Untreated organized violence-related PTSD and its persistence throughout the lifespan: a theoretical synthesis

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Abstract: When psychological effects of severe trauma, such as organized violence and torture are left untreated, there is a high probability that these problems persist throughout the lifespan and exacerbate in old age. This paper reviews and analyses empirical evidence on adverse long-term effects of organized violence. A substantial proportion of survivors suffers from chronic, long-lasting mental and physical impairments. Research shows the long-term course of post-traumatic stress disorder (PTSD) as being characterized by possible remissions and relapses, with old age representing a particularly vulnerable period among victims who experienced organized violence earlier in life. Our own findings on former political prisoners in Romania confirm this pattern by showing that PTSD and other clinical conditions persisted, often over four decades, in a significant rate of the survivors, showing that psychological consequences evidently outlast the change of the political regime. Research has also revealed some factors and mechanisms of these symptom fluctuations across the lifespan. These results have far-reaching implications for understanding and treating persons affected by severe adversities. Future research should employ improved methods and available knowledge for broader and more thorough study of lifetime effects.

Keywords: PTSD, organized violence, old age, long-term impairments, symptom persistence and exacerbation

Introduction

Within the wide range of impending harm resulting from traumatic experiences, PTSD is seemingly the most common and has constituted the most frequent research focus in the field of psychotraumatology. It is classified as a pathological condition that develops as a response to an extremely threatening or catastrophic event or situation. Its symptoms embody representative consequences of such experiences that are clinically observable and measurable. There are three categories of symptoms and signs of according to the DSM-IV-TR: (1) recurrent and distressing re-experiencing (e.g., flashbacks and dreams), (2) avoidance and

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emotional numbing (e.g., persistent avoidance of stimuli and situations associated with the trauma, restricted affect, detachment, and a sense of foreshortened future), and (3) pervasive symptoms of increased arousal (e.g., hypervigilance, problems with sleep, anger, and concentration).

A substantial proportion of the present-day population in their sixties, seventies, and eighties was exposed to organized violence earlier in life and still suffer significant distress and PTSD, e.g. veterans, refugees, and prisoners of war (POWs), Holocaust survivors, and political victims of the former Communist dictatorships (e.g. Bramsen, 1995; Spiro, Schnurr & Aldwin, 1994). Nevertheless, earlier exposure to traumatic experiences has been commonly overlooked by studies on human development and aging (e.g. Baltes, 1987). Although some progress has been made, knowledge about the chronic consequences of organized violence manifesting in old age is still scarce. The scientific interest in this research area with a particular focus on the late posttraumatic sequelae has increased in recent years. Most findings are based the investigation of Holocaust survivors, POWs and veterans of the Second World War (WWII), Vietnam, and Korea, and, more recently, of the victims of former totalitarian and authoritarian regimes. They suggest that repeated, severe traumatic experiences have complex and long-lasting psychological consequences that persist into old age. Unfortunately, the last 5-6 years have hardly brought new insights in this area since the more recent large-scale wars / man-made disasters such as Yugoslav Wars, Rwandan ethnic conflicts and genocide, and the conflicts and regime abuses in Uganda do not completely allow a lifespan perspective. Anyway, there still are numerous notable historical events whose lifespan effects have not been subjected to systematic clinical-psychological investigation (e.g., the regime abuses in China, Ethiopia, and Central African Republic). The impracticability of a more systematic research in this area was mostly due to the high risks, lack of access, and / or resources involved.

Multiple and long-lasting disturbances have been recognized among the outcomes of exposure to organized violence. Mechanisms of perpetrating organized violence are known to invade a person's identity and dignity, and therefore frequently result in enclosed feelings of guilt and fear, damaged self-respect, and remorse (e.g. van der Kolk, 1996). Given the complexity of physical and psychological dysfunction following torture and other methods of organized violence, systematic categorization of the consequences of such experiences proves to be a difficult task (e.g. Bauer, Priebe, Haring & Adamczak, 1993). Moreover, since the introduction of PTSD in the DSM-III criteria, the two subsequent revisions have not operated substantial changes in the core criteria for posttraumatic symptoms, and the associated features solely account for the chronic complication of PTSD. Diagnostic issues further constitute a topic of debate among clinicians as well as an open question for clinical, developmental and neurobiological research and for the study of risk factors for PTSD. In particular, the psychological status of older victims of prolonged trauma still lacks accurateness.

