

# Chapter 8

## The Consequences of Violence on the Mental Health of the Elderly

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### Introduction

The elderly are not immune to violence in old age, in addition to the potential burden of exposure to violence earlier in the course of life. Data, however, on the rate of exposure of the elderly to violence in late age are scarce.

Lifetime exposure to violence among older women is lower than in younger cohorts; however, it is highly prevalent. A nationally representative study from Australia found that 14.5 % of woman over the age of 65 had a lifetime exposure of rape, sexual abuse, interpersonal violence, or stalking, compared to 22.3–35.8 % among those age 16–64 (Rees et al. 2011). A number of studies that have examined interpersonal violence against older women in the USA found rates ranging from 6.0 to 59.0 % over the lifetime, from 6.0 to 18.0 % since turning 50, and from 0.8 to 11.0 % in the past year (Cook et al. 2011).

A study of 5 states in the USA examined the rate of childhood adverse experience across age groups (CDC 2010). Among those over the age of 55, a history of verbal abuse was reported by 13.5 %, physical abuse by 9.6 %, and sexual abuse by 9.3 % of the population. For the most part, these rates were lower than

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those for other age groups. In addition, 9.4 % of the older population reported witnessing domestic abuse in childhood. Among the older population, 43.3 % reported at least 1 adverse event in childhood, with 20.4 % reporting more than 1 adverse event.

Police reporting of violence is known to be fairly low, although usually higher for older adults than for those who are younger. In the USA, the FBI's National Incident-Based Reporting System (NIBRS) found that those over the age of 60 in the state of Michigan had the lowest rate of violent victimization across all age groups during the years 2005–2009, 204.5 per 100,000 compared to 1640.7 per 100,000 across all age groups (Smith 2012). Males had a higher rate of victimization, 247.7 per 100,000, than females, 172.9 per 100,000.

The fear of crime among the elder is much higher than its prevalence. In Canada, older people are at far less risk of victimization than their own fear of crime would suggest (Hayman 2011). A study in Sweden found that two-fifths of the women and one-fifth of the men reported feeling so unsafe outside their homes that they sometimes refrained from going outside on their own (Olofsson et al. 2012). Reported violence occurred more commonly among women in the home and more frequently in public places among men.

## Impact of Early Life Violence

Exposure to trauma at an earlier age can lead to detrimental health consequences later in life. Trauma at an early age, evaluated clinically more than 50 years later, may increase the rate of cardiac disease, hypertension and triglyceride levels among older persons (Kang et al. 2006). Lifetime exposure to traumatic events has been associated with increased vascular disease as well (Chaudieu et al. 2011). Researchers have suggested that the number and not necessarily the severity of lifetime traumas may be associated with chronic medical conditions (Sledjeski et al. 2008), consistent with the construct of allostatic load (McEwen and Seeman 1999). Elders who have been exposed to trauma not only may have more chronic medical conditions, but also may use more non-psychotropic medications, and are more likely to report poorer self-rated health (Petkus et al. 2009). Individuals with a history of trauma should be monitored for vascular and other physical diseases as they age. In addition, not only do such diseases increase overall mortality, they also are risk factors for Alzheimer's disease.

## Child Abuse

In contrast to data in childhood, adolescence and adulthood, there is paucity of data on the late life effects of trauma that has occurred at an earlier age, including a history of child abuse or domestic violence. The majority of studies that have examined posttraumatic stress disorder (PTSD) and late life effects of earlier trauma among the

elderly have looked at Holocaust survivors and World War II veterans, but there has been limited research on the effects of child abuse and domestic abuse on older individuals. Regardless of the specific nature of the trauma, there is evidence that stress occurring earlier in the lifecycle has more detrimental effects on IQ and memory than stress that has occurred at a later age (Golier et al. 2006; Schuitevoerder et al. 2013). Studies have demonstrated differences in laterality of hippocampal volume depletion depending on whether or not an individual had experienced PTSD from early life trauma, child abuse, as opposed to later life trauma, such as combat in Vietnam (Bremner 2002). Other evidence of the long lasting physiologic effects of earlier trauma is the higher degree of atrophy in the hippocampi in survivors of child abuse, as well as other traumatic events (Bremner and Narayan 1998). In addition, research suggests that trauma promotes neurochemical changes in the hypothalamic-pituitary-adrenal axis as well as glucocorticoid sensitivity that can persist throughout the life span into old age. Given the increase in hippocampal atrophy among survivors of trauma in young cohorts, it has been proposed that PTSD may be associated with accelerated aging (Golier et al. 2002; Lapp et al. 2011).

Some researchers believe that the age at which trauma has occurred can have different effects on health in late life. For example, 1 study examined a range of traumatic events that included a history of childhood physical abuse, lifetime sexual abuse, and a history of intimate partner violence at any time in the lifecycle. Interestingly, it was found that trauma occurring at ages 18–30 and 31–64 was associated with more physical health problems occurring in later age. Cumulative life trauma appears to have greater negative health consequences among the young-old (65–74) as opposed to the old-old (85 and older) (Krause et al. 2004). These findings suggest that individuals have varying vulnerabilities to trauma experienced at different times in their life-course and that trauma occurring during young adulthood and early age exerts the greatest effect on physical health problems in later life. Older survivors of childhood physical and sexual abuse are at risk of delayed trauma reactions when they experience stressful life events such as loss of social supports. Furthermore, they may have decreased adaptive skills and coping mechanisms (Franco 2007).

There are limited data regarding the long-term effects of childhood abuse into old age. This may be due to a cohort difference among the elderly; the current population of elders may have perceived physical punishment as normative when they were children, therefore the long term effects are less severe as among younger cohorts given the change in societal attitudes (Friedman et al. 2011). In addition, studies looking into the consequences of childhood trauma have often focused on the loss of one's parent as the traumatic event and not focused on physical trauma. Another limitation is that studies that do examine abuse occurring in childhood have focused on the short-term effects of the abuse and not the potential effects of trauma as it unfolds across the lifespan.

Childhood victimization, as well as exposure to physical or sexual violence after the age of 16, has been shown to increase the risk for interpersonal violence experienced among elderly women (Stöckl et al. 2012). Shaw and Krause (2002) found that older adults who had suffered from physical abuse from a parent in

childhood had higher degrees of physical and mental illness occurring in older age. The degree of physical violence endured as a child was associated with increased depressive symptomatology in later life. Similarly, childhood abuse both physical and sexual has been correlated with increased anxiety and depressive symptoms in older adults (Dube et al. 2003; Draper et al. 2008). A community-based mental health survey from the United Kingdom that examined a history of sexual abuse among respondents age 50 and older found an association with depression, generalized anxiety disorders, eating disorders, PTSD, and suicidal ideations (Chou 2012). Another community-based study conducted in respondents 50 years of age or older in the USA found that the number of childhood abuse experiences coincided with the number of internalizing psychiatric disorders diagnosed in older age. Unlike younger individuals among these older subjects, the investigators found that self-esteem was not correlated with child abuse, and that child abuse only had a negative effect on mental health outcomes among those with low self-esteem (Sachs-Ericsson et al. 2010). In addition, suicidal ideations are more prevalent among those over the age of 60 who experienced child physical and sexual abuse (Sachs-Ericsson et al. 2013). Proposed psychological mechanisms suggest that children who suffer abuse often develop maladaptive coping skills and a loss of sense of control in early life that leads to failure in adjusting to life stressors at a later age (Shaw and Krause 2002). However, Erik Erikson (1950) suggested that we strive to formulate a life review and integrate prior life experiences in later age. Such a reflection and psychological integration could lead to a decrease in negative sequelae from childhood trauma in later life.

## Holocaust Survivors in Late Life

Barel et al. (2010) conducted a meta-analysis to determine whether or not most Holocaust survivors suffer from psychopathological disorders, such as chronic anxiety or depression and personality impairment, or if most psychological impairments are restricted to a non-representative portion of survivors. They found that Holocaust survivors did not adjust as well as comparison samples; a finding that was greater among studies that were not from community samples (cf. Levav, Chapter 15). They did not find poorer physical health when non-select samples were trimmed. As for psychological wellbeing, Holocaust survivors were found to have a poorer outcome than controls (Shemesh et al. 2008). Posttraumatic stress symptoms were also found to be significantly greater in Holocaust survivors than among non-Holocaust survivors (Joffe et al. 2003). Interestingly, a small sample study of 40 subjects found a general diminution of PTSD over a period of over 10 years; however, some elderly individuals had new onset PTSD (Yehuda et al. 2009). The investigators, however, found no difference in cognitive functioning between Holocaust survivors and controls. They did find in a number of outcomes differences if the sample was from a select sample versus non-selected population; the former usually showed greater psychopathology.

Following that review, a national mental health survey conducted in Israel using the Composite International Diagnostic Interview (CIDI) on Holocaust survivors found that survivors had higher lifetime and 12-month prevalence rates of anxiety disorders, and more current sleep disturbances and emotional distress than elderly non-Holocaust survivors, but did not have higher rates of depressive disorders or PTSD (Sharon et al. 2009). In addition, a recent study found a mixed picture with subsequent adversity and mental health outcomes among Holocaust survivors. Post-Holocaust cumulative adversity and lifetime depression was found to be stronger among survivors than among comparisons; however, the association between post-Holocaust cumulative adversity and cognitive functioning was weaker among survivors than among the comparison group (Shira et al. 2010). Consistent with the lack of strong findings on the long-term effects of the Holocaust on health is a report showing that suicide is not increased among Holocaust survivors with cancer (Nakash et al. 2013). In addition, Holocaust survivors who live into late life do not have an increased risk of developing dementia compared to non-Holocaust survivors (Ravona-Springer et al. 2011).

Late life mortality in older Israeli Jews has been shown to be higher among those exposed to the Holocaust (Ayalon and Covinsky 2007; Collins et al. 2004). This may suggest that those at greatest risk may have died earlier, a finding that may have an implication for the negative studies of psychopathology.

## **Children and Young Adults Exposed to War**

A number of studies have been conducted on children exposed to World War II who were not Holocaust survivors. Children who experienced World War II in Hamburg, Germany, who were displaced and those who were not displaced were examined for posttraumatic stress symptoms and for depressive symptoms (Strauss et al. 2011). The investigators found that more than 60 years later, World War II related trauma exposure posed a risk on mental health functioning. A dose-relation between war-related experiences and posttraumatic stress or depressive symptoms in late life was found for both displaced and non-displaced elders. Another German population-based study found that 72.6 % of the elderly population reported at least 1 war-related traumatic event and 56.2 % a civilian-related trauma earlier in life (Hauffa et al. 2011). Those with PTSD were found to have a greater risk for developing cardiovascular diseases, cardiovascular risk factors, peripheral vascular disease, as well as for asthma, cancer, back pain, hearing deficits, osteoporosis, stomach problems, and thyroid disorders (Glaesmer et al. 2011a). Similarly, an Austrian study found that those who had PTSD symptoms later in life had been exposed to more lifetime trauma (Tran et al. 2013). A Polish study of individuals 63–78 years old found that about a third of individuals with World War II exposure had developed PTSD (Lis-Turlejska et al. 2012).

Another study examined British children ages 4–15 evacuated from Southeast England to rural areas in the United Kingdom during World War II without their

parents (Rusby and Tasker 2009). This study found significant associations between childhood experience variables and mental health, and these associations were mediated by upbringing variables and development into later life. Those evacuated in adolescence, 13–15 years of age had significantly lower lifetime depression and clinical anxiety than those evacuated at a young age. In addition, those who received good foster care during evacuation were at a reduced risk of affective disorders in adulthood. These findings were replicated by several German studies that examined individuals displaced during World War II (Kuwert et al. 2012; Freitag et al. 2013). The displaced respondents were significantly more affected by somatoform symptoms and PTSD than the non-displaced population. Kuwert et al. (2012), however, found that it was not displacement, but the amount of traumatic events that predicted somatization among those with somatoform symptoms. Similarly, studies of Finnish children evacuated to Sweden or Denmark between 1939 and 1945 without their parents due to the Soviet-Finnish wars showed increased psychological posttraumatic symptoms (Andersson 2011) and depressive symptoms (Pesonen et al. 2007) as older adults compared to non-evacuees.

