain stimulation is emerging as an important neuromodulator in psychiatry. Though electroconvulsive therapy has been used for over a century, the advancement in technology has brought sophistication in electrical and magnetic stimulation techniques of brain stimulation. They were initially used in appreciating neuroscientific aspects of cognition, perception, and behavior. Having an ability to measure and modify the neuronal activity, they are used as an adjuvant in mapping the brain's activity. Therapeutic benefits of these novel techniques are envisaged after successful attempts in having longer-lasting changes in the activity of neural networks. Thus, brain stimulation is on the verge of becoming one of the mainstream tools for therapeutic and investigative approaches in psychiatry.

Brain stimulation refers to different physical techniques which alter the electrical activity in the brain. These include both invasive and noninvasive techniques using electrical, magnetic, and radio waves (Stimulation 2018). Occasionally, focally targeted pharmacological stimulation is also included in the broader definitions of brain stimulation. In this chapter, we will be considering only non-pharmacological techniques with focus on the noninvasive brain stimulation techniques (NIBS), as they are the most widely utilized techniques in mental healthcare settings.

Invasive techniques are those requiring breach in the integument or requiring implantation of devices inside the body. Invasive brain stimulation includes deep brain stimulation (DBS) and vagus nerve stimulation (VNS). NIBS techniques include electroconvulsive therapy (ECT), magnetic seizure therapy (MST), transcranial magnetic stimulation (TMS), and transcranial electrical stimulation (TES). As anesthesia is

Table 1 Types of brain stimulation techniques

Convulsive therapies	Focal invasive stimulation	Focal noninvasive stimulation
Electroconvulsive therapy	Deep brain stimulation	Transcranial magnetic stimulation
Magnetic seizure therapy	Vagus nerve stimulation	Transcranial electrical stimulation:
		Direct current stimulation
		Alternating current stimulation
		Oscillatory current stimulation
		Random noise stimulation
Focal electrically administered seizure therapy (FEAST)		

used in the modern procedures of ECT and MST, which are provided through intravenous route, some consider both of them as invasive modalities. But the stimulation technique per se does not invade nor disrupt the continuity of the skin.

Another way of classification of brain stimulation techniques is based on amount of brain region being stimulated. Uncontrolled stimulation of whole brain is achieved in convulsive therapies as in ECT and MST. Controlled focal stimulation is attempted in DBS, VNS, TMS, and TES (Lisanby 2004) (Table 1).

Convulsive Therapies

Electroconvulsive Therapy

ECT is one of the most effective and rapidly acting treatment modalities in psychiatry. It involves using electric current to induce seizures (convulsions) which will alleviate symptoms of mental ailments. Classically, electrodes are placed at the bitemporal region and alternating current is passed through the brain. To alleviate discomforting experiences related to ECTs, various modifications are practiced in the current therapeutics. A major modification is the usage of anesthesia and muscle relaxant before inducing seizures, to reduce the physical impact of seizures (American Psychiatric Association 2008).

Different placements of electrodes are utilized to reduce the cognitive disturbances. Electrodes can be placed on bi-frontal region or on one side of the brain called unilateral ECT in contrast to bilateral ECT. Sine wave of alternating current is modified to pulses of waves to reduce the total amount of electrical energy to pass through the brain. These pulses can be unidirectional or bidirectional. Depending on the width of each of the pulses used for stimulation, ECT is further typified into brief pulse (0.5–1.5 ms) and ultra-brief pulse (<0.5 ms) ECTs (Loo et al. 2012). Monitoring of electrical activity in the brain during ECT is possible and is utilized as electroencephalography (EEG)-monitored ECT. Thus, electrode position, intensity of stimulus, duration of stimulation, and individual waveform parameters (like shape, pulse width, amplitude, directionality, frequency) are inherent ECT parameters which influence its neurophysiological effects. ECT has an unmatched efficacy in severe depression with high suicidal risk and catatonia. It is also used in treatment resistant symptoms and severe aggression in the context of mania and schizophrenia.

Magnetic Seizure Therapy

Convulsive therapies started with chemical induction of seizures (camphor therapy) in severe psychiatric conditions, and later electric current was utilized to bring about seizures. As seizures were recognized to be an essential component for effectiveness of ECT, strong magnetic fields have been used in bringing about seizures. MST involves rapidly altering strong magnetic field to induce seizures (Cretaz et al. 2015). It is proposed to have lesser cognitive and other side effects in comparison to ECT because of substantially lesser impact on subcortical structures. As seizure is induced in both ECT and MST, they are generally given under anesthesia and muscle relaxant.

