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Traumatic experiences and Post Traumatic Stress Disorder among the German Elderly – Results of a Representative population based survey

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Conflicts of interest: none

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Abstract

Background: Only few population based studies on the epidemiology of Post Traumatic Stress disorders (PTSD) are available to date. Most of the existing studies are from the US. Against the background of the World War II, size and long-term effects of war related traumatic experiences in the German elderly population are of special interest. Nevertheless, population based data on this topic are lacking to date. Methods: The study examines the occurrence of traumatic experiences and the prevalence rates of PTSD according to DSM-IV and of partial PTSD in a randomly selected sample of the German general population aged 60 years and above (N=814) using self rating instruments. Results: Post Traumatic Stress Disorder (PTSD) is apparent in 3.4%, including Partial Post Traumatic Stress Syndromes, a total of 7.2% of the aged are involved. The most common individual symptoms resulting as consequences of war-induced trauma are avoidance of thoughts and feelings, sleep disturbances, distressing dreams and intrusive thoughts. The most frequently mentioned traumatic experiences were war-related trauma that the generation examined in this study experienced as children or in early adulthood during the Second World War. As a person's age increases, so do the prevalence of war-related traumatic experiences. There are some gender differences in traumatic experiences, but not in posttraumatic symptoms. Conclusion: The results underpin the importance of war related traumatic experiences from World War II in the German elderly population and their impact on the prevalence of PTSD over sixty years later.

Key Words: Post-traumatic stress disorder; Prevalence; Elderly, World War II, War Trauma, Germany, Symptoms
Introduction

Clinical experience with elderly patients has called attention to the fact that mental and somatoform disorders can be partially evaluated as post traumatic stress disorder which could be considered to result from a reactivation of traumatic experiences from their earlier life (Averill and Beck, 2000; Bramsen et al., 2006; Heuft, 2006.; Macleod, 1994; Maercker, 2002; Phifer and Norris, 1989, Radebold, 2003; Kuwert et al., 2009). These experiences can lie decades in the past. For the generation having experienced youth or young adulthood during the Second World War, war-related trauma such as bombings, military war service, displacement or war captivity play a central role. This generation experienced such war-related trauma in a phase of life that is not equipped with the ability to differentiate and cope with situations in comparison to the middle and later years of adult life, resulting in an increased vulnerability to post traumatic stress disorder (Maercker, 2002). These experiences had potential consequences for the further development of the personality – creating social contacts or developing coping strategies for the demands and burdens of life – which form the mental resources to be later mobilized for dealing with the aging process (Schneider et al., 2006). Advanced age itself can also involve accumulating burdens, experiences of loss, and developmental crises based on growing age-related risks for decreasing cognitive capabilities, a dwindling social network, and based on the loss of roles in life or on chronic illnesses. This can result in a depletion of psychological coping mechanisms, allowing earlier traumatic experiences to have effect again (Maercker, 2002). Being confronted with the losses of advanced age can also call up the remembrance of losses connected with earlier traumatic experiences (Solomon and Ginzburg, 1999). In addition, the feeling of being at the mercy of the irreversible and unavoidable changes occurring in advanced age can also cause trauma-reactivation, according to Heuft (2004).
More recent studies find a chronic Post Traumatic Stress Disorder (PTSD) that can be connected with events of the Second World War among up to 5% of all elderly persons (Hunt and Robbins, 2001; Maercker et al., 2008; Teegen and Handwerk, 2006; Teegen and Meister, 2000). But several studies indicate frequencies between 10% and 20% (Favaro et al., 2006; Fischer et al., 2006; Kuwert et al., 2008). Yet the studies dealing with this question are very heterogeneous concerning the samples taken (e.g. child soldiers, victims of flight and displacement, nurses from the war front, children growing up with no father, prisoners of war), the sampling procedure, the operationalization of trauma consequences and the conclusions drawn on their effects on advanced age. In addition, some previous studies refer to convenience samples of elderly persons – elderly individuals who responded to a call for participation in a study of their traumatic experiences in the war. Here one can ask to which extent the data can be generalized to apply to the entire elderly population, since either those not wanting to be confronted with earlier traumatic experiences are not contacted, or those only narrowly burdened and not interested in participating do not respond. Some studies were based on clinical samples (e.g. geriatric patients, psychiatric patients, psychotherapy patients). Thus their results are difficult to apply to the general population.

Our study aims to determine (1) the frequency of war-related and non-war-related potentially traumatic experiences in the elderly general population in Germany, (2) the prevalence rates of post traumatic stress disorder in the different age groups of the elderly and in both genders, and (3) the frequency of the different posttraumatic symptoms in the different age groups of the elderly and in both genders.