Others have examined the impact of exposure in Nagasaki, Japan, to the atomic bomb. Individuals who still resided in the city 50 years following the dropping of the bomb were compared to subjects who moved afterwards to Nagasaki (Kim et al. 2011). Individuals who were in the vicinity of the atomic bomb explosion continued to have symptoms associated with increased psychological distress half a century later. An earlier study found that recurring and distressing recollection of the experience of the atomic bombing, suspicion over the relationship between the atomic bombing and an unhealthy physical condition, and witnessing death or severe injury of close relatives were significantly related to the degree of psychological distress of the survivors (Ohta et al. 2000).

Another population affected in young age to war exposure violence is refugees from the Vietnam War. This population is now reaching old age. A study of Vietnamese refugees in Australia found that individuals over the age of 55 had higher rates of PTSD than those who were younger (Silove et al. 2007). Interestingly, a comparative analysis found that the opposite was true for older individuals born in Australia, who had lower rates of PTSD than their younger counterparts.

These studies of earlier life experience to war all suggest that long-term consequences to trauma persist into late life. However, the extent of the trauma and the number of intervening life events may mediate the long-term outcome of psychopathology.

## **Veterans of War**

Chronic PTSD is highly prevalent in elderly veterans with combat exposure in war. The greater the combat exposure, the higher is the prevalence of PTSD symptoms. One study found that American World War II veterans exposed to moderate or heavy combat had approximately 13 times a greater risk of developing PTSD symptoms

when compared with non-combat veterans (Spiro et al. 1994). Similarly, a study of Australian Korean veterans of war found that 32.0 % met criteria for PTSD and 23.0 % met criteria for depression, with 17.0 % being comorbid for depression (Ikin et al. 2010). The investigators found that war-related factors were associated with depression comorbid with PTSD and PTSD alone, but not with depression alone. Interestingly, a study based on a sample of German child soldiers during World War II found low rates of current PTSD, 1.9 % (Kuwert et al. 2008); however, this study was based on respondents recruited through an article in the press.

A number of studies have focused on the long-term outcome of prisoners of war (POWs). A study of Japanese and Korean prisoners of war found that more than half of men met criteria for lifetime PTSD and 29.0 % for current PTSD using the Structured Clinical Interview for *DSM-IV* (SCID) (Engdahl et al. 1997). Those who were Japanese POWs were more traumatized and had high rates of current PTSD, 59.0 %. More recently, a study of veterans who were in captivity during World War II compared PTSD symptoms among those who were in the European and the Pacific theatres (Rintamaki et al. 2009). Both groups reported high rates of reflection, dreaming, and flashbacks pertaining to their prisoner of war experiences. The Pacific theatre POWs did so at higher rates than those from the European theatre of war; the rates of PTSD were 34.0 % and 12.0 %, respectively. Both groups reported greater rumination on POW experiences after retirement.

A review of the literature that examined late-onset PTSD among war veterans found that PTSD has occurred among some veterans as late as 50 years after combat without previous psychiatric symptoms or re-exposure to battle (Owens et al. 2005). Another review found varying rates of reactivation of PTSD, 11.0–34.0 % (Hiskey et al. 2008). PTSD symptoms may appear when the elderly veteran is faced with life events such as retirement, loss of a loved one, diminished sensory capabilities, mobility problems, isolation, cognitive impairment, institutionalization, increased interaction with medical facilities, and ill health. In contrast, several longitudinal studies found no evidence of an increase in PTSD symptoms related to life events and the aging process in this population (Lee et al. 1995; Dirkzwager et al. 2001).

An increased risk of dementia, as high as two-fold, among veterans who have PTSD across the lifespan has been found (Yaffe et al. 2010). Both the incidence and prevalence rates of dementia are increased; however, it is unclear whether there is a common risk factor underlying PTSD and dementia or whether PTSD is a risk factor for dementia (Qureshi et al. 2010). A neuropsychological study of POWs from World War II and Korea supported these findings (Hart et al. 2008). Those POWs who developed PTSD had average IQ, while those who did not develop PTSD after similar traumatic experiences had higher IQs than average. Those with PTSD performed significantly less well in tests of selective frontal lobe functions and psychomotor speed. In addition, PTSD POWs with comorbid psychiatric conditions experienced impairment in recognition memory for faces. Similarly, alterations in total learning were found in combat veterans with PTSD compared to those without PTSD (Yehuda et al. 2005).

## Domestic Violence

Although men are exposed to various degrees of violence in their lifetime, mostly accounted by experiencing war and street violence, women are more often victims of sexual and physical assault. Older women report a lower lifetime rate of physical and sexual assault compared to younger women (Cook et al. 2011). Prevalence estimates range from 6.0 to 59.0 % for interpersonal violence over the lifetime of older women. Other studies found that women over age 55 reported lower lifetime exposure to physical and sexual trauma as opposed to exposure from ages 18 to 30. These data are puzzling as it contradicts the assumption that exposure to physical or sexual violence should accumulate over a lifetime (Cook et al. 2011). Possible explanations include reluctance to disclose trauma due to shame related to generational beliefs or decreased ability to remember. Older women with a lifetime history of sexual abuse also report different characteristics of the assault, including lower rates of vaginal, oral and anal forms of rape. Furthermore, there appears to be different beliefs about the nature and severity of physical violence among younger and older women, which may account for these differences in reported characteristics (Cook et al. 2011).

Some surveys conducted in the mid 1990s found virtually that no women over age 59 reported victimization (Verhoek-Oftedahl et al. 2000). Investigators at the time believed that the women in the older age cohort considered violence a private family matter. In earlier years such violence was not even considered against the law, for example marital rape laws and domestic violence laws only came into evolution in the 1980s and early 1990s.

Cook et al. (2011) reviewed 58 studies published between 1980 and 2009 on older women who had experienced domestic violence during their lifetime. To summarize, it is known that women who have suffered intimate partner violence have greater physical and mental health-related problems. Studies demonstrate that older women who have experienced interpersonal violence report greater psychiatric distress, including increased rates of depression, substance abuse and anxiety when compared to older women who did not report a history of interpersonal violence.

Older women are less likely to disclose a history of physical or sexual abuse when compared to younger samples (Cook et al. 2011). Elderly cohorts often delay disclosing trauma histories to their providers out of shame as well as perceived social stigma arising from generational beliefs from earlier times when disclosure was not an option. There also may be complicating medical problems that led to the clinical visit that may be foremost in the patient's mind and of concern to the provider. Additionally, there is a lack of normative language to describe their earlier experiences.



## Elder Abuse

### *Definition of Elder Abuse*

Legal authorities frequently define elder abuse as the wilful infliction of physical pain, or wilful deprivation of services including neglect, abandonment and exploitation against the elderly person. A caretaker, not limited to family members, must carry out the act or other person with a duty to care for the elderly person, including institutional settings. The USA Academy of Sciences defines elder abuse as *intentional actions that cause harm, whether or not harm is intended, to a vulnerable elder by a caregiver or other person who stands in a trust relationship to the elder or the failure by a caregiver to satisfy the elder's basic needs or to protect the elder from harm* (Bonnie and Wallace 2003). The World Health Organization (WHO) defines elder abuse as *a single, or repeated act, or lack of appropriate action, occurring within any relationship where there is an expectation of trust, which causes harm or distress to an older person*. The requirement of the act being committed by a caregiver, person in a trust position or an institutional setting distinguishes elder abuse from other crimes, violence and exploitation of an elderly individual.

Typically, elder abuse encompasses 5 domains (Kohn and Johnston 2013). Physical abuse includes inflicting physical pain or injury; sexual abuse consists of inflicting nonconsensual sexual activity; psychological or emotional abuse is the inflicting of mental anguish, including intimidation, humiliation, or threats; financial abuse is the improper use of resources, property, or assets without the person's consent; and neglect includes the abandonment, failure to fulfill a care-taking obligation, including provision of food, safe shelter, physical health and mental health care, or basic custodial care.

### *Prevalence of Elder Abuse*

Elder abuse is underreported; physicians report only 2.0 % of all cases (Rosenblatt et al. 1996). The mistreated elder tends to deny that the abuse or neglect takes place or refuses to report it. Older victims of abuse may not report because of fear of retaliation; fear of abandonment or being removed from the home; the belief that the abuse was deserved; the sense that there is nowhere else to go; the belief that nothing can be done about it; and the shame in admitting such treatment from one's own family (Kosberg 1988). The elder also may be concerned that family members may face criminal charges. Elderly victim's failure to report may not be just do to fear that they will be removed from the home, but that removal of the abuser removes the support standing between the elder and long term care. Those who are mistreated are 3 times more likely to die in a 3-year period (Dong et al. 2009).

Until recently there were little data that provided an estimate of the number of elders who are victimized (Cooper et al. 2008a). Much of the early data relied on protective agency reviews, sentinel reports, and criminal justice reports. These sources, however, are not collected for the purpose of epidemiological research. Interviews of caretakers and direct interviews of representative populations of the elderly have only recently been conducted. The issues of how to evaluate those who have cognitive disorders and increasing the willingness of elders to disclose remain methodological issues. Ideally, there should be integration of these various sources to provide a coherent picture of the extent and public health implications of elder abuse. How elder abuse is measured is not standardized across studies.

Two recent national studies of the prevalence of elder abuse have been conducted in the USA. In a survey of 3,005 community residents between ages 57 and 85 interviewed either in person or with a leave-behind questionnaire found that past-year prevalence rates reached 9.0 % for verbal abuse, 0.2 % for physical abuse, and 3.5 % for financial mistreatment (Laumann et al. 2008). The second study used random digit dialing of a representative sample of 5,777 respondents age 60 and older living in the community, and found a 1-year prevalence rates of 4.6 % for emotional abuse, 1.6 % for physical abuse, 0.6 % for sexual abuse, 5.1 % for potential neglect, and 5.2 % for financial abuse. One in ten elders, defined as those over 60 in most studies, had experienced some form of abuse in the past year (Acierno et al. 2010).

In Canada, family-related victimization was higher among elderly women, while elderly men were more likely to be victimized by an acquaintance or stranger. Grown children and spouses or former spouses most often committed family violence against the elderly in Canada. In 2010, 36.0 % of family perpetrators against individuals aged 65–69 years were grown children, followed by spouses at 30.0 %. By age 85–89 years, grown children accounted for nearly half (49.0 %) of all family perpetrators, while spouses represented 21.0 % of family perpetrators (Statistics Canada 2011).

A number of studies have been conducted in Europe. In a community-based survey in Ireland, the 12-month prevalence rate of elder abuse and neglect was relatively low, 2.2 % (Naughton et al. 2012). The frequency of subtypes of abuse was financial 1.3 %, psychological 1.2 %, physical abuse 0.5 %, neglect 0.3 %, and sexual abuse 0.05 %. A study conducted in the United Kingdom had similar 1-year prevalence rates, 2.6 % (Biggs et al. 2009). The prevalence of subtypes of reported mistreatment was neglect, 1.1 %; financial abuse, 0.7 %; psychological abuse, 0.4 %; physical abuse, 0.4 %; and sexual abuse, 0.2 %. In a study of community dwelling elders in 7 European countries (Germany, Greece, Italy, Lithuania, Portugal, Spain, Sweden) the overall 12-month prevalence rate of psychological abuse was 19.4 %. Other forms of abuse were less prevalent, physical, 2.7 %, sexual, 0.7 %, financial, 3.8 %, and injury, 0.7 % (Soares et al. 2010). However, the rates varied widely between the participating European countries, with the highest rates in Germany (Lindert et al. 2013). A 12-month prevalence survey conducted in the province of Girona, Spain, of persons age 75 and older found suspected abuse in 29.3 % of the respondents. The most frequent of the different

subtypes of abuse was neglect, 16.0 %; followed by psychosocial abuse, 15.2 %; financial abuse, 4.7 %; and physical abuse, 0.1 % (Garre-Olmo et al. 2009). A survey conducted in Sweden found that the rate of psychological abuse varied by age of the elder and gender, from 5.0 to 8.9 % for psychological abuse, and 0.2–3.0 % for physical abuse (Olofsson et al. 2012). This study found high rates of suicidal ideations and attempts among abused elderly males. A national survey in Israel reported a rate of elder abuse in the past year of 18.4 %, with verbal abuse, 14.1 % being the most common type of abuse, followed by financial exploitation, 6.4 %; suffering from limitation of freedom, 2.7 %; and either sexual or physical abuse, 2.0 % (Lowenstein et al. 2009).