The extensive review of empirical support for the co-occurrence of complex symptoms led to the conclusion that this was mainly the consequence of prolonged, repeated trauma that usually occurred during captivity, in, for example, prisons, concentration camps, or labor camps (Herman, 1997). It has been argued that traumatized individuals may suffer from various combinations of symptoms over time and that this pattern of symptoms reflects the adaptation to psychological trauma on the cognitive, affective and behavioral levels, particularly when trauma occurred early in life (van der Kolk, Weisaeth & van der Hart, 1996).

Steel et al. (2009) accomplished a systematic review and meta-analysis on the prevalence of PTSD and depression among refugees and other populations affected by torture and other traumatic events. One of their main findings was that the unadjusted weighted PTSD and depression prevalence rates across all surveys was 30.6% and 30.8% respectively. After the adjustment of methodological factors that explained a significant part of the PTSD and depression variability rates, the factors associated with PTSD were torture, cumulative traumatic exposure, time since conflict, and level of political terror. In any case, patients, war veterans, and civilian populations (nonrefugees / asylum seekers) from high-income countries exposed to terrorist attacks or involved in conflicts that took place more than 25 years ago have been excluded from the analysis. To my knowledge, there is no available work attempting a systematic review of late effects (into old age) of exposure to organized violence.

The origins of the research with survivors of organized violence

The first empirical studies that laid the foundation for the clinical research of prolonged traumatic exposure and brought some insight into its long-term consequences are those conducted on Holocaust survivors (Bastiaans, 1970; Eitinger, 1980; Hocking, 1970; Matussek, 1971; Venzlaff, 1966; von Baeyer, Häfner, & Kisker, 1964). Observed indications of distrust, social isolation, nightmares, irritability, anxiety, depression, somatization, memory and concentration disorders, and increased mortality delineated the main topics for discussion. Few of these researches referred to posttraumatic and comorbid disturbances in terms of psychological effects. Most of them describe symptoms related to the concept of "concentration camp syndrome" (Eitinger, 1971) and enduring personality changes. These clinical studies of Holocaust consequences later in life have consistently shown a worsening of the mental and physical health status as an effect of the exposure to severe and prolonged stress (Krystal, 1991).

Circumstances and effects of including PTSD in the diagnostic criteria

Later on, the clinical experience with Vietnam veterans (Horowitz & Solomon, 1975; Horowitz Wilner, Kaltreider & Alvarez, 1980) provided useful insight into the research of the effects of complex traumas, such as intrusive

thoughts, nightmares, flashbacks, social withdrawal, and hypervigilance. Age-related problems may also be aggravated in survivors of violence: more severe and frequent illness was noticed in aging Holocaust survivors (Hirschfield, 1977) and POWs (Beebe, 1975) as compared with non-traumatized individuals. This research led to the inclusion of the PTSD diagnosis in the DSM-III criteria in 1980 (Kinzie, Fredrickson, Ben, Fleck & Karls, 1984), as well as to the development of specific instruments for clinical assessment.

During the following years, much research has concentrated on the effects of combat in Vietnam veterans and emphasized negative psychological consequences that persist from youth through midlife (e.g. Boyle, Decoufle & O'Breien, 1989; Card, 1983; Davidson & Foa, 1993).

On the other hand, the study of torture victims has led some authors to the belief that "Torture is a human-made stressor resulting in category-specific diagnostic symptoms" and the narrowness of the PTSD concept has raised criticism and encouraged supplementary research of disorders and symptoms that were commonly associated with posttraumatic symptoms – depression, anxiety, dissociation, substance abuse and somatization (Allodi, 1991, p. 4).

Subsequently, the number of research projects aimed at emphasizing the prevalence of complex long-term psychological effects consisting of PTSD and other co-morbid disorders as a result of persecution and torture has grown worldwide (Allodi, 1991; Cervantes, 1989; Kinzie et al., 1984; Mollica, Wyshak, & Lavelle, 1987; Rasmussen & Lunde, 1980). These studies found that psychological distress and PTSD persist for many years in a great number of the survivors. As compared to the general population, an increased psychiatric morbidity was commonly observed in populations exposed to organized violence (de Girolamo & McFarlane, 1997). Symptomatic complications of the patients with trauma histories are usually somatic disorders, depression, anxiety, phobias, interpersonal sensitivity, paranoia, and dissociative symptoms.