The data are from a large scale population-based representative study. Experienced trauma was not a criterion for inclusion in the study. The data determined here may thus provide a more realistic estimation of the prevalence of traumatization and PTSD in advanced age than
is the case with the recently available studies specifically dealing with trauma experiences or with clinical samples. Results of representative surveys across age groups have already been reported in other works (Maercker et al., 2008b).

**Methods**

**Subjects**

A representative sample of the German general population was selected with the assistance of a demographic consulting company (USUMA, Berlin, Germany). The area of Germany was separated into 258 sampling areas representing the different regions of the country. Households of the respective area and members of this household fulfilling the inclusion criteria (age at or above 14, able to read and understand the German language) were selected randomly. The sample was aimed to be representative in terms of age, gender, and education. A first attempt was made for 4,243 addresses, of which 4,118 were valid. If not at home, a maximum of three attempts were made to contact the selected person. 999 subjects (24.3%) refused participation, 543 subjects (13.2%) were not reached after four attempts, and 27 subjects (0.6%) refused participation because of severe health problems. All subjects were visited by a study assistant, informed about the investigation, and self-rating questionnaires were presented. The assistant waited until participants answered all questionnaires and offered help if persons did not understand the meaning of questions. 42 (1.0%) of the interviews were not useable. A total of 2,507 people between the ages of 14 and 92 years completed the self-rating questionnaires (participation rate: 60.9% of valid addresses) in 2005. The ethical guidelines of the international codex for the practice of social and marketing research of the European Society for Opinion and Marketing Research were observed.

The results for the frequency of traumatic experiences and for PTSD in the entire sample are presented by Maercker et al. (Maercker et al., 2008b). For the current study all persons were
chosen who were at least 60 years old at the time of the survey. And so the persons surveyed at this time belonged to a group born during the last war year at the latest and having experienced the war years and its consequences as children or young adults. This random sample encompasses 814 persons. Table 1 shows socio-demographic characteristics of the sample.

*** Table 1 about here ***

**Instruments**

**List with traumatic events:** Corresponding to the trauma list of the PTSD module (Perkonigg et al., 2000) of the Munich Composite International Diagnostic Interview (M-CIDI) (Wittchen and Pfister, 1997), eight potential traumatizing events are given (e.g. “you were the victim of a rape”; “... of a natural disaster”; “...you received strong bodily threats (as with a weapon), were attacked, injured, or tortured.”; “...you had horrible experiences during military war service”), and an open question about “another terrible event or a catastrophe”. Additional inquiry was also made concerning three further war-related events (“You were bombed”; “You were driven out of your homeland”; “A life-threatening illness has been determined in you”) the participants could respond to. After the presentation of these potential traumatic events, an item representing the DSM-IV A2 criterion (intensive fear, shock, and helplessness) was presented. And in the end questions concerning the most burdensome event (when several events were mentioned) were presented. If the participants had indicated several events, the follow-up questions and the determination of symptoms were related to the most burdensome event.

**Modified PTSD Symptom Scale:** The diagnostic criteria for PTSD according to DSM-IV were assessed with the Post Traumatic Symptom Scale (PSS) (Foa et al., 1993). The answers
referred to the occurrence in the last month on a 4-point scale from 0 (“not at all”), 1 (“once a week or more seldom”), 2 (2-4 times per week / half the time”) to 3 (“several times per week / almost always”). Some of the PTSD symptom criteria which, according to Breslau et al. (Breslau et al., 1999), show a negligible diagnostic prediction (sensitivity, specificity), were not included (criteria B3, B4, C2, C3, D2-D4), based on their screening character. The F-criterion (general DSM-IV restriction criteria based on normal life before trauma) was retained.

PSS has shown very satisfactory reliability and validity in American (Foa et al., 1993) and in German studies (Stieglitz et al., 2001). The abbreviated item selection from Breslau et al., which turned out to be the most effective item selection according to receiver operating characteristic analysis, defined positive PTSD cases compared to the complete symptom criteria list with 80% sensitivity, a specificity of 97%, a positive predictive value of 71% and a negative predictive value of 98% (Breslau et al., 1999). In our study the PSS shows very good internal consistency (Cronbach’s $\alpha = .93$).

**PTSD Diagnosis and partial PTBS:** A PTSD Diagnosis was determined according to the DSM-IV criteria by using the algorithm of the modified PTSD symptom scale according to Breslau (with the A1 and A2 criteria, B criteria at least 4 of 7 symptoms according to Breslau with scale values $\geq 2$ and F criteria). Since epidemiological and clinical studies are already accustomed to analysing partial (subsyndromal) distortion images [17], and since the DSM-IV criteria contain a more strict definition of PTSD than the more broadly defined ICD-10 description of PTSD [18] (Rosner and Powell, 2007), this study has also used the more broadly defined criteria for partial PTBS. In recent times the clinical impairment criterion has been especially examined, since its status for the mental burden resulting from PTSD is still uncertain (Breslau and Alvarado, 2007).
Two partial PTSD syndromes were specified:

**Partial PTSD I:** At least two symptoms from the symptom clusters B to D and the F-criterion (impairment criterion in the DSM IV) must be fulfilled (Schuetzwohl and Maercker, 1999) and **Partial PTSD II:** As with partial PTSD I, at least two symptoms from the cluster B to D are fulfilled, yet the F-criterion is not mentioned (Breslau and Alvarado, 2007).