In China, a study of 3 rural communities found that over a third, 36.2 %, of the 60 and older respondents reported mistreatment in the past year (Wu et al. 2012). Prevalence rates of psychological mistreatment, caregiver neglect, physical mistreatment, and financial mistreatment were 27.3 %, 15.8 %, 4.9 % and 2.0 %, respectively. A probability sample of 500 elderly respondents in Chennai, India, found a 14.0 % prevalence rate of elder abuse (Chokkanathan and Lee 2005). Chronic verbal abuse was most common, 10.8 %, followed by financial abuse, 5.0 %; physical abuse, 4.3 %; and neglect 4.3 %. A study of 274 community respondents in Pernambuco, Brazil, found that 20.8 % of the respondents experienced some form of violence in their home environment (Duque et al. 2012).

The few studies that have examined the prevalence of elder abuse in nursing facilities have suggested that it is not an uncommon occurrence (McDonald et al. 2012). Studies that evaluate residents in facilities directly are rare, and most are based on nursing staff reports.

## **Risk Factors for Elder Abuse**

Numerous patient and caregiver factors have been associated with elder abuse. Most studies report that women have higher rates of being abused than men. Forensic studies suggest that while women are more likely to be victims of sexual and physical assault, men are more likely to die from homicide due to neglect (Abath et al. 2010; Shields et al. 2004). Persons over the age of 75, having a lower socioeconomic status, those with more cognitive impairment, individuals with psychiatric or psychological problems, and those requiring more assistance with activities of daily living are at increased risk of abuse (Johannesen and LoGiudice 2013). Elders at highest risk of being abused include those who are physically and mentally dependent on the caregiver; have poor communication with their caregiver; are submissive, withdrawn, or depressed in the presence of the suspected abuser; exhibit demanding or aggressive behaviour; have been abused in the past by the caregiver; exhibit potentially provocative behaviours; and live constantly with their caregiver (Reay and Browne 2001; Bennett and Kingston 1993; Steinmetz 1998).

Data limited to police reported cases from 2000 to 2005 in the National Incident-Based Reporting System in the USA, which is not based on a representative

sample of the population, had 87,422 reported incidents of elder physical abuse with a 1:1 victim-offender ratio. The police reported that most physical assaults were committed by a person age 45 or older (41.4 %), with a mean age of 42. About 73.0 % of offenders were white and 72.1 % were males, while only 46.6 % of victims were males. The abusers were most often children (23.9 %); followed by a spouse (19.6 %); or other family (12.3 %), acquaintances (36.2 %), and others (8.1 %) (Krienert et al. 2009). Caregiver factors rather than risk factors associated with the abused elder may be more important in predicting abuse and neglect (Reis and Nahmias 1998).

Caregiver studies that examined elder abuse reported a range of 12.0–55.0 % (Cooper et al. 2008b). Eighteen factors have been identified in caregivers that have been associated with increased likelihood for elder abuse and neglect: (1) responsibility for an elderly individual over the age of 75; (2) living constantly with the elderly dependent; (3) inexperience or unwillingness to provide care; (4) suffering a relationship conflict; (5) exhibiting hostile, threatening or aggressive behaviour; (6) having other caring demands from spouse or children; (7) being subject to high stress and strain; (8) isolation and lack of social support; (9) poor physical health; (10) history of mental illness; (11) history of depression; (12) history of anxiety disorder; (13) history of alcohol abuse; (14) history of drug abuse; (15) history of being abused or neglected as a child or a history of family violence; (16) assistance with their own activities of daily living that are unmet; (17) high expectations of the elderly dependent; and (18) being heavily dependent on the person they are mistreating (Kohn and Verhoek-Oftedahl 2011).

A number of studies have focused specifically on caregivers of individuals with dementia. Anxious and depressed caregivers engage in more abuse than other caregivers of individuals with dementia (Cooper et al. 2010a). A British study also found that abuse was mediated by dysfunctional coping strategies and higher caregiver burden defined as the physical, psychological, social, and financial demands of caring for someone (Cooper et al. 2010a). Abuse of individuals with dementia was predicted by spending more hours providing caregiving, experiencing more abusive behaviour from the individual and higher caregiver burden. Among families studied, these investigators found a high prevalence of self-report of abusive behaviours by family caregivers, 52.0 %, reported some abusive behaviour in the past 3 months, 33.0 %, psychological abuse and 4.0 %, physical abuse. Unfortunately, the investigators found that the abusive behaviour worsened 1 year later despite contact with specialized services (Cooper et al. 2010b). The predictors of the increase in abusive behaviour were anxiety and depressive symptoms in the caregivers, and fewer hours of in-home services at baseline. A study conducted in Florida, USA, examined verbal abuse by caregivers and found that 60.1 % reported verbal aggression as style of conflict resolution (Vandeweerd and Paveza 2005). Caregiver factors associated with increased risk for verbal aggression included being female, providing care to verbally aggressive elders, caregiver's diminished cognitive status, caregivers with high levels of psychiatric symptoms including depression, or experiencing a high degree of caregiver hassle. In Japan, a study was conducted to explore an earlier finding from a nationwide survey that elicited that

50.0 % of those who were perpetrators were unaware that their behaviour constituted elder abuse. The study of non-caregivers ranging in ages from 18 to 86 perceived abusive behaviour toward an elder with dementia as less abusive than they perceive the same behaviour toward an elder without dementia (Matsuda 2007).

Little data, however, exists on the characteristics of professional caregivers who abuse residents in nursing home facilities. The following risk factors for employees who become abusive have been identified: lower job satisfaction; viewing patients as childlike; experiencing burnout; too difficult work environment; history of domestic violence; history of mental illness; and drug or alcohol dependence (Lindbloom et al. 2007).

## **Mental Health Consequences of Elder Abuse**

The mental health consequences of elder abuse remain virtually unstudied. A number of cross-sectional studies have included mental health measures, psychological distress and depression, as risk factors for elder abuse and found a positive association (Dong et al. 2013). As nearly all studies on elder abuse are cross-sectional whether or not these mental health outcomes are also an outcome of elder abuse is difficult to ascertain. Only 3 longitudinal studies with mental health as an outcome have been conducted suggesting poorer mental health outcomes among those who are abused (Dong et al. 2011; Comijs et al. 1999; Schofield and Mishra 2004). These studies examined psychological distress or depressive symptoms, but not incidence of mental disorder as an outcome.

Two studies have examined the prevalence of elder abuse in mental health settings. The first study was a Canadian chart review of outpatients and inpatients at the Montreal General Hospital geriatric psychiatry service, in the city of Montreal. Abuse and neglect was reported in the medical record of 16.0 % of the patients (Vida et al. 2002). The second study compared elder abuse among seniors hospitalized in a psychogeriatric ward and those hospitalized for somatic disorders in an internal ward in a Czech psychiatric hospital (Luzny and Jurickova 2012). Those elders in a gerontopsychiatric unit had a rate of abuse of 13.9 % compared to 1.9 % among those who were somatically ill. Neither study resolves the question of whether mental illness is a factor leading to abuse or a result of abuse, the onset of abuse and mental illness was not reported. Studies that have measured PTSD or the incidence of other psychiatric disorders as an outcome of elder abuse are lacking whether in clinical samples or representative population studies.

## ***Evaluation and Screening for Elder Abuse***

The utility of screening for elder abuse has been questioned (Lachs and Pillemer 2004). There are 2 arguments against screening: (1) no effective screening

techniques have been developed for elder abuse, although a number of instruments do exist, and (2) studies have not shown that intervention in those identified with elder abuse improves clinical outcome and does not paradoxically worsen the risk of violence (Daly et al. 2012; Lachs and Pillemer 2004). Clinicians should be aware of clinical symptoms that may be suggestive of elder abuse: delay between injury or illness and seeking medical attention; disparity in explanations between patient and suspected abuser; implausible, vague or inappropriate explanations of injury; laboratory studies inconsistent with stated history; unexplained bruises fractures, lacerations or abrasions; gross inattention to nutrition or hygiene; apathy, depression or worsening dementia; injuries in various stages of healing; decubitus ulcers; lack of compliance with medical regimen; bleeding gums, poor dentition and oral hygiene; and weight loss, malnutrition and vitamin deficiency (Levine 2003). Bruises may be a telling sign of physical abuse in the elderly, particular if they are larger than 5 cm on the face, lateral right arm, or posterior torso (Wiglesworth et al. 2009).

Once the possibility of elder abuse has been raised either from clinical evaluation or screening, a comprehensive clinical and psychosocial assessment is necessary. A multidisciplinary approach may be necessary. Lachs and Pillemer (1995) developed an algorithm to address confirmed elder abuse. If the patient is willing to accept services then context specific interventions should be initiated, such as education regarding elder abuse including the tendency of abuse to increase in frequency and severity over time; implementing a safety plan; and referral to appropriate services. If the patient is unwilling to accept services the intervention differs by whether or not the patient lacks capacity. For those who do not lack capacity one should provide education with regard to abuse, provide information for appropriate referrals, develop and review a safety plan, and develop a follow-up plan. For those without capacity referral to an appropriate agency would be necessary and possibly conservatorship or guardianship. Reporting of elder abuse, whether or not the person is willing to accept services and has capacity or not, is required in many jurisdictions.

## Consequences of Other Forms of Trauma During Old Age

### *Disasters*

Early research on disasters suggested that they had a disproportionate impact on the elderly, that their sense of deprivation was greater than their actual losses. It was believed that the elderly had more psychological distress (Kilijanek and Drabek 1979). For example, increased psychological distress and post-traumatic symptoms were noted in the elderly compared to younger individuals recruited from primary care clinics following the Chi-Chi earthquake in Taiwan (Yang et al. 2003). Alternatively, the elderly may have developed skills to cope with the stresses of life

because of past experiences. This is known as the 'inoculation hypothesis' (Knight et al. 2000). A comprehensive review of disaster-related stress by Norris et al. (2002) found that in 15 of 17 population samples reported in 16 articles, older persons were not found to be at greater risk than other adults. In examining the outcome of Hurricane Mitch in Honduras, Kohn et al. (2005) found the elderly were at risk for PTSD based on the Composite International Diagnostic Schedule (CIDI), but were equally affected as younger adults. In addition, the investigators found that personal threats to life and physical integrity increased the risk of psychopathology. This study did not find support for a 'differential vulnerability' hypothesis; however, there was indirect evidence for the 'inoculation' hypotheses.

A comprehensive review of studies conducted up to 2006 that included elderly samples found 7 studies where younger cohorts were in more distress, 8 studies where middle aged cohorts were in more distress, and 11 studies where older subjects were in more distress, and 6 studies where no differences were noted (Cook and Elmore 2009). The authors concluded that effects of natural disasters on the mental health of older adults are equivocal. Since that review a number of recent studies have added to this equivocal literature. PTSD symptoms and general psychiatric morbidity was found to be higher among the elderly 15 months after the Sichuan, China, earthquake (Jia et al. 2010). However, a study of another earthquake in Wenchuan, China, examining PTSD symptoms found no significant difference among those age 55 and older (Kun et al. 2009). In a multiple logistic regression limited to that age 60 and older from the Wenchuan earthquake using the PTSD-Checklist and the Hopkins Symptom Checklist-25, investigators found that respondents who had suffered a loss of livelihood or had a stronger initial fear during the earthquake were more likely to exhibit PTSD symptoms (Zhang et al. 2012). Respondents, who were female, bereaved, injured or had family members who were injured were more likely to exhibit anxiety symptoms. Only a stronger initial fear during the earthquake was associated with depressive symptoms.