Focal Electrically Administered Seizure Therapy (FEAST)

FEAST is a novel modified convulsive therapy with aim to focalize the distribution of electrical and therapeutic effects. It stands on the boundary of convulsive and focal brain stimulations. It uses unidirectional current from a small anode (placed anteriorly, above right eye brows) and wider cathode (placed posteriorly over right premotor area) (Nahas et al. 2013). This is hypothesized to concentrate the electric field over frontal pole and subcallosal cingulate areas which is necessary for therapeutic effect in depression and avoid amnesia of ECT by reducing inadvertent stimulation of the temporal areas (Chahine et al. 2014; Nahas et al. 2013).

Focal Brain Stimulation

ECT and MST though have been effective as therapeutic tools have the inherent deficiency of being non-specific with broad areas of the brain being stimulated simultaneously. With advancement in technology, stimulation is getting progressively focal so as to target the specific brain regions/behavior. Techniques using magnetism (TMS) as well as electricity (DBS, VNS, TES) are emerging in refined formats. In the past few decades, a rapid growth is seen in lesser invasive brain stimulation modalities. This is providing immense opportunity in selective modulation of cognitive and perceptual processes.

Invasive Brain Stimulation

Deep Brain Stimulation (DBS)

DBS has emerged as a safer reversible alternative to ablative surgery. Electrodes are implanted within the brain to directly stimulate the brain region (Lisanby 2004). Integrating the modern stereotactic techniques like imaging, physiological mapping, and computerized neuronavigation, electrodes of just more than a millimeter in diameter can be precisely implanted inside the brain. These electrodes are connected to pulse generators inserted in the chest. The stimulators are controlled through a telemetrically synchronized portable external devise.

Clinically high frequency (100 Hz or greater) is used which inhibits transmission across the targeted neuronal region to bring about the effects (Yu and Neimat 2008). The advantage of this technique lies in its potential to directly target deeper brain regions which remain difficult to access through NIBS techniques. Invasiveness comes with its own cost of seizure, hemorrhage, tissue damage, and infection as a possible consequence of electrode insertion. Untoward changes in motor, perceptual, mood, anxiety, memory, and cognition have been reported as another major adverse effect of DBS. Nevertheless, most of the effects are reversible. The effects are adjustable by changing/stopping the stimulation doses, thus making DBS an option superior to ablative surgical procedures (Yu and Neimat 2008). Given the invasiveness and ethical issues, DBS has found its application in limited psychiatric conditions like obsessive-compulsive disorder, Tourrete's syndrome, eating disorders, and depression which are severe and intractable (Lisanby 2004; Figee et al. 2017).

Vagus Nerve Stimulation (VNS)

Vagus nerve is stimulated at the neck using electrode which uses electric current with an aim at modifying the brain stem neural activity (Lisanby 2004). The VNS technique is restricted to stimulating a single cranial nerve where other techniques can be placed variably based on targeted brain regions. Brain stem nuclei are a major source of monoaminergic neurotransmission and have modulatory effects on various cortical and subcortical structures which are implicated in neuropsychiatric conditions. Through VNS, the widespread anatomical projections of brain stem have proved beneficial in alleviating resistant depression and intractable epilepsy (Muller et al. 2018). Similar to DBS, VNS requires pulse generators to be implanted under the skin and connected to the electrodes. Unlike other brain stimulation techniques given the lesser sophistication required, VNS is considered less invasive than DBS but more than ECT/MST.

Noninvasive Brain Stimulation (NIBS)

The risks of adverse effects with convulsive and invasive techniques are substantial. Hence their utility is primarily restricted for therapeutic indications. Novel noninvasive techniques of brain stimulation are much less painful and relatively free of adverse effects. They have an impact on a range of which can be controlled and restricted. Thus, NIBS has become an important tool not just in treatment but also in psychiatric research.

Transcranial Magnetic Stimulation (TMS)

TMS is one such focal stimulation technique which is a precursor of MST. A change in magnetic field through electromagnetic induction causes electrical current to flow through the neurons in the targeted superficial brain region (Miniussi et al. 2013). Rapidly changing magnetic fields when provided repeatedly using pulses generated from portable electromagnetic coils applied over the scalp can have prolonged effects. This technique is called repetitive transcranial magnetic stimulation (rTMS) (Mishra et al. 2011).

Conventionally, rTMS protocol was divided into high-frequency and low-frequency stimulation. Pulses given at higher than 1 Hz frequency (high-frequency rTMS) are known to facilitate whereas those less than 1 Hz (low-frequency rTMS) are known to inhibit neuronal activity (Mishra et al. 2011). With an aim to gain more efficient and consistent aftereffects with fewer stimuli or lower stimulus intensity, newer protocols have been applied. Paired-pulse rTMS (ppTMS), theta burst stimulation (TBS), and quadri-pulse rTMS (QPS) are a few of the important patterned rTMS protocols (Miniussi et al. 2013).