**Statistical Analysis**

Statistical analyses were conducted with the SPSS 15.0 statistical package. Since Chi-Square-Tests require 80% of expected values being greater than 5, and our sample shows partially lower values, Fisher’s exact tests were applied to test the differences of traumatic events and of posttraumatic symptoms between the different age groups.

**Results**

*Frequency of Potentially Traumatic Experiences*

Table 2 shows the frequencies for the different events from the trauma list for the different age groups and both genders.

*** Table 2 about here ***

The percentage of persons who had experienced at least one trauma during their life is increasing across the age groups. The age group of those 75 and older shows the highest percentage (64.3) (Table 2). All age groups experienced more war-related trauma than civilian trauma; increasing age is associated with an increasing frequency of the different war-related traumatic experiences. Especially the two oldest age groups are prevalingly affected by war related traumatic events: 64.3% of the oldest age group reported at least one traumatic event,
59.7% of this age group reported at least one war related traumatic event (Table 2). Additionally, physical violence and witnessing traumatic events are experiences which show significantly increasing frequencies with increasing age.

In a second step, people were asked to indicate their worst traumatic experience. War and violence-related experiences are frequently evaluated as the worst traumatic experiences, even though these experiences took place decades ago. Except for displacement from home, the frequencies of all war and violence related events significantly increase over the age groups (see Table 3).

Beside the differences across the age groups, some gender differences were found. Interestingly, women are as often in contact with the different war related traumatic events as men. Only imprisonment/hostage is significantly more often experienced by men. Men experienced serious accidents, physical violence and life-threatening illnesses significantly more often (Table 2). Only life-threatening illnesses and imprisonment/hostage were significantly more often mentioned as the worst traumatic experience in men compared to women (Table 3).

*Frequency of Post Traumatic Stress Disorder in Advanced Age*

The results for individual symptoms of Post Traumatic Stress Disorder resulting from war related traumatic experiences, as the most frequently presented traumatic experiences in all age groups, are listed in table 4. With a prevalence of 25% across all age groups, avoidance of thoughts and feelings is the most frequent symptom cluster, followed by sleep disturbances, recurrent intrusive thoughts and an exaggerated startle response (Table 4). Differences in the
symptoms across the age groups and both genders were tested by means of Fishers exact tests. No significant differences were found.

***table 4 about here***

A PTSD within the last four weeks could be determined in 3.4% of the elderly. 1.0% showed a partial PTSD with impairment (Partial PTSD I), and 2.8% showed a partial PTSD without impairment (Partial PTSD II). In summary, 7.2% of those over 60 yrs. showed significant Symptoms of PTSD.

**Discussion**

The present study examines experiences of war-related and civilian trauma in a representative sample of elderly persons (60+ years of age) from the German general population (year of the study was 2005). This cohort experienced the Second World War during childhood and adolescence. Using established instruments, the prevalence of Post Traumatic Stress Disorders according to DSM-IV and according to partial syndromes was examined. The experience of trauma was not a selection criterion in the sampling procedure.

In the elderly German general population, war and violence-related traumatic events were experienced to a clearly greater extent than civilian trauma. Increasing age brought about an increasing proportion of persons having experienced war and violence-related trauma and having witnessed a traumatic event. Moreover, an age specific distribution of the traumatic events has to be stated: In the oldest age groups, nearly 45% indicated war efforts as traumatic experience, since these people are old enough to have been an active participant in the war. On the other hand, the differences between the age groups concerning displacement and eviction as a traumatic experience are less impressive, because the younger age groups were
affected as children while the oldest age groups were affected as young adults. The war related traumatic experiences are also frequently evaluated as the worst traumatic experience, although these events are decades in the past. Additionally, only life-threatening illness plays an important role as the worst traumatic experience. This finding agrees with the expectations, because health problems intensify in the elderly. In contrast with the war related experiences, which were a long time ago, illness related events are supposed to be experiences in old age, making them proxy experiences.

As mentioned above, in the group born at the end of the Second World War (youngest age group) there is a lower frequency of war related traumatic experiences than in the generation having consciously experienced war and its consequences as children or young adults. While Radebold (2006) estimates that about one-third of the generation of war children and youth had specific experiences of a mild nature, and a further third had experiences of extreme nature, this current study has found frequencies of nearly 20% with the 60-64 year old. But almost 40% of the 65-79 year old and 47% of the 70-74 year old, and almost two-thirds of those 75+ can remember war-related trauma.