Most studies continue to suggest little difference in the risk of developing psychopathology post-disaster between younger and older cohorts. However, little research with few exceptions have examined the longitudinal course of traumatized elderly individuals or taken into account baseline psychopathology. A longitudinal study of victims from Hurricane Katrina affecting the southern USA found that the individuals who developed PTSD and were 60 years of age and older were less likely to recover in a 2-year period than those between ages 40 and 59; no statistical difference was noted between those who were less than 40 and over age 59 (McLaughlin et al. 2011). Another study examined whether or not those with a pre-existing mental health diagnoses were at increased risk of developing a new disorder post-Katrina; older individuals were at no more risk than younger respondents (Sullivan et al. 2013).

## ***War and Terrorism***

Shortly after the war in Kosovo the civilian population was surveyed. Those over the age of 65 were found to exhibit greater levels of distress, but did not differ in rates of posttraumatic symptoms based on the Harvard Trauma Questionnaire (Cardozo et al. 2000). A household survey conducted during the war in Afghanistan also included individuals over the age 55 (Cardozo et al. 2004). Older individuals had poorer social functioning and higher levels of depression, the later did not reach statistical significance. No difference was seen with PTSD based on the Harvard Trauma Questionnaire.

Several studies have examined the impact of the war and terrorism on elderly Israelis. In a study that focused on the impact of terrorism on older Israelis, no difference was noted between younger adults and older adults in posttraumatic symptoms (Bleich et al. 2005). A small sample study that examined Holocaust survivor response to the SCUD missile attacks during the Gulf War, those whose homes were damaged by SCUD missiles were re-traumatized and showed reactivation of survivor syndrome (Robinson et al. 1994). In examining the effects of the Second Lebanon War on Israeli citizens, although the elderly reported significantly higher levels of stress symptoms and lower levels of posttraumatic recovery, elderly males showed higher levels of individual resiliency compared to younger individuals (Kimhi et al. 2012).

A number of studies examining the impact of the World Trade Centre September 11, 2001 terrorist attack in New York city, included older age groups in the analysis. A study conducted 2–3 years after the terrorist attack on residents in lower Manhattan found higher rates of PTSD based on a symptom checklist using telephone interviewing among those 65 and older compared to individuals age 18–24 years of age. Although difference with other age groups were not tested, the elderly had lower rates than those age 45–64 (DiGrande et al. 2008). In another study, using the same methodology on civilian survivors of 9/11, the authors had a similar finding, but did not find a difference between those age 65 and older and age groups other than 18–24 years of age (DiGrande et al. 2011).

## **Response to Trauma Among Individuals with Dementia**

Most studies that examined the response of trauma among the elderly excluded individuals with dementia. Evaluating the response of individuals with dementia to traumatic events is a challenge. Behavioural consequences can include signs of fearfulness, increase in agitation, pacing, isolation and resistance to care, as well as a hesitation to talk (Wiglesworth et al. 2010). Studies of war veterans with dementia with and without a diagnosis of prior PTSD have not found an increase in aggression or other behavioural symptoms (Ball et al. 2009; Verma et al. 2001). Recall of



traumatic events among the cognitively impaired may be subject to a recall bias. However, individuals with dementia may recall traumatic events as illustrated in a study of individuals with Alzheimer's disease assessed 6–10 weeks after the Kobe, Japan, earthquake (Ikeda et al. 1998).

Evaluation of individuals with dementia for exposure to trauma has a number of obstacles including lack of physical evidence, poor language, decreased cognitive capacity and poor victim cooperation. Interviewing the caregiver may be necessary to ascertain exposure to trauma including elder abuse. Studies have shown that caregivers will frequently admit to abuse of the care recipient (Cooper et al. 2009).

## Biological Correlates of PTSD

Very few studies have been conducted examining biological correlates of PTSD in the elderly. An examination of 32 male veterans 52–81 years of age, half with PTSD, underwent a MRI scan and a PET scan using placebo and hydrocortisone to examine cerebral glucocorticoid responsiveness (Yehuda et al. 2009). The PTSD group showed a decrease in activity in the anterior cingulate cortex with hydrocortisone, which reflects differences in central glucocorticoid responsiveness. Compared to the non-PTSD group, the PTSD group responded to glucocorticoid challenge by increasing metabolism in the right hippocampus and the right ventral amygdala. In addition, the investigators found cortisol enhanced episodic memory performance in both groups, but enhanced elements of working memory performance only in the PTSD group (Yehuda et al. 2007). The authors suggested that the preferential effect of cortisol administration on working memory in PTSD might be related to the superimposition of PTSD and age, as cortisol had impairing effects on this task in a younger cohort.

A study of Holocaust survivors with and without PTSD, which also included a non-traumatized control group, did not find smaller hippocampal volumes in the either traumatized group (Golier et al. 2005). This finding was counter to the literature on younger populations that suggest that individuals with PTSD have small hippocampal volumes. Freeman et al. (2006) also found no association among POWs. There have been a number of hypotheses put forth to explain these results: (1) atrophy due to normal aging has masked these results; (2) lifetime low ambient cortisol may protect the hippocampus from stress-related atrophy; (3) a selection bias may exist in old age with a healthier sample being surviving; and (4) smaller hippocampus volume may be a predisposing factor rather than a consequence of PTSD (Lapp et al. 2011). Studies on other elderly groups with early traumatization are lacking.

Yehuda et al. (2009) has also conducted a number of studies examining cortisol response among Holocaust survivors. Holocaust survivors with PTSD show a flatter circadian rhythm of cortisol release than comparison subjects who exhibit lower morning, and higher evening, cortisol levels. Holocaust survivors with PTSD have lower mean cortisol levels over the diurnal cycle, possibly because

morning cortisol levels are not greatly diminished (Yehuda et al. 1995, 2005). Holocaust survivors with PTSD also demonstrate an enhanced negative feedback inhibition of cortisol compared to controls (Yehuda et al. 2002). The investigators suggest that the flatter circadian rhythm in Holocaust survivors may be indicative of a superimposition of age-related hypothalamic-pituitary-adrenal axis alterations. Studies examining the hypothalamic-pituitary-adrenal axis in other elderly populations exposed to violence have not been conducted.

## Prevalence of Post-traumatic Stress Disorder in the Elderly

Post-traumatic stress disorder, although less prevalent in community-based mental health studies among the elderly compared to younger cohorts, is nevertheless a frequent mental health outcome among traumatized elders exposed to violence either earlier or later in life. Current PTSD among the elderly is significantly associated with visits to mental health professionals, and with increased frequency of general practitioner visits and of specialist visits (Glaesmer et al. 2011b).

A population survey of 3 German northern cities using the SCID to make a diagnosis of PTSD found that the elderly, 65 and older, did not differ statistically in rates of PTSD from younger age groups both for lifetime and 1-month prevalence (Spitzer et al. 2008). The lifetime prevalence for the elderly was 3.1 % and the 2 younger cohorts were 3.8 and 4.0 %. The 1-month prevalence was 1.5 % among the elderly, and those who were younger, 2.6 and 3.6 %. A nationally representative study of Germany examining the rates of PTSD based on an instrument that combined the CIDI and a PTSD symptom checklist found the highest rates among that age 60 and older, 3.4 %, compared to 1.9 % among 30–59 year olds (Maercker et al. 2008). Another SCID study was conducted in the Sivas province of Turkey limited to those 65 and older (Kirmizioglu et al. 2009). The current prevalence for PTSD was 1.9 % and lifetime prevalence was 1.1 %. The prevalence rate decreased with age and was highest among females. A study of the population age 65 of Montpellier, France, selected from the electoral roles found a lifetime rate of PTSD of 2.4 % and current PTSD of 1.2 % based on the Watson PTSD Inventory (Chaudieu et al. 2011).

The most common psychiatric prevalence studies that are representative of the general population have been conducted using the CIDI to make a diagnosis of PTSD. Although there are many such studies conducted around the world only a small number have presented rates on PTSD stratified by age. Table 8.1 presents a summary of the prevalence rates from these studies. Only 2 studies have further stratified the elderly population beyond age 65. A Chilean study found a decreasing prevalence among the old-old (Kohn et al. 2008); however, this was not the case for the study based in the USA (Byers et al. 2010).

**Table 8.1** CIDI PTSD *DSM-IV* prevalence rates in representative community samples in %

| Country             | Author                      | Prevalence period | Age range | Elderly age | Elderly | Non-elderly |
|---------------------|-----------------------------|-------------------|-----------|-------------|---------|-------------|
| Australia           | Trollor et al. (2007)       | 12-month          | 18+       | ≥65         | 0.2     |             |
| Brazil              | Viana and Andrade (2012)    | Lifetime          | 18+       | ≥65         | 2.5     | 2.9–4.0     |
| Chile <sup>a</sup>  | Kohn et al. (2008)          | Lifetime          | 20+       | ≥65         | 2.0     | 5.2         |
|                     | Kohn et al. (2008)          | 12-Month          | 20+       | ≥65         | 2.7     | 1.5         |
| China               | Lee et al. (2007)           | Lifetime          | 18–70     | ≥65         | 0       | 0.3–0.4     |
| ESEMeD <sup>b</sup> | Darves-Bornoz et al. (2008) | 12-month          | 18+       | ≥65         | 10.8    | 7.4–31.3    |
| Iraq                | Alhasnawi et al. (2009)     | Lifetime          | 18+       | ≥65         | 4.9     | 1.6– 3.7    |
| Netherlands         | de Vries and Olf (2009)     | Lifetime          | 18–80     | ≥65         | 2.7     | 5.2–9.8     |
| New Zealand         | Wells et al. (2006a)        | 12-month          | 16+       | ≥65         | 1.7     | 2.4–3.5     |
|                     | Wells et al. (2006b)        | Lifetime          | 16+       | ≥65         | 4.1     | 4.4–7.0     |
| South Africa        | Stein et al. (2008)         | Lifetime          | 18+       | ≥65         | 4.4     | 1.8–2.7     |
| USA                 | Byers et al. (2010)         | 12-month          | 55+       | ≥65         | 0.6–0.7 | 4.7         |
|                     | Kessler and Wang (2008)     | Lifetime          | 18+       | ≥60         | 2.5     | 6.3–9.2     |

<sup>a</sup>Belgium, France, Germany, Italy, the Netherlands, Spain

<sup>b</sup>DSM-III-R diagnoses

## Psychotherapy with Traumatized Elders

Older individuals who have experienced trauma suffer from more negative physical and mental health consequences and subsequently may be high utilizers of the medical system. Although a debate exists about the validity of routine screening, it is recommended that clinicians should routinely inquire about a history of traumatic events, and examine for physical evidence of current abuse. Supportive psychotherapy, relaxation therapy, psychodynamic psychotherapy, as well as cognitive behavioural therapy have been used to alleviate psychological suffering associated with trauma in the elderly. However, the evidence of specific treatment modalities specific to the older population is limited.

Psychotherapy treatment for survivors of trauma, and especially those suffering from PTSD from previous trauma, aims to provide support and education as well as coping skills. The first step should be promoting patient safety, which may include establishing a safety plan, especially if the trauma is current and ongoing. There may be generational attitudes about psychotherapy and fear of revealing an abuse history, therefore addressing any concern of stigma, loss of control and reluctance to disclose previous trauma is necessary. Older patients may take longer to engage in therapy than younger patients; therefore, the time course may vary in comparison to younger patients. Clinicians have found that older patients require more time to process and work through trauma. In addition, it is important to acknowledge

physical complaints and address the older patient with in a respectful manner that maintains their dignity (Weintraub and Ruskin 1999).

Cognitive behavioural treatments in older populations are the most widely studied. There is evidence that controlled exposure to traumatic memories, desensitization training and cognitive restructuring are beneficial (Franco 2007). No randomized controlled studies have specifically examined the efficacy of cognitive therapy for older elderly patients with PTSD (Böttche et al. 2012). Cognitive approaches alone or combined with behavioural interventions have been found to be effective for other anxiety disorders in late life, especially GAD (Ayers et al. 2007; Wolitzky-Taylor et al. 2010). Exposure therapy for PTSD should be used cautiously in older patients given the high vegetative arousal associated with exposure, in particular those with cardiovascular disease (Hyer and Woods 1998). Only one controlled study utilizing exposure therapy has been conducted; this study of Portuguese war veterans showed a reduction in PTSD, depression and anxiety symptoms compared to controls receiving virtual reality treatment (Gamito et al. 2010). Relaxation training may be beneficial, as well, especially in relieving symptoms of sleep disturbance. Eye movement desensitization reprocessing (EMDR) is a newer treatment that has shown some benefit limited to case studies (Böttche et al. 2012). A single controlled study using the narrative life review therapy with imaginal exposure and cognitive reconstruction has shown a significant decrease in PTSD symptoms (Knaevelsrud et al. 2009). There is less data on the effectiveness of psychodynamically oriented individual or group psychotherapy, such treatments focus on mourning loss and processing past and present experiences.