Subthreshold stimulus can be paired with suprathreshold stimuli with varying inter-stimuli interval. This technique is called *paired-pulse TMS (ppTMS)*. When inter-stimuli interval is kept at 1–4 ms, intracortical inhibition (ICI) is elicited, whereas an interval of 5–30 ms elicits intracortical facilitation (ICF). Theta burst stimulation (TBS) is a novel paradigm consisting of bursts of three pulses at 50 Hz frequency that are repeated at 5 Hz. It resembles normal patterns of neural firing occurring in the hippocampus of animals during long-term potentiation. TBS given without any interruption for few seconds, called *continuous TBS (cTBS)* causes suppression of underlying brain region. When given intermittently (*iTBS: intermittent TBS*) (e.g., 2 s TBS train every 10 s for 10 min), it leads to enhancement of cortical excitability. Latest pattern in evolution is *quadri-pulse stimulation (QPS)*. Mostly sinusoidal biphasic pulses are used in rTMS. QPS protocols utilize up to four single monophasic pulses with various combinations of inter-stimulus intervals and inter-burst intervals. This has been noted to have a stronger and longer-lasting effect on motor cortical excitability (Miniussi et al. 2013).

Transcranial Electrical Stimulation (TES)

The novel electrical stimulation techniques use weak intensity current for stimulating brain regions across the scalp. Transcranial direct current stimulation (tDCS), transcranial alternating current stimulation (tACS), transcranial random noise stimulation (tRNS), transcranial pulsed current stimulation (tPCS), and transcranial oscillatory direct current stimulation (toDCS) are different types of transcranial weak intensity electrical stimulations (Guleyupoglu et al. 2013) based on type of the electric waveforms.

tDCS is a noninvasive brain stimulation technique where direct current in the range of 0.5–4 mA is passed through the scalp by means of electrodes ranging in size, most commonly, from 25 to 35 cm^2 over designated areas of interest in an attempt to modulate the activity of specific brain region(s) (Agarwal et al. 2013). tDCS uses unidirectional direct current where an entry electrode of positive charge (anode) and an exit electrode of negative charge (cathode) will be placed on the scalp.

In contrast, bidirectional biphasic current of tACS periodically fluctuates/alternates from positive to negative charges across the two electrodes. tACS is noninvasive and a safe brain stimulation technique that modulates neural oscillations in a frequency-specific fashion by the application of low-intensity (weak) sinusoidal currents at the scalp using a battery-operated stimulator system (Antal and Paulus 2013). tACS targets specific brain oscillations for bringing about the desired changes.

tPCS uses pulses of currents usually of rectangular wave patterns of current (which may be uni- or bidirectional). tRNS is similar to tACS where frequency of alternating current swiftly and randomly fluctuates in a given frequency range to provide a noisy signal. When tACS is given with DC offset, the baseline/mean of AC current can be set at a positive or negative charge. This mode of stimulation is also termed as toDCS (Prehn-Kristensen et al. 2014) (Fig. 1).

Given the excellent tolerability of focal NIBS, both TMS and TES are evaluated in wide array of therapeutic indications in psychiatry. rTMS and tDCS are widely used in psychiatric conditions, whereas tRNS and tACS are showing some promising leads in the clinical population. They are used in schizophrenia, depressive, anxiety, obsessive compulsive, eating, substance related, neurodevelopmental and neurocognitive disorders (Miniussi et al. 2013).

Using various protocols of TMS and TES, it is possible to measure the cortical and subcortical neuronal functions. The minimum stimulus intensity required to elicit motor evoked potential in targeted muscle, called motor threshold, is one such

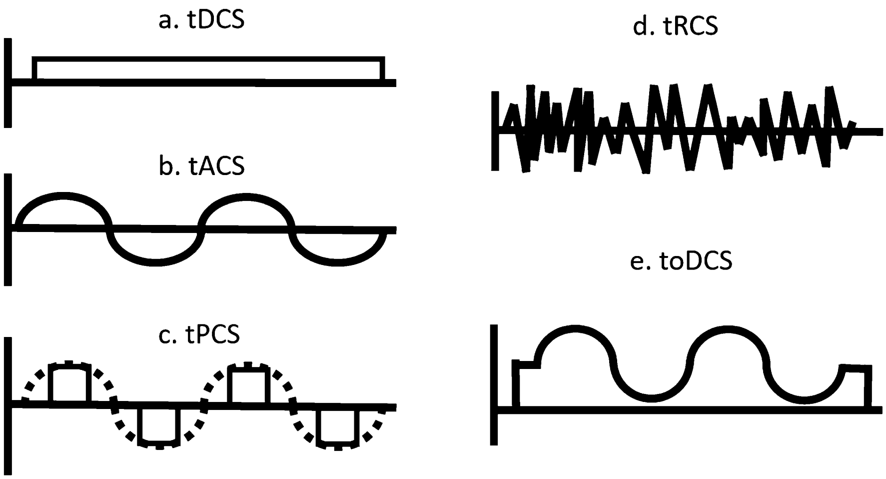

Fig. 1 Types of transcranial electrical stimulation. *tDCS* (transcranial direct current stimulation) delivers a static current; *tACS* (transcranial alternating current stimulation) delivers current with sinusoidal wave form; *tPCS* (transcranial pulsed currents stimulation) provides bursts of current in one or either polarities; *tRNS* (transcranial random noise stimulation) has randomly fluctuating alternating current; *tOCS* (transcranial oscillatory current stimulation) is an alternating current delivery system with a direct current offset. (Adapted from Sreeraj et al. 2019)