More recent epidemiological findings in aged survivors

Data on the long-term consequences of organized violence into old age has been mainly made available by later studies on highly traumatized populations: Holocaust survivors and POW-s and combat veterans in the WWII, Vietnam or Korea. Irrespective of the particular type of assessment used to determine mental health consequences, most studies have found that survivors suffered from long-lasting impairment even later in life (Levav, 1997). In what follows, I review the state of the art across categories of victimization. A systematization of the main epidemiological findings in aged survivors exposed to confinement and combat during the WWII is offered in Table 1.

Holocaust survivors

More recent studies reported the persistence of posttraumatic symptoms and high rates of related co-morbid disorders in many victims who developed PTSD in the aftermath of the trauma, for 40-50 years after the end of WWII and up into old age (Joffe, Brodaty, Luscombe, & Ehrlich, 2003; Kuch & Cox, 1992; Robinson et al., 1990; Silow, 1993; Speed, Engdhal, Black, & Eberly, 1989; Yehuda et al., 1995; Yehuda, Kahana, Southwick & Giller, 1994).

Table 1. *Findings on PTSD rates and other comorbidities coming from newer studies of Holocaust survivors, veterans and POWs of WWII.*

	Study	Sample size / Mean age	Years since trauma	Lifetime PTSD (%)	Current PTSD (%)	Other symptoms and disorders
Holocaust studies	Joffe et al., 2003 * °	100 / 74.1	55	-	39	depression anxiety somatization disorder
	Kuch & Cox, 1992 * °	124 / 62.0	40	-	47	pain disorder depression
	Robinson et al., 1990	86 / 68.3	45	-	-	sleep disorders depression anxiety
	Yehuda et al., 1994 *	72 / 66.4	50	-	30	depression
	Favaro et al., 1999 *	51 / 71.5	50	35	26	depression dissociation
Studies of WWII veterans	Spiro et al., 1994 * °	809 / 69	45	-	6.7	-
	Rosen et al., 1989 *	42 / 65	40	54	27	affective disorders anxiety disorders
	Jongedijk et al., 1996	28 / 65.9	45	-	67 33˜	dissociation somatization
	McCranie & Hyer, 2000 ^	83 / 71.8	45	-	29	-

	Study	Sample size / Mean age	Years since trauma	Lifetime PTSD (%)	Current PTSD (%)	Other symptoms and disorders
	Blake et al., 1990 * ^	113 / 66.9	-	-	18.5	-
	Hovens et al., 1994 *	824 / 67	45	56	27	depression anxiety
	Falger et al., 1992 *	147 / 64.1	46	-	56	somatic disorders anxiety depression sleep disorders
	Speed at al., 1989	62 / 65.1	40	50	29	-
	Eberly & Engdahl, 1991 *	345 / 70	45	70.9	34.5	depression anxiety disorders
	Sutker et al., 1993 *	36 / 67	40	78	70	depression anxiety disorders
Studies of POWs in the WWII	White, 1983	30 / 60	37	-	85	sleep disorders
	Kluznik et al., 1986 *	188 / 63	40	67	47.6	anxiety disorders affective disorders alcohol dependence
	Page et al., 1991 *	747 / 60-69	38	-	-	depression

* controlled study and / or representative community sample
° these studies additionally showed an association between the severity of trauma and the severity of symptoms in old age
^ the same studies showed similar findings in veterans of the Korean war
˜ partial PTSD

The highest PTSD rate, five decades after the war, has been reported by Kuch & Cox (1992): 47% of the examined Holocaust survivors. Other diagnosed symptoms and disorders were depression, anxiety, somatization, sleeping disorders and dissociation. Similarly, Holocaust survivors have also been found to experience high emotional distress (Carmil & Carel, 1986; Levav & Abramson, 1984) sleep disorders (Rosen, Reynolds, Yaeger, Houck & Horowitz, 1991), dissociation (Yehuda et al., 1996), and depression (Yehuda et al., 1994).