Group therapy has had some evidence of support to normalize the experiences of PTSD and remove the stigma of treatment and has shown to be beneficial for elder survivors of the Holocaust and war veterans (Weintraub and Ruskin 1999). Group therapy may serve to remove stigma, normalize experience among older persons as well.

## Conclusion

Although the elderly have lower rates of mental disorders, including PTSD, than younger individuals following a lifetime of exposure to trauma, the rates are substantial and the risk of elder abuse remains high and its long-term consequences not fully understood. The literature on violence toward the elderly underscores the importance of gathering history of exposure to trauma when evaluating the mental status of the elderly.

Clearly, the cumulative effects of trauma throughout the life cycle can have negative effects on the physical, emotional and cognitive and psychological health on elderly patients. Individuals who have endured severe early life trauma whether in childhood or later in life may be at increased risk for psychopathology. Although for many PTSD may resolve, evidence of increased psychological distress does

persist. In addition, older individuals who are exposed to violence in old age may be at increased risk for poorer mental health outcomes including PTSD. Given the aging population and the increase health care utilization of these populations, it is especially important to identify and treat these patients.

Most traumatized older individuals do not develop psychopathology following exposure to violence or trauma, suggesting that a resilient pathway may be more common than a recovery pathway (Bonanno 2004). A number of hypotheses have been put forth to explain resilience in older adults (Elmore et al. 2011). The vulnerability theory suggests that older adults have a varied and extensive accumulation of life experiences that affect both short and long term outcome to trauma. The stress inoculation hypothesis suggests that early life trauma fosters resilience to subsequent trauma. One path is direct tolerance, where exposure to a stressor may lessen the effect of that stressor in the future. The second path is cross-tolerance, whereby prior exposure to a stressor may lessen the effect to a different stressor in the future. The burden hypothesis argues that neither the elderly nor younger populations should be most affected by trauma, but the middle-aged individuals who experience the greatest disruption and demands on their time as providers. The maturation hypothesis posits that older adults have more mature coping styles and therefore they are less reactive to stressful life events. At present, this theory appears to have little support. Another theory that tries to explain resilience in the elderly exposed to trauma suggests that the less resilient survivors of trauma have died before reaching old age leaving behind a healthier cohort, a mortality effect or a survivor bias.

## References

- Abath Mde, B., Leal, M. C., Melo Filho, D. A., & Marques, A. P. (2010). Physical abuse of older people reported at the Institute of Forensic Medicine in Recife, Pernambuco State, Brazil. *Cadernos de Saúde Pública*, *26*, 1797–1806.
- Acierno, R., Hernandez, M. A., Amstadter, A. B., Resnick, H. S., Steve, K., Muzzy, W., & Kilpatrick, D. G. (2010). Prevalence and correlates of emotional, physical, sexual, and financial abuse and potential neglect in the United States: The National Elder Mistreatment Study. *American Journal of Public Health*, *100*, 292–297. doi:10.2105/AJPH.163089.
- Alhasnawi, S., Sadik, S., Rasheed, M., Baban, A., Al-Alak, M. M., Othman, Y., Ismet, N., Shawani, O., Murthy, S., Aljadiry, M., Chatterji, S., Al-Gaseer, H., Streel, E., Naidoo, N., Mahomoud Ali, M., Gruber, M. J., Petukhova, M., Sampson, N. A., Kessler, R. C., & Iraq Mental Health Survey Study Group. (2009). The prevalence and correlates of DSM-IV disorders in the Iraq Mental Health Survey (IMHS). *World Psychiatry*, *8*, 97–109.
- Anderson, P. (2011). Post-traumatic stress symptoms linked to hidden holocaust trauma among adult Finnish evacuees separated from their parents as children in World War II, 1939–1945: A case-control study. *International Psychogeriatrics*, *23*, 654–661.
- Ayalon, L., & Covinsky, K. E. (2007). Late-life mortality in older Jews exposed to the Nazi regime. *Journal of the American Geriatric Society*, *55*, 1380–1386.
- Ayers, C. R., Sorrell, J. T., Thorp, S. R., & Wetherell, J. L. (2007). Evidence-based psychological treatments for late-life anxiety. *Psychology and Aging*, *22*, 8–17.

- Ball, V. L., Hudson, S., Davila, J., Morgan, R., Walder, A., Graham, D. P., Snow, A. L., & Kunik, M. E. (2009). Post-traumatic stress disorder and prediction of aggression in persons with dementia. *International Journal of Geriatric Psychiatry*, *24*, 1285–1290. doi:[10.1002/gps.2258](https://doi.org/10.1002/gps.2258).
- Barel, E., Van Ijzendoorn, M. H., Sagi-Schwartz, A., & Bakermans-Kranenburg, M. J. (2010). Surviving the holocaust: A meta-analysis of the long-term sequelae of a genocide. *Psychological Bulletin*, *136*, 677–698. doi:[10.1037/a0020339](https://doi.org/10.1037/a0020339).
- Bennett, G., & Kingston, P. (1993). *Elder abuse: Concepts, theories and interventions*. London: Chapman & Hall.
- Biggs, S., Manthorpe, J., Tinker, A., Doyle, M., & Erens, B. (2009). Mistreatment of older people in the United Kingdom: Findings from the first National Prevalence study. *Journal of Elder Abuse and Neglect*, *21*, 1–14. doi:[10.1080/08946560802571870](https://doi.org/10.1080/08946560802571870).
- Bleich, A., Gekkopf, M., Melamed, Y., & Solomon, Z. (2005). Emotional impact of exposure to terrorism among young-old and old-old Israeli citizens. *American Journal of Geriatric Psychiatry*, *13*, 705–712.
- Bonanno, G. A. (2004). Loss, trauma, and human resilience: Have we underestimated the human capacity to thrive after extremely aversive events? *American Psychologist*, *59*, 20–28.
- Bonnie, R. J., & Wallace, R. B. (Eds.). (2003). *Elder abuse: Abuse, neglect, and exploitation in an aging America*. Washington, DC: National Academy Press.
- Böttche, M., Kuwert, P., & Knaevelsrud, C. (2012). Posttraumatic stress disorder in older adults: An overview of characteristics and treatment approaches. *International Journal of Geriatric Psychiatry*, *27*, 230–239. doi:[10.1002/gps.2725](https://doi.org/10.1002/gps.2725).
- Bremner, J. D. (2002). Neuroimaging studies in post-traumatic stress disorder. *Current Psychiatry Reports*, *4*, 254–263.
- Bremner, J. D., & Narayan, M. (1998). The effects of stress on memory and the hippocampus throughout the life cycle: Implications for childhood development and aging. *Development and Psychopathology*, *10*, 871–885.
- Byers, A. L., Yaffe, K., Covinsky, K. E., Friedman, M. B., & Bruce, M. L. (2010). High occurrence of mood and anxiety disorders among older adults: The National Comorbidity Survey Replication. *Archives of General Psychiatry*, *67*, 489–496. doi:[10.1001/archgenpsychiatry.2010.35](https://doi.org/10.1001/archgenpsychiatry.2010.35).
- Cardozo, B. L., Verqarq, A., Aqani, F., & Gotway, C. A. (2000). Mental health, social functioning, and attitudes of Kosovar Albanians following the war in Kosovo. *Journal of the American Medical Association*, *284*, 569–577.
- Cardozo, B. L., Bilukha, O. O., Crawford, C. A., Shaikh, I., Wolfe, M. I., Gerber, M. L., & Anderson, M. (2004). Mental health, social functioning, and disability in postwar Afghanistan. *Journal of the American Medical Association*, *292*, 575–585.
- Centers for Disease Control and Prevention (CDC). (2010). Adverse childhood experiences reported by adults – five states, 2009. *Morbidity and Mortality Weekly Report*, *59*, 1609–1613.
- Chaudieu, I., Norton, J., Ritchie, K., Birmes, P., Vaiva, G., & Ancelin, M. L. (2011). Late-life health consequences of exposure to trauma in a general elderly population: The mediating role of reexperiencing posttraumatic symptoms. *Journal of Clinical Psychiatry*, *72*, 929–935. doi:[10.4088/JCP.10m06230](https://doi.org/10.4088/JCP.10m06230).
- Chokkanathan, S., & Lee, A. E. (2005). Elder mistreatment in urban India: A community based study. *Journal of Elder Abuse and Neglect*, *17*, 45–61. doi:[10.1300/Jo84v17n02\\_03](https://doi.org/10.1300/Jo84v17n02_03).
- Chou, K. L. (2012). Childhood sexual abuse and psychiatric disorders in middle-aged and older adults: Evidence from the 2007 Adult Psychiatric Morbidity Survey. *Journal of Clinical Psychiatry*, *73*, e1365–e1371. doi:[10.4088/JCP.12m07946](https://doi.org/10.4088/JCP.12m07946).
- Collins, C., Burazeri, G., Gofin, J., & Kark, J. D. (2004). Health status and mortality in holocaust survivors living in Jerusalem 40–50 years later. *Journal of Traumatic Stress*, *17*, 403–411.
- Comijs, H. C., Penninx, B. W., Knipscheer, K. P., & van Tilburg, W. (1999). Psychological distress in victims of elder mistreatment: The effects of social support and coping. *Journals of Gerontology. Series B, Psychological Sciences and Social Sciences*, *54*, 240–245.