parameter which can provide information on the excitability status of motor neurons. Focal NIBS techniques can yield a causal link between the underlying brain region and its function, unlike techniques like fMRI and EEG which can yield only correlational association. These novel NIBS methods are providing the platform for mapping brain regions with specific neurocognitive/behavioral/neurophysiological function, thereby eliciting mechanism underlying complex neurobehavioral disorders (Filmer et al. 2014).

Conscious brain functions can be performed during TMS and TES. A gain or loss of function during/after the stimulation provides further information to advance our understanding of the neural processes involved in cognitive task. They can be used to directly modulate the neural oscillations across neural networks. By stimulating the brain to adapt to a given frequency and phase of oscillation, a causal role of neural oscillation with behavior can be determined. Focal NIBS in combination with other neuro-investigational tools like neuroimaging and neuro-electrophysiology assists in examining functional neural networks (Filmer et al. 2014).

Mechanism of Brain Stimulation

Brain stimulation exerts their action primarily by influencing the electrical activity of the neuronal system. Modulating the activity of the excitatory glutamatergic and inhibitory GABA-ergic neurons is thought to be the primary mechanism of immediate effects of all brain stimulation techniques. Convulsive therapies induce larger action potentials in the neuronal system during stimulation inducing generalized synchronized activity across the brain resulting in motoric convulsions. TMS is found to induce or disrupt the action potential generation, which is more focal and usually much less than the seizure threshold. So the activation restricts to network connections of specific neurons (Miniussi et al. 2013). In contrast TES, in particular tDCS, has been found to alter the threshold for action potential by changing the resting membrane potential of underlying neurons (Agarwal et al. 2013). Brain stimulation methods may have differential effects on different types of neurons in the underlying brain regions. Activity of the neuroendocrinal system (hypothalamic-pituitary axis) and molecular messenger systems in the neurons is influenced by brain stimulation (McCall et al. 2014) which might be the mediators of behavioral changes. These effects are generally secondary to changes in the activity of the neurotransmitter system like serotonin, dopamine, and noradrenaline in addition to glutamate and GABA neurotransmitters with their respective neuronal circuits. Thus, the effects are site specific but not site limited even in focal stimulation.

Single session of either convulsive or other stimulation is rarely found to have any therapeutic benefits. For obtaining a therapeutic benefit, longer-lasting physical change in the brain is required rather than just the reverberating activated circuits. These lasting changes in the physical structure and functioning of the CNS is called neuroplasticity. Plasticity thus not only refers to the increase in the numerical count of the smallest units of CNS – the neurons by neurogenesis – but also to the changes in connectivity, morphology, and biochemical substrates. Repeated stimulations bring about long-term potentiation (LTP)- or long-term depression (LTD)-like effects. The plasticity-modulating chemicals like brain-derived neurotropic factors are released during stimulation and could play an important role in plastic changes and thereby produce prolonged aftereffects of stimulation. Thus, neuroplasticity might hold the central dogma of therapeutic effect of brain stimulation therapies.

Factors Influencing the Effect of Brain Stimulation

Variability in responses has been noted across subjects in each of the brain stimulation techniques. Such variations in neurophysiological and behavioral responses to brain stimulation are apparent even in neurologically normal individuals. Multiple individual-related factors and stimulation-related factors need to be considered when planning a stimulation. Stimulation-related mechanistic factors are much predictable and controllable compared to huge and often difficult to recognize individual-related factors.

In general, neurophysiological effects of electrical stimulations depend on different physical parameters inherent to the stimulation technique as in Table 2 (Peterchev et al. 2010; Rubens and Zanto 2012). The magnitude and duration of effects of brain stimulation are dependent on individual factors like age, sex, pharmacological agents, and genotypes. Neuroanatomical, neurophysiological, and behavioral variations could be the cofactors which mediate the variable responsiveness to brain stimulation (Ridding and Ziemann 2010).