Even though age differences in the traumatic experiences have been shown, no age differences in the posttraumatic symptoms were found. This seems to suggest that the people who were younger and experienced less traumatic events are equally affected by posttraumatic symptomatology. One possible explanation is that the younger children were more vulnerable in the war. Only few gender differences in the frequency of traumatic experiences were found in our study, especially for war related traumatic events. This is a very interesting finding, as men are first and foremost seen as those affected by direct acts of war. Nevertheless, there are no gender differences in recent the posttraumatic symptoms.
Post Traumatic Stress Disorder (PTSD) is apparent in 3.4% of the sample, including Partial Post Traumatic Stress Syndromes, a total of 7.2% of the elderly are affected. The study of Teegen and Meister (2000) revealed a prevalence rate of 5%. However, those data originate from a convenience sample based on a newspaper advertisement for a corresponding experiment. In the study of Maercker et al. (Maercker et al., 1999), prevalence of Post Traumatic Stress Disorder of about 4% was found. Here the victims of the Dresden bombing were surveyed. This survey of persons from the general population, which was not selected by a criterion of war trauma suffered, leads to a slightly lower estimation of Post Traumatic Stress Disorder. In a planned selection of persons with specific war experiences, it is possible that especially those participate who still feel this experience as very alive or who have a special sensitivity to this topic due to the enduring mental consequences. Moreover, the results are comparable to European studies from countries involved in the Second World War, like the Netherlands (van Zelst et al., 2003) or France (Legeai et al., 2009) or with a study from Australia (Creamer et al., 2001).

However, some shortcomings of the study need to be observed. War experiences do not have to have a direct connection to current PTSD symptoms. But they can increase the risk of incidences of new symptomatology after subsequent trauma (e.g. (Perkonigg et al., 2000)). Yet Maercker et al. (Maercker et al., 2008) found clearly lower prevalence rates for Post Traumatic Stress Disorder of 0.7% in a study of elderly in Switzerland – lower than in the elderly general German population studied here. This supports the idea that traumatization in childhood or youth in World War II leads to a higher prevalence, since war experiences were largely not present in Switzerland.

This study has several limitations. The restrictive trauma definition and the methods used in questionnaires for non-medical or psychological interviewers of a survey institute can be
considered methodically critical. Furthermore, retrospective studies have to consider
distortion of memory or memory problems whenever events in the distant past need to be
recorded or whenever the interviewees were infants during World War II. The exclusive
gathering of point prevalences of the disorders can also be discussed as a weakness of the
study. And last, as PSS according to Breslau includes only 10 of the 17 symptoms of PTSD
(as it was already mentioned in the methods section), one could assume that this could
influence the prevalence rates identified in the study. As mentioned above, our findings are
consistent with comparable studies, and the psychometric properties of the PSS according to
Breslau have now been confirmed in two other investigations (Siegrist and Maercker, in
press; Bohnert and Breslau, in press), making this objection seemingly negligible. On the
other hand, it is a well known fact that prevalence rates depend on the instruments used. For
PTSD this has been shown, for instance, by Spiro et al. (1994).

Based on the prevalences determined here, increasing symptom frequency with increasing age
has important psychiatric-psychotherapeutic consequences (Cook and O’Donnell, 2005;
Radebold, 2005; Tagay et al., 2009). The current results confirm the clinical experience of
several authors such as Radebold (2005), which states that a historical-biographical
perspective is necessary for understanding mental burdens among the elderly. On the other
hand, the prevalence rates of three to five percent also demonstrate that the generation of the
elderly having experienced war-related trauma nevertheless deals relatively little with trauma
consequences in advanced age. This speaks for salutogenetic developments and for the
potential of personal growth after trauma. The results of a study by Kuwert et al. (2008) in a
group of former child soldiers of World War II on the possible influence of the sense of
coherence in coping with war experiences underpin this presumption. Forstmeier et al. (2009)
found that the most important predictors for post traumatic growth among former child
soldiers from World War II were social recognition as survivors and an increased sense of
coherence. Viewed from a resource-oriented perspective, future studies should pay special attention to the psychosocial adaptations being activated. Important approaches for therapeutic efforts could result from this.

In summary, the German elderly population frequently experienced war and violence-related traumatic experiences in the Second World War. These experiences were mostly evaluated as the worst traumatic experiences in life and induced relevant traumatic symptoms and Posttraumatic Stress Disorders even 60 years later. These findings underpin the rife and long lasting consequences of wars.

Conflicts of interest: none

Description of authors’ role: Heide Glaesmer and Thomas Gunzelmann wrote the article and made the statistical analyses; Elmar Braehler and Andreas Maercker were responsible for designing the study, Simon Forstmeier assisted writing the article.

Reference List