- Cook, J. M., & Elmore, D. L. (2009). Disaster mental health in older adults: Symptoms, policy, and planning. In Y. Neria, S. Galea, & F. H. Norris (Eds.), *Mental health and disasters* (pp. 233–263). New York: Cambridge University Press.
- Cook, J. M., Dinnen, S., & O'Donnell, C. (2011). Older women survivors of physical and sexual violence: A systematic review of the quantitative literature. *Journal of Women's Health (Larchmt)*, *20*, 1075–1081. doi:[10.1089/jwh.2010.2279](https://doi.org/10.1089/jwh.2010.2279).
- Cooper, C., Selwood, A., & Livingston, G. (2008a). The prevalence of elder abuse and neglect: A systematic review. *Age and Ageing*, *37*, 151–160. doi:[10.1093/ageing/afm194](https://doi.org/10.1093/ageing/afm194).
- Cooper, C., Manela, M., Katona, C., & Livingston, G. (2008b). Screening for elder abuse in dementia in the LASER-AD study: Prevalence, correlates and validation of instruments. *International Journal of Geriatric Psychiatry*, *23*, 283–288.
- Cooper, C., Selwood, A., Blanchard, M., Walker, Z., Blizard, R., & Livingston, G. (2009). Abuse of people with dementia by family carers: Representative cross sectional survey. *British Medical Journal*, *338*, b155. doi:[10.1136/bm.b155](https://doi.org/10.1136/bm.b155).
- Cooper, C., Selwood, A., Blanchard, M., Walker, Z., Blizard, R., & Livingston, G. (2010a). The determinants of family carers' abusive behaviour to people with dementia: Results of the CARD study. *Journal of Affective Disorders*, *121*, 136–142. doi:[10.1016/j.jad.2009.05.001](https://doi.org/10.1016/j.jad.2009.05.001).
- Cooper, C., Blanchard, M., Selwood, A., Walker, Z., & Livingston, G. (2010b). Family carers' distress and abusive behaviour: Longitudinal study. *British Journal of Psychiatry*, *196*, 480–485. doi:[10.1192/bjp.bp.109.071811](https://doi.org/10.1192/bjp.bp.109.071811).
- Daly, J. M., Merchant, M. L., & Joerger, G. J. (2012). Elder abuse research: A systematic review. *Journal of Elder Abuse and Neglect*, *23*, 348–365. doi:[10.1080/08946566.2011.608048](https://doi.org/10.1080/08946566.2011.608048).
- Darves- Bornoz, J. M., Alonso, J., de Girolamo, G., de Graaf, R., Haro, J. M., Kovess-Masfety, V., Lepine, J. P., Nachbaur, G., Negre- Pages, L., Vilagut, G., & Gasquet, I. (2008). Main traumatic events in Europe: PTSD in the European study of the epidemiology of mental disorders survey. *Journal of Traumatic Stress*, *21*, 455–462. doi:[10.1002/jts.20357](https://doi.org/10.1002/jts.20357).
- de Vries, G. J., & Olff, M. (2009). The lifetime prevalence of traumatic events and posttraumatic stress disorder in the Netherlands. *Journal of Traumatic Stress*, *22*, 259–267. doi:[10.1002/jts.20429](https://doi.org/10.1002/jts.20429).
- DiGrande, L., Perrin, M. A., Thorpe, L. E., Thalji, L., Murphy, L., Wu, D., Farfel, M., & Brackbill, R. M. (2008). Posttraumatic stress symptoms, PTSD, and risk factors among lower Manhattan residents 2–3 years after the September 11, 2001 terrorist attacks. *Journal of Traumatic Stress*, *21*, 264–273. doi:[10.1002/jts.20345](https://doi.org/10.1002/jts.20345).
- DiGrande, L., Neria, Y., Brackbill, R. M., Pulliam, P., & Galea, S. (2011). Long-term posttraumatic stress symptoms among 3,271 civilian survivors of the September 11, 2001, terrorist attacks on the World Trade Center. *American Journal of Epidemiology*, *173*, 271–281. doi:[10.1093/aje/kwq372](https://doi.org/10.1093/aje/kwq372).
- Dirkzwager, A. J., Bramsen, I., & van der Ploeg, H. M. (2001). The longitudinal course of posttraumatic stress disorder symptoms among aging military veterans. *Journal of Nervous and Mental Disease*, *189*, 846–853.
- Dong, X., Simon, M., Mendes de Leon, C., Fulmer, T., Beck, T., Hebert, L., Dyer, C., Paveza, G., & Evans, D. (2009). Elder self-neglect and abuse and mortality risk in a community-dwelling population. *Journal of the American Medical Association*, *302*, 517–526. doi:[10.1001/jama.2009.1109](https://doi.org/10.1001/jama.2009.1109).
- Dong, X. Q., Simon, M. A., Beck, T. T., Farran, C., McCann, J. J., Mendes de Leon, C. F., Laumann, E., & Evans, D. A. (2011). Elder abuse and mortality: The role of psychological and social wellbeing. *Gerontology*, *57*, 549–558. doi:[10.1159/000321881](https://doi.org/10.1159/000321881).
- Dong, X., Chen, R., Chang, E. S., & Simon, M. (2013). Elder abuse and psychological well-being: A systematic review and implications for research and policy- a mini review. *Gerontology*, *59*, 132–142. doi:[10.1159/000341652](https://doi.org/10.1159/000341652).
- Draper, B., Pfaff, J. J., Pirkis, J., Snowdon, J., Lautenschlager, N. T., Wilson, I., Almeida, O. P., & Depression and Early Prevention of Suicide in General Practice Study Group. (2008). Long-term effects of childhood abuse on the quality of life and health of older people: Results from

- the Depression and Early Prevention of Suicide in General Practice Project. *Journal of the American Geriatric Society*, 56, 262–271.
- Dube, S. R., Felitti, V. J., Dong, M., Giles, W. H., & Anda, R. F. (2003). The impact of adverse childhood experiences on health problems: Evidence from four birth cohorts dating back to 1900. *Preventive Medicine*, 37, 268–277.
- Duque, A. M., Leal, M. C., Marques, A. P., Eskinazi, F. M., & Duque, A. M. (2012). Violence against the elderly in the home environment: Prevalence and associated factors (Recife, State of Pernambuco). *Ciência e Saúde Coletiva*, 17, 2199–2208.
- Elmore, D. L., Brown, L. M., & Cook, J. M. (2011). Resilience in older adults. In S. M. Southwick, B. T. Litz, D. Charney, & M. J. Friedman (Eds.), *Resilience and mental health: Challenges across the lifespan* (pp. 135–147). New York: Cambridge University Press.
- Engdahl, B., Dikel, T. N., Eberly, R., & Blank, A., Jr. (1997). Posttraumatic stress disorder in a community group of former prisoners of war: A normative response to severe trauma. *American Journal of Psychiatry*, 154, 1576–1581.
- Erikson, E. H. (1950). *Childhood and society*. New York: W. W. Norton & Company.
- Franco, M. (2007). Posttraumatic stress disorder and older women. *Journal of Women and Aging*, 19, 103–117.
- Freeman, T., Kimbrell, T., Booe, L., Myers, M., Cardwell, D., Lindquist, D. M., Hart, J., & Komoroski, R. A. (2006). Evidence of resilience: Neuroimaging in former prisoners of war. *Psychiatry Research*, 146, 59–64.
- Freitag, S., Braehler, E., Schmidt, S., & Glaesmer, H. (2013). The impact of forced displacement in World War II on mental health disorders and health-related quality of life in late life – A German population-based study. *International Psychogeriatrics*, 25, 310–319. doi:10.1017/S1041610212001585.
- Friedman, L. S., Avila, S., Tanouye, K., & Joseph, K. (2011). A case-control study of severe physical abuse of older adults. *Journal of American Geriatric Society*, 59, 417–422. doi:10.1111/j.1532-5415.2010.03313.x.
- Gamito, P., Oliveira, J., Rosa, P., Morais, D., Duarte, N., Oliveira, S., & Saraiva, T. (2010). PTSD elderly war veterans: A clinical controlled pilot study. *Cyberpsychology, Behavior and Social Networking*, 13, 43–48.
- Garre-Olmo, J., Planas-Pujol, X., Lopez-Pousa, S., Juvinya, D., Vilalta-Franch, J., & Frailty and Dependence in Girona Study Group. (2009). Prevalence and risk factors of suspected elder abuse subtypes in people aged 75 and older. *Journal of the American Geriatrics Society*, 57, 815–822.
- Glaesmer, H., Brähler, E., Gündel, H., & Riedel-Heller, S. G. (2011a). The association of traumatic experiences and posttraumatic stress disorder with physical morbidity in old age: A German population-based study. *Psychosomatic Medicine*, 73, 401–406. doi:10.1097/PSY.0b013e31821b47e8.
- Glaesmer, H., Braehler, E., Riedel-Heller, S. G., Freyberger, H. J., & Kuwert, P. (2011b). The association of traumatic experiences and posttraumatic stress disorder with health care utilization in the elderly – A German population based study. *General Hospital Psychiatry*, 33, 177–184. doi:10.1016/j.genhosppsych.2010.12.006.
- Golier, J. A., Yehuda, R., Lupien, S. J., Harvey, P. D., Grossman, R., & Elkin, A. (2002). Memory performance in holocaust survivors with posttraumatic stress disorder. *American Journal of Psychiatry*, 159, 1682–1688.
- Golier, J. A., Yehuda, R., De Santi, S., Segal, S., Dolan, S., & de Leon, M. J. (2005). Absence of hippocampal volume differences in survivors of the Nazi Holocaust with and without posttraumatic stress disorder. *Psychiatry Research: Neuroimaging*, 139, 53–64.
- Golier, J. A., Harvey, P. D., Legge, J., & Yehuda, R. (2006). Memory performance in older trauma survivors: Implications for the longitudinal course of PTSD. *Annals of the New York Academy of Science*, 1071, 54–66.
- Hart, J., Jr., Kimbrell, T., Fauver, P., Cherry, B. J., Pitcock, J., Booe, L. Q., Tillman, G., & Freeman, T. W. (2008). Cognitive dysfunctions associated with PTSD: From World War II



- prisoners of war. *Journal of Neuropsychiatry and Clinical Neurosciences*, 20, 309–316. doi:10.1176/appi.neuropsych.20.3.309.
- Hauffa, R., Rief, W., Brähler, E., Martin, A., Mewes, R., & Glaesmer, H. (2011). Lifetime traumatic experiences and posttraumatic stress disorder in the German population: Results of a representative population survey. *Journal of Nervous and Mental Disease*, 199, 934–939. doi:10.1097/NMD.0b013e3182392c0d.
- Hayman, S. (2011). Older people in Canada: Their victimization and fear of crime. *Canadian Journal on Aging*, 30, 423–436. doi:10.1017/S0714980811000225.
- Hiskey, S., Luckie, M., Davies, S., & Brewin, C. R. (2008). The emergence of posttraumatic distress in later life: A review. *Journal of Geriatric Psychiatry and Neurology*, 21, 232–241. doi:10.1177/0891988708324937.
- Hyer, L., & Woods, M. G. (1998). Phenomenology and treatment of trauma in later life. In V. M. Follette, J. I. Ruzek, & F. R. Abueg (Eds.), *Cognitive-behavioral therapies for trauma* (pp. 383–414). New York: Guilford Press.
- Ikeda, M., Mori, E., Hirono, N., Imamura, T., Shimomura, T., Ikejiri, Y., & Yamashita, H. (1998). Amnesic people with Alzheimer's disease who remembered the Kobe earthquake. *British Journal of Psychiatry*, 172, 425–428.
- Ikin, J. F., Creamer, M. C., Sim, M. R., & McKenzie, D. P. (2010). Comorbidity of PTSD and depression in Korean War veterans: Prevalence, predictors, and impairment. *Journal of Affective Disorders*, 125, 279–286. doi:10.1016/j.jad.2009.12.005.
- Jia, Z., Tian, W., Liu, W., Cao, Y., Yan, J., & Shun, Z. (2010). Are the elderly more vulnerable to psychological impact of natural disaster? A population-based survey of adult survivors of the 2008 Sichuan earthquake. *BioMed Central Public Health*, 30, 10–172. doi:10.1186/1471-2458-10-172.
- Joffe, C., Brodaty, H., Luscombe, G., & Ehrlich, F. (2003). The Sydney holocaust study: Posttraumatic stress disorder and other psychosocial morbidity in an aged community sample. *Journal of Traumatic Stress*, 16, 39–47.
- Johannesen, M., & LoGiudice, D. (2013). Elder abuse: A systematic review of risk factors in community-dwelling elders. *Age and Ageing*, 42, 292–298. doi:10.1093/ageing/afs195. Epub 2013 Jan 22.
- Kang, H. K., Bullman, T. A., & Taylor, N. W. (2006). Risk of selected cardiovascular diseases and posttraumatic stress disorder among former World War II prisoners of war. *Annals of Epidemiology*, 16, 381–386.
- Kessler, R. C., & Wang, P. S. (2008). The descriptive epidemiology of commonly occurring mental disorders in the United States. *Annual Review of Public Health*, 29, 115–129. doi:10.1146/annurev.publhealth.29.020907.090847.
- Kilijanek, T. S., & Drabek, T. E. (1979). Assessing long-term impacts of a natural disaster: A focus on the elderly. *Gerontologist*, 19, 555–566.
- Kim, Y., Tsutsumi, A., Izutsu, T., Kawamura, N., Miyazaki, T., & Kikkawa, T. (2011). Persistent distress after psychological exposure to the Nagasaki atomic bomb explosion. *British Journal of Pharmacology*, 199, 411–416. doi:10.1192/bjp.bp.110.085472.
- Kimhi, S., Hantman, S., Goroshit, M., Eshel, Y., & Zysberg, L. (2012). Elderly people coping with the aftermath of war: Resilience versus vulnerability. *American Journal of Geriatric Psychiatry*, 20, 391–401. doi:10.1097/JGP.0b013e31821106b3.
- Kirmizioglu, Y., Dogan, O., Kugu, H., & Akyuz, G. (2009). Prevalence of anxiety disorders among elderly people. *International Journal of Geriatric Psychiatry*, 24, 1026–1033. doi:10.1002/gps.2215.
- Knaevelsrud, C., Bottche, M., & Kuwert, P. (2009). Long-term effects of civilian war trauma: epidemiological, sociological and psychotherapeutic aspects. *Abstract, 11th European Conference on Traumatic Stress*, Oslo.
- Knight, B. G., Gatz, M., Heller, K., & Bengtson, V. L. (2000). Age and emotional response to the Northridge earthquake: A longitudinal analysis. *Psychology and Aging*, 15, 627–634.