Sex Differences in Brain Stimulation

Less has been explored regarding gender as an important variable influencing the brain stimulation technique. Most of the studies have looked at gender as a possible confounder. There are many biological, psychopathological, and social reasons for evaluating gender in the context of brain stimulation. Structural and functional differences in the brain and differences in development, temperament, and behavior across the sexes will have a bearing on the effect of brain stimulation. Understanding

Table 2 Stimulation parameters affecting response variability

Transcranial magnetic stimulation	Transcranial electrical current stimulation
Coil type	Electric waveform
Coil orientation	Type of electrodes
Position over scalp	Size of electrodes
Strength of magnetic field	Position of electrodes
Pulse width	Intensity of current
Direction	Duration of stimulation
Frequency of repetition	Polarity of current (in tDCS, tOCS, tPS)
Duration	Frequency and phase of current (in tACS, tRNS)
Succession	Offset (in tOCS)

the sex differences in neuroscience would pave the way to appreciate the role of sex and gender in the neuromodulation using the brain stimulation.

There is a lacuna in the literature in general regarding the neurobiology of sex differences. Some of it is due to the preconceived notion that sex differences in cognition are very small. But those that are present are also mostly low-powered studies with lower sample size (Pletzer 2015). Researchers have been having reservations in further exploring these areas out of need of political correctness (Pletzer 2015). Another important factor in poorer literature is methodological in nature, because of considering females as categorically distinct from males. The brain is quite sensitive for the dynamic alterations in the females across menstrual cycles and over the lifetime with various hormonal statuses as in during menarche, pregnancy, perimenopausal age, and postmenopausal. During routine studies though gender has been evaluated as a confounder, these hormonal states are usually neglected (Pletzer 2015).

It is imperative to understand the sex differences in brain structure and function as it significantly impacts nearly 50% of the general population. Many psychiatric conditions are known to have gender bias in their manifestation. For example, males are more prone for developing autism, schizophrenia has early onset in males, and depression and anxiety disorders are more prevalent in females. Thus, the pathogenesis and therapeutic mechanisms might also vary across sex. Rather than looking at this topic as a matter of inequality, it should be viewed as differences, neither better nor worse. Even within females, the neurobiological changes would be so rapid over menstrual cycles that it would have a bearing on the therapeutic response (Pletzer 2015).

Brain Structural Differences

A large meta-analysis showed average brain volumes including total intracranial and total brain volumes, both gray and white matter, and both cerebrum and cerebellum and cerebrospinal fluid to be larger in males. Bilateral limbic areas and left posterior cingulate gyrus volumes were larger in males with higher densities in the left side of the limbic system. On the other hand, females had larger volumes in the areas of the right hemisphere related to language in addition to several limbic structures such as the right insular cortex and anterior cingulate gyrus. Volume changes happen over the life span, but the higher overall brain volume in males was consistently noted across different age groups (Ruigrok et al. 2014).

Apart from brain volume, structural asymmetry and laterality has profound implications in behavioral neurophysiology. Asymmetry exists in the normal functional brain, and a loss of laterality leads to abnormal organization and dysfunction, as noted in disorders of neurodevelopment as well as neurodegeneration. Asymmetries where right regions are more than left regions in structural volume and function are found to be prominent in males in comparison to females. For example, relatively larger right hippocampus is more prominent in males which are detectable even at infancy. Studies have suggested X-chromosome gene dosage correlating with cerebellar asymmetries, whereas dosage of sex hormones like testosterone has been implicated in asymmetries in planum temporale and part of the motor and occipital cortices (Savic 2014).

The significant differences need not mean a categorical difference in the brain structure. There are more similarities than dissimilarities, and all the brain regions show a mixture of male-female patterns when patterned individually. Hence, few argue that the brain is not a sexually dimorphic rather a mosaic organ (Joel et al. 2015).

Functional Differences in the Brain

Early research in cognitive psychology showed a gender difference in cognitive abilities. Males were found to have higher mathematical and spatial abilities, whereas females tend to have high verbal skills. But over the past decades, meta-analytic approaches have refuted this view and have been showing more similarities than dissimilarities in cognitive abilities across gender (Hyde 2016). Sex differences in cognition were later shown to vary across countries correlating with economic prosperity and gender equality in the society reducing the gaps in cognitive performances. Except for mental rotation tasks, which are usually absent in formal training, other cognitive differences were not noted to be significantly different across gender, at least in societies with equal educational opportunities. The formal education systems were found to have an impact on the performances (Miller and Halpern 2014). The cognitive differences could hence be influenced by the biological and environmental factors, and neuroplasticity might play a leading role in achieving the maximum cognitive potential of an individual. Nevertheless, dissimilarities do exist in at least some neurocognitive functions evaluated in meta-analysis that could potentially relate to gender bias in psychopathology. Males were found to be more interested in things in comparison to females who had more preference on people (Su et al. 2009). This could at least partially explain the restricted gender diversity in autism disorders.