POWs and war veterans

Various studies illustrate that POWs in WWII and the Korean War are suffering even forty or fifty years after their captivity under considerable physical restraints (e.g. Beebe, 1975; Klonoff, McDougall, Clark, Kramer & Horgan, 1976; Page, 1992). Research on POWs in WWII showed that half of the prisoners developed PTSD in the aftermath of trauma and that in more than a half of these the symptoms persisted for over forty years in old age (Eberly & Engdahl, 1991; Speed et al., 1989; Sutker, Allain, & Winstead, 1993). Other studies found even higher current PTSD rates, ranging between 50% and 85% (Goldstein, van Kammen, Shelly, Miller & van Kammen, 1987; Kluznick, Speed, Van Valkenburg & Magraw, 1986; White, 1983), as well as considerable levels of anxiety (Goldstein et al, 1987) and depression (Page, Engdahl, & Eberly, 1991). Highest PTSD prevalence rates with a lifetime prevalence of 54% and a point prevalence of 27 % to 67% have been reported in aged veterans of WWII by Hyer, Summers, Boyd, Litaker and Boudewyns (1996) and Jongedijk, Carlier, Schreuder and Gersons (1996). Moreover, greater cardiovascular risk in older WWII Dutch veterans with PTSD as compared with recent surgical and heart patients (Falger et al., 1992) and age-matched controls was detected.

The National Vietnam Veterans Readjustment Study (NVVRS; Kulka et al., 1990) found high PTSD prevalence rates (31% lifetime and current full and partial PTSD rates of 15.2% and 11.1%) among combat veterans almost 20 years after the war (Weiss et al., 1992). As a response to the controversies caused by the high rates of PTSD reported by the NVVRS study, Dohrenwend et al. (2006) revisited these data. The reanalysis using more rigorous norms still revealed prominent rates of 18.7% for lifetime and 9.1% for current PTSD in 260 NVVRS participants. There are also increasing indications coming from studies with Vietnam veterans that PTSD is an impairing condition also on the physical level. For example, two studies found high comorbidity rates between PTSD and pain: 80% self-reported chronic pain not diagnostically confirmed by physicians among PTSD veterans seeking treatment (Beckham et al., 1997) and a rate of 66% physician-diagnosed chronic pain problems in veterans diagnosed with PTSD (Shipherd et al., 2007). Moreover, PTSD treatment led to self-reported alleviations in pain during treatment that were maintained at four months follow-up (Shipherd et al., 2007).

Investigations of Korean veterans reported lower PTSD rates than in WWII veterans. The Department of Veterans Affairs study found current PTSD rates of 30% in WWII and 18.5% in Korean treatment-seeking veterans (Blake et al., 1990). A very large survey of 1210 WWII and Korean War veterans 45 years later has found lower PTSD prevalence ranging from 0% to 12% as a function of the diagnostic measure (Spiro et al., 1994).

Prospective research has also focused on the late effects of combat exposure, showing relatively few PTSD symptoms in survivors (Lee, Vailliant, Torrey & Elder, 1995). However, these results may be influenced by the participants' selection procedures. Earlier clinical investigations of Holocaust consequences late in life have underlined an increase in the severity of depressive and somatic symptoms as an outcome of the unsuccessful emotional processing of the trauma (Krystal, 1991). These findings have lately been supported by other studies, which have suggested that late life might be a period of increased vulnerability in the aftermath of severe trauma (Brodaty, Joffe, Luscombe & Thompson, 2004; Joffe et al., 2003).

Political persecution and torture

Research concerning posttraumatic consequences of organized violence has lately focused mainly on refugees. Valuable evidence came from the study of the displaced Cambodian persons who have been exposed to abuses of the Khmer Rouge regime throughout the period between 1975 and 1979 (Mollica et al., 1993). Frequent exposure to extensive trauma (e.g., forced labor, murder of a closely related person, torture, sexual abuses, and rape) and symptom scores indicating a 15% prevalence of PTSD and 55% of depression were reported.

In addition to the very relevant studies on refugees, the importance of research on victims of organized violence who continued to live in their countries of origin has been emphasized (Basoglu et al., 1994b) as the only way in which the effects of organized violence could be separated from the ones present in individuals living in exile. Despite severe exposure to trauma, the comparison between 55 tortured and 55 matched non-tortured former political prisoners in Turkey (Basoglu et al., 1994b), revealed ca. 20 years later moderate rates of lifetime and current PTSD prevalence (31% vs. 24% and 4% vs. 0%). More recently, increasing attention has been paid to psychological disturbances in the aftermath of political imprisonment specific to former East Germany (Bauer et al., 1993; Denis, Eslam & Priebe, 1997; Maercker & Schutzwohl, 1997). Long-term consequences such as PTSD, anxiety, depression, dissociation and vegetative complaints were found.