- Kohn, R., & Johnston, B. (2013). Abuse, elder. In F. F. Ferri (Ed.), *Ferri's clinical advisor* (2013th ed., p. 22). Philadelphia: Mosby Elsevier.
- Kohn, R., & Verhoek-Oftedahl, W. (2011). Caregiving and elder abuse. *Medicine and Health Rhode Island, 94*, 47–49.
- Kohn, R., Levav, I., Garcia, I. D., Machuca, M. E., & Tamashiro, R. (2005). Prevalence, risk factors and aging vulnerability for psychopathology following a natural disaster in a developing country. *International Journal of Geriatric Psychiatry, 20*, 835–841.
- Kohn, R., Vicente, B., Saldivia, S., Rioseco, P., & Torres, S. (2008). Psychiatric epidemiology of the elderly population in Chile. *American Journal of Geriatric Psychiatry, 16*, 1020–1028. doi:10.1097/JGP.0b013e31818a0e1c.
- Kosberg, J. I. (1988). Preventing elder abuse: Identification of high risk factors prior to placement decisions. *Gerontologist, 28*, 43–50.
- Krause, N., Shaw, B. A., & Cairney, J. (2004). A descriptive epidemiology of lifetime trauma and the physical health status of older adults. *Psychology and Aging, 19*, 637–648.
- Krienert, J. L., Walsh, J. A., & Turner, M. (2009). Elderly in America: A descriptive study of elder abuse examining National Incident-Based Reporting System (NIBRS) data, 2000–2005. *Journal of Elder Abuse and Neglect, 21*, 325–345. doi:10.1080/08946560903005042.
- Kun, P., Han, S., Chen, X., & Yao, L. (2009). Prevalence and risk factors for posttraumatic stress disorder: A cross-sectional study among survivors of the Wenchuan 2008 earthquake in China. *Depression and Anxiety, 26*, 1134–1140. doi:10.1002/da.20612.
- Kuwert, P., Spitzer, C., Rosenthal, J., & Freyberger, H. J. (2008). Trauma and post-traumatic stress symptoms in former German child soldiers of World War II. *International Psychogeriatrics, 20*, 1014–1018. doi:10.1017/S1041610208007035.
- Kuwert, P., Braehler, E., Freyberger, H. J., & Glaesmer, H. (2012). More than 60 years later: The mediating role of trauma and posttraumatic stress disorder for the association of forced displacement in world war II with somatization in old age. *Journal of Nervous and Mental Disease, 200*, 911–914. doi:10.1097/NMD.0b013e31826ba129.
- Lachs, M. S., & Pillemer, K. (1995). Abuse and neglect of elderly persons. *New England Journal of Medicine, 332*, 437–443.
- Lachs, M. S., & Pillemer, K. (2004). Elder abuse. *Lancet, 364*, 1263–1272.
- Lapp, L. K., Agbokou, C., & Ferreri, F. (2011). PTSD in the elderly: The interaction between trauma and aging. *International Psychogeriatrics, 23*, 858–868. <http://dx.doi.org/10.1017/S1041610211000366>.
- Laumann, E. O., Leitsch, S. A., & Waite, L. J. (2008). Elder mistreatment in the United States: Prevalence estimates from a nationally representative study. *Journals of Gerontology Series B: Psychological Social Sciences, 63*, S248–S254.
- Lee, K. A., Vaillant, G. E., Torrey, W. C., & Elder, G. H. (1995). A 50-year prospective study of the psychological sequelae of World War II combat. *American Journal of Psychiatry, 152*, 516–522.
- Lee, S., Tsang, A., Zhang, M. Y., Huang, Y. Q., He, Y. L., Liu, Z. R., Shen, Y. C., & Kessler, R. C. (2007). Lifetime prevalence and inter-cohort variation in DSM-IV disorders in metropolitan China. *Psychological Medicine, 37*, 61–73.
- Levine, J. M. (2003). Elder neglect and abuse. A primer for primary care physicians. *Geriatrics, 58*, 37–40, 42–44.
- Lindbloom, E. J., Brandt, J., Hough, L. D., & Meadows, S. E. (2007). Elder mistreatment in the nursing home: A systematic review. *Journal of the American Medical Directors Association, 8*, 610–616.
- Lindert, J., de Luna, J., Torres-Gonzales, F., Barros, H., Ioannidi-Kopolou, E., Melchiorre, M. G., Stankunas, M., Macassa, G., & Soares, J. F. (2013). Abuse and neglect of older persons in seven cities in seven countries in Europe: A cross-sectional community study. *International Journal of Public Health, 58*, 121–132. doi:10.1007/s00038-012-0388-3.

- Lis-Turlejska, M., Szumial, S., & Okuniewska, H. (2012). The present level of post-traumatic stress symptoms in a sample of child survivors of World War II. *Psychiatria Polska, 46*, 145–156.
- Lowenstein, A., Eisikovits, Z., Band-Winterstein, T., & Enosh, G. (2009). Is elder abuse and neglect a social phenomenon? Data from the First National Prevalence Survey in Israel. *Journal of Elder Abuse and Neglect, 21*, 253–277. doi:10.1080/08946560902997629.
- Luzny, J., & Jurickova, L. (2012). Prevalence of elder abuse and neglect in seniors with psychiatric morbidity- example from central Moravia, Czech republic. *Iranian Journal of Public Health, 41*, 27–32.
- Maercker, A., Forstmeier, S., Wagner, B., Glaesmer, H., & Brähler, E. (2008). Posttraumatische belastungsstörungen in Deutschland. ergebnisse einer gesamtdeutschen epidemiologischen untersuchung. *Nervenarzt, 79*, 577–586. doi:10.1007/s00115-008-2467-5.
- Matsuda, O. (2007). An assessment of the attitudes of potential caregivers toward the abuse of elderly persons with and without dementia. *International Psychogeriatrics, 19*, 892–901.
- McDonald, L., Beaulieu, M., Harbison, J., Hirst, S., Lowenstein, A., Podnieks, E., & Wahi, J. (2012). Institutional abuse of older adults: What we know, what we need to know. *Journal of Elder Abuse and Neglect, 24*, 138–160. doi:10.1080/08946566.2011.646512.
- McEwen, B. S., & Seeman, T. (1999). Protective and damaging effects of mediators of stress. Elaborating and testing the concepts of allostasis and allostatic load. *Annals of the New York Academy of Science, 896*, 30–47.
- McLaughlin, K. A., Berglund, P., Gruber, M. J., Kessler, R. C., Sampson, N. A., & Zaslavsky, A. M. (2011). Recovery from PTSD following Hurricane Katrina. *Depression and Anxiety, 28*, 439–446. doi:10.1002/da.20790.
- Nakash, O., Liphshitz, I., Keinan-Boker, L., & Levav, I. (2013). The effect of cancer on suicide among elderly holocaust survivors. *Suicide and Life-Threatening Behavior, 43*(3), 290–295. doi:10.1111/sltb.12015. Epub 2013 Feb 5.
- Naughton, C., Drennan, J., Lyons, I., Lafferty, A., Treacy, M., Phelan, A., O'Loughlin, A., & Delaney, L. (2012). Elder abuse and neglect in Ireland: Results from a national prevalence survey. *Age and Ageing, 41*, 98–103. doi:10.1093/ageing/afr107.
- Norris, F. H., Friedman, M. J., Watson, P. J., Byrne, C. M., Diaz, E., & Kaniasty, K. (2002). 60,000 Disaster victims speak: Part I. An empirical review of the empirical literature, 1981–2001. *Psychiatry, 65*, 207–239.
- Ohta, Y., Mine, M., Wakasugi, M., Yoshimine, E., Himuro, Y., Yoneda, M., Yamaguchi, S., Mikita, A., & Morikawa, T. (2000). Psychological effect of the Nagasaki atomic bombing on survivors after half a century. *Psychiatry and Clinical Neurosciences, 54*, 97–103.
- Olofsson, N., Lindqvist, K., & Danielsson, I. (2012). Fear of crime and psychological and physical abuse associated with ill health in a Swedish population aged 65–84 years. *Public Health I, 26*, 358–364. doi:10.1016/j.puhe.2012.01.015.
- Owens, G. P., Baker, D. G., Kasckow, J., Ciesla, J. A., & Mohamed, S. (2005). Review of assessment and treatment of PTSD among elderly American armed forces veterans. *International Journal of Geriatric Psychiatry, 20*, 1118–1130.
- Pesonen, A. K., Rääkkönen, K., Heinonen, K., Kajantie, E., Forsén, T., & Eriksson, J. G. (2007). Depressive symptoms in adults separated from their parents as children: A natural experiment during World War II. *American Journal of Epidemiology, 166*, 1126–1133.
- Petkus, A. J., Gum, A. M., King-Kallimanis, B., & Wetherell, J. L. (2009). Trauma history is associated with psychological distress and somatic symptoms in homebound older adults. *American Journal of Geriatric Psychiatry, 17*, 810–818. doi:10.1097/JGP.0b013e3181b20658.
- Qureshi, S. U., Kimbrell, T., Pyne, J. M., Magruder, K. M., Hudson, T. J., Yu, H. J., Schulz, P. E., & Kunik, M. E. (2010). Greater prevalence and incidence of dementia in older veterans with posttraumatic stress disorder. *Journal of the American Geriatrics Society, 58*, 1627–1633. doi:10.1111/j.1532-5415.2010.02977.x.
- Ravona-Springer, R., Beeri, M. S., & Goldbourt, U. (2011). Exposure to the holocaust and World War II concentration camps during late adolescence and adulthood is not associated with