It is to be noted that the comparative performance might not be reflective of neurophysiological activity. For example, working memory performance was similar across gender, but the brain networks recruited for the task were different. A meta-analysis showed that females had more activation of limbic areas like amygdala and hippocampus during working memory tasks, whereas males had more activation of spatial-related networks involving parietal regions (Hill et al. 2014). The Brain Connectome project has also revealed higher white matter to gray matter ratio in females with much larger connectivity across brain regions in comparison to males (Szalkai et al. 2015). Overall at the brain level, it has been proposed that ovarian hormones facilitate both cortico-cortical and subcortico-cortical functional connectivities, whereas testosterone seems to decrease subcortico-cortical functional connectivity, but increases functional connectivity between subcortical brain areas (Barth et al. 2015).

Developmental Differences in the Brain

As the gender similarity hypothesis is getting more evidence in recent days (Zell et al. 2015), the following questions arise: Does lack of substantial difference in the brain structure and function mean absence of any role of gender on neurobiology? Does socially assigned gender and gender role have an overwhelming impact on cognitive ability and not the sexual neurobiology? Infantile and very early developmental stages are least affected by social and environmental stimuli. The difference in temperamental and neurophysiological findings during these periods would assist in comprehending the inherent biological differences in the brain across sexes.

A meta-analysis on gender differences in early temperament revealed large effortful control in females and lower levels of activity and high-intensity pleasure. This is consistent with boys' preference over rougher play behavior and greater incidence of externalizing disorders (Else-Quest et al. 2006). Prenatal testosterone dose exposure influences neonatal cognitive abilities and behavioral patterns (Auyeung et al. 2012). Early works transpired role of prenatal androgens influencing organizational and activational aspects of brain development (Phoenix et al. 1959). Some early works suggest glial cell maturation to happen faster in females. Thus females are hypothesized to develop a shield against adversities at a much early age letting males prone for development of numerous neuropsychiatric conditions (Hanamsagar and Bilbo 2016). Currently a complex understanding of interplay of sex chromosomes, hormones, and their influence on critical developmental time windows is emerging demonstrating the importance of biological sex on the brain development and on risk of psychiatric disorders (McCarthy 2016).

Influence of Menstrual Cycles and Sex Hormones on Neurobiology

A major lacuna in the methodology of many of the studies evaluating gender dimorphism is considering the influence of sex as a static element. The menstrual cycle through varying estrogen and progesterone levels in the blood influences the brain from structure to function. A significant interaction is well known between the stress hormones and sex hormones in hypothalamic-pituitary-adrenal axis system. The behavioral patterns like reward dependence and decision-making, cognitive functions like emotional processing, the responsiveness of brain regions like amygdala reactivity and intrinsic functional connectivity like contextual memory regulation circuits are known to be greatly influenced by fluctuating sex hormones (Pletzer 2015).

Converging evidences yield support to the hypothesis that sex differences in depression begin in fetal development and emerge in puberty and pregnancy and menopausal transitions catalyze the process (Goldstein et al. 2014). Interestingly, many of the sex differences in brain structure, functions, and cognitive performances would recede in females who are using hormonal contraceptives containing synthetic steroids (Pletzer and Kerschbaum 2014). This underscores the importance of considering life span approach as well as neurohormonal states (both natural and induced) while evaluating the sex differences in neuroscience of psychiatric conditions.

Neuroplasticity and Gender

It is evident that gender differences in structure and function of brain are malleable. Sex chromosomes, sex hormones, and environment interact to influence the manifestation. The final common pathway for gender impact is through the neurosynaptic plasticity. Effects of sex hormones can be noted at different structural levels like neuritic growth, synaptogenesis, dendritic branching, and myelination (Haraguchi et al. 2012). It can be recalled that mechanism of brain stimulation techniques heavily relies on the plasticity of brain; hence, sex could be a major determinant of the variations in the response (Ridding and Ziemann 2010).

The brain has receptors for androgens and is highly expressed in areas involving emotion and cognition, i.e., amygdala, hypothalamus, and hippocampus. They include both genomic cytosolic intracellular receptors, activator of the genome for transcription and protein synthesis, and non-genomic membrane-associated receptors. Genomic actions require a longer time from minutes to hours to be effective as they are limited by the rate of protein biosynthesis, whereas non-genomic modulation is faster requiring milliseconds to seconds. But generally genomic and non-genomic receptors are coupled and may remain indistinguishable. Progesterone and estrogen influence activity of neurons with NMDA receptor, GABA-A receptors, and dopamine receptors for rapid non-genomic action. All three of them play a major role in neuronal plasticity (Vasudevan and Pfaff 2008). Estrogen specifically increases serotonin levels and reduces the reuptake by presynaptic neuronal terminal. This facilitates prolonged effects of serotoninergic neurons (Barth et al. 2015).