Our own survey examined 59 political prisoners (mean age 73.5 years; Bichescu et al., 2005) arrested during the communist regime in Romania, as compared to an age-matched sample of 39 persons. The PTSD lifetime prevalence was 54% and the PTSD prevalence at the time of investigation was 33%. Other psychiatric disorders such as somatization, substance abuse, depression, and

dissociative disorders were also common among the former political prisoners and were associated with PTSD symptoms.

Risk factors for exacerbating impairments in old age

The mechanisms that account for the high levels of distress seen in old survivors of organized violence still require investigation. Are there factors that contribute to the maintenance, aggravation, or reactivation of the mental health problems in elderly persons with a traumatic history? Is there an age-related vulnerability to additional stress burden because of earlier victimization? Several studies offer some insights that may orientate the search for answers to these issues.

However, most research in this area concentrated on the cases of delayed onset of PTSD and less on the mechanisms of maintenance and aggravation of symptoms. For instance, some case studies signalized the occurrence of delayed PTSD onset phenomenon in aged veterans several decades after combat (e.g. Hamilton, 1982; Pary, Turns & Tobias, 1986; Pomerantz, 1991). These phenomena were usually associated with situations such as physical or mental illness, retirement, loneliness, anniversaries, service meetings and other factors such as alcohol and drug abuse.

Many victims of severe persecution invest great energy in building new lives by concentrating on family and professional career, which was noticed in Holocaust survivors (Klein, 1972) and former political prisoners of the Communist regime (Bichescu, 2004). Aging usually goes along with a reduction of activity and personal and professional losses, e.g. retirement, children leaving home, death of friends and relatives. Critical life events, minor and major stressors could potentiate or reactivate symptoms in old age. Immediate precipitants could be minor stressors, e.g. situations that resemble the original trauma in a significant way. Greater losses such as retirement or death of someone close may trigger the delayed onset of PTSD symptoms by the exacerbation of repressed memories (Herman & Eryavec, 1994). The main research findings on factors affecting distress across the lifespan in victims of organized violence are presented below.

Age, severity of trauma, and adaptation strategies

One study (Brodaty et al., 2004) investigated possible factors of PTSD and psychological morbidity among Holocaust survivors. Variables such as age, gender, severity of trauma, extraversion, neuroticism values from the Eysenk Inventory (EPI-N, EPI-E), and defence mechanisms were included in the analyses. Advanced age, severity of trauma and adaptation strategies have emerged as important factors. Other studies have found trauma severity and younger traumatization age as predictors of PTSD (Yehuda et al., 1994, 1995). In the survey of WWII and Korean War veterans (Spiro et al., 1994), the level of exposure to

combat proved to be a decisive factor for the persistence of the disorder, since WWII veterans exposed to moderate or heavy combat had 13.3 times greater risk of PTSD symptoms.

The severity of trauma appears to be one of the most stable predictors of posttraumatic symptom severity across studies. According to the dose-effect relationships model (Mollica, McInnes, Poole, & Tor, 1998a), the cumulative frequency and severity of trauma correlates with the severity of posttraumatic psychological distress, so that beyond a certain threshold everyone would necessarily become affected. This concept became consecrated after the model was empirically confirmed on Cambodian survivors of mass violence (Mollica et al., 1998a) and Vietnamese former political prisoners (Mollica et al., 1998b).

Basoglu et al. (1994) studied factors related to long-term posttraumatic psychopathology of tortured political prisoners during the late 1970s and 1980s in Turkey. They found that PTSD was associated with negative effects of captivity in certain life areas (e.g., family, socioeconomic and professional status), psychosocial exposure to stress after captivity, severity of torture, and family history of psychiatric illness. The psychological preparedness for trauma (Basoglu et al., 1997) and certain appraisals (e.g., negative beliefs about the police and the state; Basoglu et al., 1996) seem to play a protective role against peritraumatic and posttraumatic distress. In aging victims of political detention Maercker, Beaducel, & Schützwohl (2000) found that initial reactions to trauma and trauma severity predict later psychopathology such as posttraumatic and dissociative symptoms. Our examination of factors of the PTSD and other psychological problems in Romanian victims of political detention is in line with the results of the studies on Turkish and German political prisoners: we found that the severity of trauma, the level of peritraumatic emotional distress and the subjection to persecutions after release from prison may account for the PTSD retention in old age and predict certain symptoms in the long-term, such as dissociation and anxiety (Bichescu-Burian, 2011). A newer follow-up study (Gäbler & Maercker, 2011) examined the association between revenge phenomena and PTSD approximately four decades after political imprisonment in East Germany. It revealed that revenge feelings and cognitions strongly predict the persistence of PTSD a long time after traumatization.