- increased risk for dementia at old age. *Journal of Alzheimer's Disease*, 23, 709–716. doi:[10.3233/JAD-2010-101327](https://doi.org/10.3233/JAD-2010-101327).
- Reay, A. M., & Browne, K. D. (2001). Risk factor characteristics in carers who physically abuse or neglect their elderly dependants. *Aging and Mental Health*, 5, 56–62.
- Rees, S., Silove, D., Chey, T., Ivancic, L., Steel, Z., Creamer, M., Teesson, M., Bryant, R., McFarlane, A. C., Mills, K. L., Slade, T., Carragher, H., O'Donnell, M., & Forbes, D. (2011). Lifetime prevalence of gender-based violence in women and the relationship with mental disorders and psychosocial function. *Journal of the American Medical Association*, 306, 513–521. doi:[10.1001/jama.2011.1098](https://doi.org/10.1001/jama.2011.1098).
- Reis, M., & Nahmiash, D. (1998). Validation of the indicators of abuse (IOA) screen. *The Gerontologist*, 38, 471–480.
- Rintamaki, L. S., Wearver, F. M., Elbaum, P. L., Klama, E. N., & Miskevics, S. A. (2009). Persistence of traumatic memories in World War II prisoners of war. *Journal of the American Geriatrics Society*, 57, 2257–2262. doi:[10.1111/j.1532-5415.2009.02608.x](https://doi.org/10.1111/j.1532-5415.2009.02608.x).
- Robinson, S., Hemmendinger, J., Netanel, R., Rapaport, M., Zilberman, L., & Gal, A. (1994). Retraumatization of holocaust survivors during the Gulf War and SCUD missile attacks on Israel. *British Journal of Medical Psychology*, 67, 353–362.
- Rosenblatt, D. E., Cho, K. H., & Durance, P. W. (1996). Reporting mistreatment of older adults: The role of physicians. *Journal of the American Geriatric Society*, 44, 65–70.
- Rusby, J. S., & Tasker, F. (2009). Long-term effects of the British evacuation of children during World War 2 on their adult mental health. *Aging and Mental Health*, 13, 391–404. doi:[10.1080/13607860902867750](https://doi.org/10.1080/13607860902867750).
- Sachs-Ericsson, N., Gaymann, M. D., Kendall-Tackett, K., Lloyd, D. A., Medley, A., Collins, N., Corsentino, E., & Sawyer, K. (2010). The long-term impact of childhood abuse on internalizing disorders among older adults: The moderating role of self-esteem. *Aging and Mental Health*, 14, 489–501. doi:[10.1080/13607860903191382](https://doi.org/10.1080/13607860903191382).
- Sachs-Ericsson, N., Corsentino, E., Rushing, N. C., & Sheffler, J. (2013). Early childhood abuse and late-life suicidal ideation. *Aging & Mental Health*, 17, 489–494. doi:[10.1080/13607863.2012.758236](https://doi.org/10.1080/13607863.2012.758236). Epub 2013 Jan 21.
- Schofield, M. J., & Mishra, G. D. (2004). Three year health outcomes among older women at risk of elder abuse: Women's health Australia. *Quality of Life Research*, 13, 1043–1052.
- Schuitevoerder, S., Rosen, J. W., Twamley, E. W., Ayers, C. R., Sones, H., Lohr, J. B., Goetter, E. M., Fonzio, G. A., Holloway, K. J., & Thorp, S. R. (2013). A meta-analysis of cognitive functioning in older adults with PTSD. *Journal of Anxiety Disorders*, 27, 550–558.
- Sharon, A., Levav, I., Brodsky, J., Shemesh, A. A., & Kohn, R. (2009). Psychiatric disorders and other health dimensions among holocaust survivors 6 decades later. *British Journal of Psychiatry*, 195, 331–335. doi:[10.1192/bjp.bp.108.058784](https://doi.org/10.1192/bjp.bp.108.058784).
- Shaw, B. A., & Krause, N. (2002). Exposure to physical violence during childhood, aging, and health. *Journal of Aging and Health*, 14, 467–494.
- Shemesh, A. A., Kohn, R., Radomislensky, I., Brodsky, J., & Levav, I. (2008). Emotional distress and other health-related dimensions among elderly survivors of the Shoa living in the community. *Israel Journal of Psychiatry and Related Sciences*, 45, 230–238.
- Shields, L. B., Hunsaker, D. M., & Hunsaker, J. C., 3rd. (2004). Abuse and neglect: A ten-year review of mortality and morbidity in our elders in a large metropolitan area. *Journal of Forensic Sciences*, 49, 122–127.
- Shira, A., Palgi, Y., Ben-Ezra, M., & Shmotkin, D. (2010). Do holocaust survivors show increased vulnerability or resilience to post-holocaust cumulative adversity? *Journal of Traumatic Stress*, 23, 367–375. doi:[10.1002/jts.20524](https://doi.org/10.1002/jts.20524).
- Silove, D., Steel, Z., Bauman, A., Chey, T., & McFarlane, A. (2007). Trauma, PTSD and the longer-term mental health burden amongst Vietnamese refugees: A comparison with the Australian-born population. *Social Psychiatry and Psychiatric Epidemiology*, 42, 467–476.

- Sledjeski, E. M., Speisman, B., & Dierker, L. C. (2008). Dose number of lifetime traumas explain the relationship between PTSD and chronic medical conditions? Answers from the National Comorbidity Survey-Replication (NCS-R). *Journal of Behavioral Medicine, 31*, 341–349.
- Smith, E. (2012). *Violent crime against the elderly reported by law enforcement in Michigan, 2005–2009 (NCJ 238546)*. Washington, DC: The United States Department of Justice, Bureau of Justice Statistics.
- Soares, J. J. F., Barros, H., Torres-Gonzales, F., Ioannidi-Kapoulou, E. I., Lamura, G., Lindert, J., de Dios Luna, J., Macassa, G., Melchiorre, G. M., & Stankunas, M. (2010). *Abuse and health among elderly in Europe*. Kaunas: Lithuanian University of Health Sciences Press.
- Spiro, A., 3rd, Schnurr, P. P., & Aldwin, C. M. (1994). Combat-related posttraumatic stress disorder symptoms in older men. *Psychology and Aging, 9*, 17–26.
- Spitzer, C., Barnow, S., Völzke, H., John, U., Freyberger, H. J., & Grabe, H. J. (2008). Trauma and posttraumatic stress disorder in the elderly: Findings from a German community study. *Journal of Clinical Psychiatry, 69*, 693–700.
- Statistics Canada. (2011). *Family violence in Canada: A statistical profile*. Ottawa: Minister of Industry, Canadian Centre for Justice Statistics.
- Stein, D. J., Seedat, S., Herman, A., Moomal, H., Heeringa, S. G., Kessler, R. C., & Williams, D. R. (2008). Lifetime prevalence of psychiatric disorders in South Africa. *The British Journal of Psychiatry, 192*, 112–117. doi:10.1192/bjp.bp.106.029280.
- Steinmetz, S. K. (1998). *Duty bound: Elder abuse and family care*. Newbury Park: Sage Publications.
- Stöckl, H., Watts, C., & Penhale, P. (2012). Intimate partner violence against older women in Germany: Prevalence and associated factors. *Journal of Interpersonal Violence, 27*, 2545–2564.
- Strauss, K., Dapp, U., Anders, J., von Renteln-Kruse, W., & Schmidt, S. (2011). Range and specificity of war-related trauma to posttraumatic stress; depression and general health perception: Displaced former World War II children in late life. *Journal of Affective Disorders, 128*, 267–276. doi:10.1016/j.jad.2010.07.009.
- Sullivan, G., Vasterling, J. J., Han, X., Tharp, A. T., Davis, T., Deitch, E. A., & Constans, J. I. (2013). Preexisting mental illness and risk for developing a new disorder after hurricane Katrina. *Journal of Nervous and Mental Disease, 201*, 161–166. doi:10.1097/NMD.0b013e31827f636d.
- Tran, U. S., Glück, T. M., & Lueger-Schuster, B. (2013). Influence of personal and environmental factors on mental health in a sample of Austrian survivors of World War II with regard to PTSD: Is it resilience? *BMC Psychiatry, 13*, 47.
- Trollor, J. N., Anderson, T. M., Sachdev, P. S., Brodaty, H., & Andrews, G. (2007). Prevalence of mental disorders in the elderly: The Australian National Mental Health and Well-Being Survey. *American Journal of Geriatric Psychiatry, 15*, 455–466.
- Vandeweerdt, C., & Paveza, G. J. (2005). Verbal mistreatment in older adults: A look at persons with Alzheimer's disease and their caregivers in the state of Florida. *Journal of Elder Abuse and Neglect, 17*, 11–30.
- Verhoek-Oftedahl, W., Pearlman, D. N., & Coutu, B. J. (2000). Improving surveillance of intimate partner violence by use of multiple data sources. *American Journal of Preventive Medicine, 19* (4), 308–315.
- Verma, S., Orenge, C. A., Maxwell, R., Kunik, M. E., Molinari, V. A., Vasterling, J. J., & Hale, D. D. (2001). Contribution of PTSD/POW history to behavioral disturbances in dementia. *International Journal of Geriatric Psychiatry, 16*, 356–360.
- Viana, M. C., & Andrade, L. H. (2012). Lifetime prevalence, age and gender distribution and age-of-onset of psychiatric disorders in the Sao Paulo Metropolitan Area, Brazil: Results from the Sao Paulo Megacity Mental Health Survey. *Revista Brasileira de Psiquiatria, 34*, 249–260.
- Vida, S., Monks, R. C., & Des Rosiers, P. (2002). Prevalence and correlates of elder abuse and neglect in a geriatric psychiatry service. *Canadian Journal of Psychiatry, 47*, 459–467.

- Weintraub, D., & Ruskin, P. E. (1999). Posttraumatic stress disorder in the elderly: A review. *Harvard Review of Psychiatry*, 7, 144–152.
- Wells, J. E., Oakley-Browne, M. A., Scott, K. M., McGee, M. A., Baxter, J., Kokaua, J., & New Zealand Mental Health Survey Research Team. (2006a). Prevalence, interference with life and severity of 12 month *DSM-IV* disorders in Te Rau Hinengaro: the New Zealand Mental Health Survey. *Australian and New Zealand Journal of Psychiatry*, 40, 845–854.
- Wells, J. E., Oakley-Browne, M. A., Scott, K. M., McGee, M. A., & New Zealand Mental Health Survey Research Team. (2006b). Lifetime prevalence and projected lifetime risk of *DEM-IV* disorders in Te Rau Hinengaro: The New Zealand Mental Health Survey. *Australian and New Zealand Journal of Psychiatry*, 40, 865–874.
- Wiglesworth, A., Austin, R., Corona, M., Schneider, D., Liao, S., Gibbs, L., & Mosqueda, L. (2009). Bruising as a marker of physical elder abuse. *Journal of the American Geriatrics Society*, 57, 1191–1196. doi:10.1111/j.1532-5415.2009.02330.x.
- Wiglesworth, A., Mosqueda, L., Mulnard, R., Liao, S., Gibbs, L., & Fitzgerald, W. (2010). Screening for abuse and neglect of people with dementia. *Journal of American Geriatric Society*, 58, 493–500. doi:10.1111/j.1532-5415.2010.02737.x.
- Wolitzky-Taylor, K. B., Castriotta, N., Lenze, E. J., Stanley, M. A., & Craske, M. G. (2010). Anxiety disorders in older adults: A comprehensive review. *Depression and Anxiety*, 27, 190–211. doi:10.1002/da.20653.
- Wu, L., Chen, H., Hu, Y., Xiang, H., Yu, X., Zhang, T., Cao, Z., & Wang, Y. (2012). Prevalence and associated factors of elder mistreatment in a rural community in People's Republic of China: A cross-sectional study. *PLoS ONE*, 7, e33857. doi:10.1371/journal.pone.0033857.
- Yaffe, K., Vittinghoff, E., Lindquist, K., Barnes, D., Covinsky, K. E., Neylan, T., Kluse, M., & Marmar, C. (2010). Posttraumatic stress disorder and risk of dementia among US veterans. *Archives of General Psychiatry*, 67, 608–613. doi:10.1001/archgenpsychiatry.2010.61.
- Yang, Y. K., Yeh, T. L., Chen, C. C., Lee, C. K., Lee, I. H., Lee, L. C., & Jeffries, K. J. (2003). Psychiatric morbidity and posttraumatic symptoms among earthquake victims in primary care clinics. *General Hospital Psychiatry*, 25, 253–261.
- Yehuda, R., Kahana, B., Binder-Brynes, K., Southwick, S. M., Mason, J. W., & Giller, E. L. (1995). Low urinary cortisol excretion in Holocaust survivors with posttraumatic stress disorder. *American Journal of Psychiatry*, 152, 982–986.
- Yehuda, R., Halligan, S. L., Grossman, R., Golier, J. A., & Wong, C. (2002). The cortisol and glucocorticoid receptor response to low dose dexamethasone administration in aging combat veterans and holocaust survivors with and without posttraumatic stress disorder. *Biological Psychiatry*, 52, 393–403.
- Yehuda, R., Golier, J. A., Harvey, P. D., Stavitsky, K., Kaufman, S., Grossman, R. A., & Tischler, L. (2005). Relationship between cortisol and age-related memory impairments in Holocaust survivors with PTSD. *Psychoneuroendocrinology*, 30, 678–687.
- Yehuda, R., Harvey, P. D., Buchsbaum, M., Tischler, L., & Schmeidler, J. (2007). Enhanced effects of cortisol administration on episodic and working memory in aging veterans with PTSD. *Neuropsychopharmacology*, 32, 2581–2591.
- Yehuda, R., Harvey, P. D., Golier, J. A., Newmark, R. E., Bowie, C. R., Wohltmann, J. J., Grossman, R. A., Schmeidler, J., Hazlett, E. A., & Buchsbaum, M. S. (2009). Changes in relative glucose metabolic rate following cortisol administration in aging veterans with posttraumatic stress disorder: An FDG-PET neuroimaging study. *Journal of Neuropsychiatry and Clinical Neurosciences*, 21, 132–143. doi:10.1176/appi.neuropsych.21.2.132.
- Zhang, Z., Shi, Z., Wang, L., & Liu, M. (2012). Post-traumatic stress disorder, anxiety and depression among the elderly: A survey of the hard-hit areas a year after the Wenchuan earthquake. *Stress and Health*, 28, 61–68. doi:10.1002/smi.1403.