Sex hormones act as neuroregulatory, neurotropic, and neuroprotective factors in physiological and pathological conditions of the brain. Individual sex hormones though work interactively and have differential exhibition of facilitative, excitatory, suppressive, and inhibitory effects on different neurotransmission. For example, treatment with both estrogen and progesterone acutely increases synapse density and spine formation in hippocampal structures. However, this effect of progesterone seems to disappear after chronic treatment. Furthermore, progesterone down-regulates estrogen-induced synapses on adding to chronically estrogen-exposed tissues. Thus, effect of sex hormones is complex with duration and combination being essential for the neuroplastic effect (Barth et al. 2015).

Brain Stimulation Techniques: Implications of Sexual Dimorphism

Brain stimulation techniques modulate the excitability property of neurons to bring about the effect. Estrogen is known to enhance and progesterone is known to reduce

Table 3 Gender-related factors to be considered during brain stimulation

Structural differences in brain on positioning of the coils/electrodes
Functional differences in brain can lead to differential effect
Effect of sex chromosomes and hormones on cortical excitability and neuroplasticity
Variations in the thickness of bone affect the electromagnetic energy achieved
Phase of menstrual period during the brain stimulation may impact the efficacy
Gender stereotypes in clinical manifestations and decision-making

the excitability and seizure propensity from the epilepsy literature. But there is only a handful of literature exploring the role of gender in brain stimulation techniques. Most of the studies have treated gender as a possible confounder but have not systematically evaluated them in detail (Table 3).

Paired-pulse TMS was used to test the cortical excitability at different stages of menstrual cycle in two studies. TMS was applied during early follicular (low estrogen, low progesterone), late follicular (high estrogen, low progesterone), and luteal phases (high estrogen, high progesterone) by evaluating the ICI. They reaffirmed the effects of estrogen and progesterone on cortical excitability (Smith et al. 1999, 2002). A recent study could replicate these findings and found it to have association with manual dexterity (Zoghi et al. 2015). Another experiment on animals showed testosterone having higher excitability potential and male cortices being more excitable than females (Smith et al. 2002).

A different protocol was used with successive 5 Hz trains of rTMS monitoring MEPs. In this experiment TMS stimulation was conducted on Day 1 and 14 of menstrual cycle in females with males as controls. A natural progressive increase in MEP was noted in males on both days but only on day 14 in females. It failed to progress on low-estrogenic period (Day 1) in females. This suggests estrogen to be essential in reinforcing excitatory mechanisms in the motor cortex. This effect of estrogen is probably mediated through synaptic potentiation by their action on voltage-gated sodium channels. In males testosterone and its metabolites like estradiol might take care of these effects with least fluctuations across time (Inghilleri et al. 2004). Thus, responsiveness to TMS seems to be equal in males and females, when stimulation is done during late follicular stages of the menstrual cycle. To minimize the interindividual variability, it is recommended to apply focal brain stimulation to female participants during the late follicular phase of the menstrual cycle (Pellegrini et al. 2018).

Few studies with tDCS showed gender-specific effects. One tDCS study on gender difference in neuroplasticity was conducted by placing target electrode on occipital lobe and a reference over central area. A facilitatory effect was noted immediately after and 10 min post-stimulation over the targeted cortical network. But males had an inhibitory response that did not last at 10 min post-stimulation evaluation (Chaieb et al. 2008). The study suggested presence of gender differences within the visual cortex. Similarly females, but not males, had an improvement with anodal stimulation of dorsomedial prefrontal cortex in a theory of mind activity (Adenzato et al. 2017; Martin et al. 2017). On a more objective note, the effect of anodal tDCS on dorsolateral prefrontal cortex in TMS-evoked potential was much higher in males than in females in high estrogen state but not low estrogen state (Lee et al. 2018). Gonadal hormones may influence short-term neuroplasticity resulting in gender variability in response.

Prefrontal tDCS was found to reduce utilitarian response on cathodal stimulation and increased utilitarian response with anodal stimulation only in females but not in males (Fumagalli et al. 2010). A study by Kuo et al. reported sex differences in the primary motor cortex after tDCS. Female subjects showed prolonged aftereffects of cathodal stimulation compared to males (Kuo et al. 2006). This reversal of excitability in motor cortex in contrast to the visual and frontal cortices suggests possibility of site-specific effects.

Similarly, a lateralized gender effect was noted in working memory performance enhancement with tDCS. Females had the benefit with right dorsolateral prefrontal cortex stimulation, whereas left-sided stimulation benefitted males the most in the performance of high-loading working memory tasks (Meiron and Lavidor 2013). The neuronal organization is known to vary across different brain regions in the superficial cortex, and the role of gender in these variations needs to be considered. Also, the structural representation of perception, cognition, or motivation may not be equally represented in both genders. The neural organization plays a major role in determining the effect on the behavior especially in focal brain stimulation techniques.