Political instability and conflicts

Some studies demonstrated that media reports of military conflicts can reactivate symptoms in older, asymptomatic veterans (Brockway, 1988; Long, Chamberlain, & Vincent, 1994), just as political turbulences may increase distress levels among Holocaust survivors (Eaton, Sigal, & Weinfeld, 1982). Some interesting findings come from studies that assessed reactions to the Gulf War in aging Holocaust survivors (Hantman, Solomon, & Prager, 1994; Solomon & Prager, 1992) and case studies of WWII veterans (Christenson, Walker, Ross &

Maltbie, 1981). Greater distress, anxiety, and exacerbation of posttraumatic symptoms were found.

Physical illness and hospitalization

Major stressors, such as illness, may generate similar effects. Increased coping problems (Baider & Sarell, 1984) and higher psychological distress (Baider, Peretz, & Kaplan De-Nour, 1992) were observed in Holocaust survivors suffering from cancer. Moreover, physical health deteriorations may trigger a delayed onset of PTSD (Hamner, 1994). Furthermore, clinical evidence indicated that Holocaust survivors often perceive hospitalization as highly traumatic, since such situations are intensively reminiscent of the concentration camp experiences (Danielli, 1994; Hirschfeld, 1977).

Psychological treatment

Investigations of Holocaust survivors in old age showed that depressive and psychosomatic symptoms may arise as a consequence of the post-traumatic symptoms, which in turn prevent a successful emotional processing of the experienced trauma (Krystal, 1991). Such results have been confirmed by newer findings suggesting that old age might represent a highly vulnerable period for individuals with a history of severe traumatization (Brodaty et al., 2004; Joffe et al., 2003). In our own survey on Romanian political prisoners (Bichescu et al., 2005), some prisoners of our group had already received psychological help from an aid organization in Romania. Participants who had never received treatment still had PTSD and higher rates of depression, whereas the lifetime PTSD prevalence in the two groups was similar. Moreover, survivors receive and benefit from treatment also decades later. For example, PTSD treatment led to symptom reduction and self-reported alleviations in pain during treatment that were maintained at 4 months follow-up (Shipherd et al., 2007). Our randomized clinical study on Romanian former political prisoners already showed signs of improvement shortly after trauma-focused therapy and significant improvements 6 months later (Bichescu, Neuner, Schauer, & Elbert, 2007).

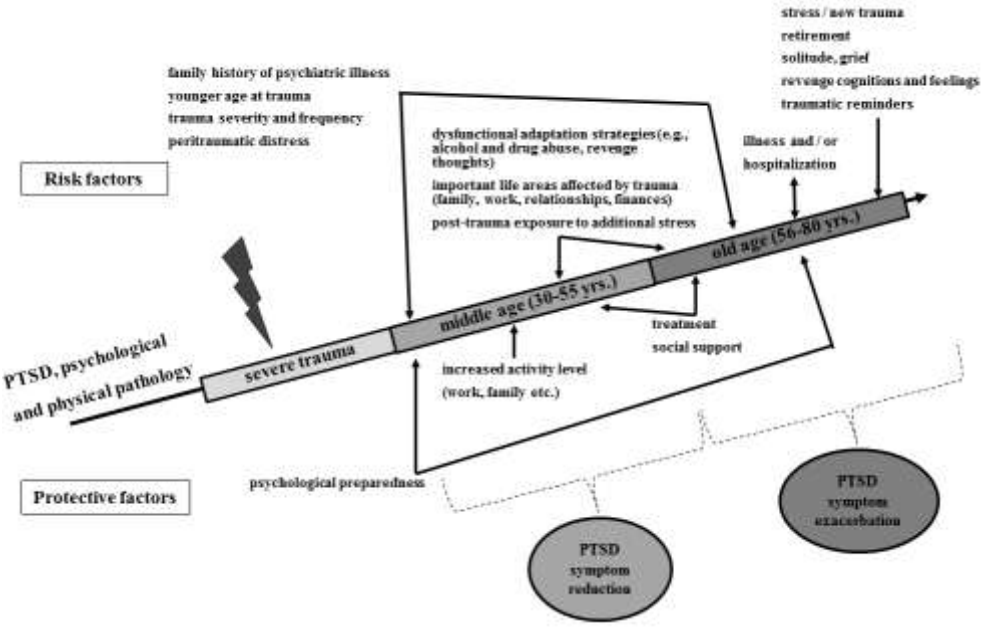
Figure 1 summarizes research findings on factors of PTSD and related conditions from early adolescence to late adulthood. It clearly indicates that more numerous risk factors are acting during old age than during middle age, whereas less protective factors intervene later in life.

Conclusions

Various findings on long-term effects of severe traumatization in old age are now available, since man-made catastrophes have unfortunately been common throughout human history. Studies of Holocaust survivors and veterans of the WWII showed serious long-term effects of war and combat experiences expressed in increased PTSD rates and psychological and physical illness. Later, these

findings have been confirmed by studies of aged Vietnam veterans. Controlled studies and case studies with political prisoners of abusive political regimes also proved high rates of lifetime and chronic PTSD, and a high prevalence of psychological and physical morbidity.

Figure 1. *Risk and protective factors influencing organized violence-related PTSD, psychological and physical pathology across the lifespan: a model presenting research findings and hypothesized aetiopathology.*



Overall, research has so far demonstrated that long lasting disturbances affect an important size of these survivors. In addition, the longitudinal course of chronic PTSD and other related health problems may be marked by remissions and relapses, so that they can become chronic and persist for decades and sometimes for a lifetime. This has a great societal impact, since the effects of organized violence may reach far beyond the directly affected individuals. For example, reviews of the literature found secondary and transgenerational effects of trauma in families of WWII and Vietnam veterans and POWS (Galovski & Lyons, 2004; Dekel & Goldblatt, 2008).

Prior studies suggest a complex interaction between personal variables and the onset and chronicity of PTSD. This could also explain the difficulty in verifying strong and reliable predictors. However, research has clearly demonstrated two realities: (1) unprocessed traumatic experiences and untreated PTSD may lead to exacerbation, reactivation, and / or onset of serious mental and physical

impairment; (2) due to certain circumstances and characteristics inherent to the aging process, old age is a period of increased psychological and physical vulnerability in severely traumatized individuals. Existent evidence should guide the further search for answers regarding factors of long-term symptom aggravation and the development of more effective prevention, support, and treatment strategies to counteract the increased risk for distress in aging victims of organized violence. In particular, present knowledge should be employed in the prognosis and treatment of the numerous victims affected by organized violence and their families. Outcomes on risk and protective PTSD factors deliver helpful insights into potentially helpful treatment interventions.

Further results have meanwhile emerged from more recent areas of mass conflicts. However, the long-time perspective offered by such studies still remains partial. For example, most veterans and other victims of the Yugoslav Wars (1991-1995 and 1998-2001) are not yet in their old age. This major set of conflicts in Europe with serious implications including genocide and other war crimes caused many deaths and severe mental and physical damage in surviving victims. Indeed, studies to date indicate that the effects are devastating (e.g., Nemcic-Moro, Franciskovic, Britvic, Klaric, & Zecevic, 2011). Similarly, other major man-made disasters such as the Rwandan genocide 1994 have generated further research in this field. Schaal, Dusingizemungu, Jacob, & Elbert (2011) conducted an investigation on orphans and widows of the genocide 10 to 15 years later. Forty-eight percent of the widows and 29% of the orphans still fulfilled PTSD symptom criteria 13 years after the genocide. Furthermore, increased prevalence rates of clinically significant depression (48% vs. 34%) and anxiety (59% vs. 42%), as well as suicidal tendency (38% vs. 39%) were reported. Cumulative traumatic exposure and poor physical health were the main PTSD predictors.

Future studies on these phenomena and other mass disasters will start to display the lifespan course of war-related distress up to more advanced age over the following decade. Hopefully longitudinal research and improved tools and methods will be employed in this area to extensively investigate and better explain protective and risk factors contributing to the maintenance and worsening of symptoms over time. Also, the information in this field should be complemented by data coming from randomized trials of trauma-focused psychotherapy with victims of organized violence.

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