In TES, the current must pass through the scalp, and the peak current reaching the targeted brain region may vary. The resistance offered to the electric current to reach the brain depends on the intervening tissues in the scalp. It was shown through computational modelling that females had significantly less current at the parietal region in comparison to males; thus they would require higher intensity of stimulation or modification in electrodes to obtain a comparable stimulus. This was attributed to presence of more cancellous bones in parietal region in males but dense bones in females (Russell et al. 2014).

For NIBS, locating the brain regions is generally done using scalp-based anatomical landmarks. As structural deviations exist in the individuals, the identified area using anatomical landmarks over the scalp might be deviant from the targeted brain region. Gender is now recognized to be an important factor for this deviation (Mylius et al. 2013). Thus, while considering a protocol for NIBS, structural and functional differences among the sexes must be considered. It can be concluded from the above findings that cross-sectional hormonal status is important in cortical excitability paradigms, but the life span approach with gender-specific effects might be apparent in plasticity effects.

These findings support the notion that the magnitude and duration of effects of brain stimulation might depend on the sex, with females responding better than males (Pellegrini et al. 2018). However, the nature of the effects would be site and stimulation specific. Premenopausal women had better response and maintaining longer remission from depression after rTMS in comparison to males and postmenopausal females (Malik et al. 2016). Gender differences have not been found to be a significant predictor in therapeutic tDCS (D'Urso et al. 2017). Nevertheless, systematic evaluations are lacking (Malik et al. 2016). Rather than just the gender difference, the hormonal status would be a major factor which needs to be carefully evaluated (Pellegrini et al. 2018).

Gender differences in response rates or effects have not been much of a concern in convulsive brain stimulations (Manohar et al. 2017) and deep brain stimulation (Chandran et al. 2014). As focality is not a major issue and stimulus is provided at suprathreshold levels in ECT, effectiveness has almost been similar if other disease and individual-specific factors were controlled for (Bolu et al. 2015; Leiknes et al. 2012) (Manohar et al. 2017). But side effects like retrograde amnesia (Sackeim et al. 2007) would be an issue probably because of use of suprathreshold levels of stimuli used in females (Sackeim et al. 1987) without considering the dynamic change in cortical excitability. Rarely gender-specific adverse effects like amenorrhea are observed, a transient phenomenon with ECT, probably due to hyperprolactinemia during seizures (Sienaert and Geeraerts 2013).

Brain stimulation techniques have been found to be safe in physiologically special clinical situations like childhood, old age, and pregnancy. Given that there is less direct impact on other organ systems of the body, minimal pharmacokinetic interactions and rapidity of therapeutic change ECT have been recommended as treatment preferable to pharmacotherapy in elderly as well as pregnancy (Geduldig and Kellner 2016; Pompili et al. 2014). NIBS including TMS and TES with an advantage over ECT by being noninvasive and without even having the risks posed by anesthesia has been considered as a good alternative therapeutic modality (Sreeraj et al. 2016; Shenoy et al. 2015; Vigod et al. 2014; Kurzeck et al. 2018).

An attempt was made to evaluate therapeutic role of tDCS on the postmenopausal vasomotor symptoms. A trend toward reduction in severity of hot flashes by anodal stimulation of motor cortex was noted (Bianchi et al. 2017). Anecdotal reports suggest pelvic pain related to primary dysmenorrhea and endometriosis getting ameliorated by stimulation of motor cortex with TMS and anodal tDCS (Pinot-Monange et al. 2019; Rostami et al. 2015). This opens a window of opportunities in its application on dysmenorrhea- and menstruation-related conditions.

One other interesting area is attitude and preference toward brain stimulation procedures. It has been noted that women have received ECT more than two to three times compared to men worldwide (Bloch et al. 2005). This may be because depression is the commonest indication in the western countries and female have high preponderance for depression (Bloch et al. 2005). But it was also noted that females were referred to ECT earlier than males and had higher response rate in this study. The influence of culture, social norms, law, and ethics of NIBS are some of the relevant factors that could impact the gender difference in practice of ECT.

Conclusion

Gender is an important but neglected factor in brain stimulation. Though limited literature suggests possible impact of gender on the effects of brain stimulation, structural, functional, and developmental dissimilarities are present across genders and must be considered while planning and analyzing a protocol. Evaluating gender as a dimorphic variable would be insufficient to appreciate the impact. Rather evaluation of stage of menstrual cycle and stage of reproductive life also need to be noted.

Cross-References

- ► Menopause and Mental Health
- ► Severe Mental Illness and Reproductive Health
- ► Psychosis and Physical Comorbidity

Acknowledgments This work is supported by the Department of Science and Technology (Government of India) Research Grant to GV (DST/SJF/LSA-02/2014-5).

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P. S. Chandra et al. (eds.), *Mental Health and Illness of Women*, Mental Health and Illness Worldwide, https://doi.org/10.1007/978-981-10-2369-9