The Importance of Self-Worth in the Emergence of PTSD Symptoms:

Differences between age groups

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Date: 26th of June 2017

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Abstract

Experiencing a traumatic event can have severe consequences on one's health, such as the development of post-traumatic stress disorder (PTSD). On the basis of former literature it was assumed that different age groups (adults and the elderly) would differ in the severity of PTSD symptoms. Moreover, previous literature showed that one's world assumptions, especially the perception of self-worth, are related to the severity of PTSD symptoms. The goals of the current study were thus to determine if self-worth mediated the relationship between age groups and the severity of PTSD symptoms and if significant differences in severity of PTSD symptoms could be found between the two groups. The data that was used for the analysis was collected over a timespan of eleven years and contained 1165 respondents who looked for help at Centrum '45. To measure their perceived self-worth a subscale of the World Assumptions Scale by Janoff-Bulman (1989) was used. The severity of PTSD symptoms was measured by means of the Dutch Zelf Inventatisatielijst (ZIL). The amount of experienced traumatic events was examined by means of the LIFE questionnaire. Contrary to expectations, the conducted analyses showed that the elderly had more self-worth and displayed less arousal symptoms of PTSD than adults. However, the differences were small. Supportive to previous literature, self-worth turned out to be negatively related to the severity of PTSD symptoms. Besides, self-worth was found to mediate the relation between age groups and increased arousal.

Introduction

It has long been known that being exposed to traumatic events, such as combat, rape, the loss of beloved ones or natural disasters can have severe consequences on one's health. These events are known to be capable of evoking intense feelings of fear, helplessness, or horror in response to the perceived threat (Bisson, 2007). Traumatic events and loss are common in people's lives (World Health Organization, 2013). As the WHO states in a study of 21 countries, more than 10% of the respondents were found to have been witnesses of violence (21.8%) or accidents (17.7%), 16.2 % were exposed to war and 18.8% experienced interpersonal violence and 12.5% reported to have witnessed a trauma to a loved one (WHO, 2013). A sizeable proportion of victims recover from this experience within a couple of weeks or months, but others remain to display symptoms of PTSD even for years.

Experiencing traumatic situations can lead to a wide range of physical and mental health problems (Norris, Friedman, Watson, Byrne, Diaz, & Kaniasty, 2002). One of the most common psychological disorders occurring after traumatic events and disasters, is the post-traumatic stress disorder (PTSD) (Galea, Nandi, & Vlahov, 2005), which can be co-morbid with other psychiatric disorders, such as major depression, panic disorder, insomnia or generalized anxiety disorder (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995).

According to the DSM-5 criteria, individuals who directly experienced or witnessed traumatic events such as serious injury, sexual violation or events that are related to death are more likely to suffer from PTSD (Davey, 2015). The main characteristic symptoms of PTSD are re-experiencing the traumatic event, avoidance behavior and increased irritability. Re-experiencing the traumatic event can occur in forms of returning thoughts, nightmares, extreme physical reactions or mental stress upon remembering the trauma. Avoidance behavior is often displayed in the form of isolating behavior, avoiding thoughts and memories, the loss of interest and numbness. Problems with concentration or sleeping,

recklessness, aggression, hypervigilance and excessive startle reactions are indicating symptoms of increased irritability. Formal diagnoses are only to be made if these symptoms persist at least for one month and caused significant impairments in the functioning of everyday life (Davey, 2015).

A study of the WHO (2013) showed that 3.6% of the world's population, about 266.4 million people, have suffered from post-traumatic stress disorder (PTSD) in 2012. However, the number of PTSD cases varies among countries, as a result of the various types of traumatic events (Kessler, Sonnega, Bromet, Hughes, & Nelson, 1995). As de Vries and Olff (2009) found out in a study on the Dutch population, the lifetime prevalence of any potential trauma was 80.7%, and the lifetime prevalence of PTSD was 7.4%. Moreover, women and younger people turned out to be at higher risk of PTSD.

Just like the types of traumatic events, the factors determining the severity of PTSD symptoms can be diverse. As LoSavio, Dillon and Resick (2017) mention, different cognitive factors seem to be related to PTSD symptoms. Cognitive content (i.e., thoughts) and processes (i.e., handling thoughts about experienced events) or rumination (i.e. thinking about the causes and consequences of experiences repeatedly), for example, seem to be associated with the emergence of PTSD. Moreover, symptoms of PTSD are most successfully reduced by means of cognitive behavioral therapy (CBT), which implies that cognitive factors play a key role in developing PTSD symptoms (LoSavio, Dillon & Resick, 2017).

Janoff-Bulman (1989) states that people’s basic beliefs about the world are a possible explanation on how people respond to traumatic events. Parkes (1971, 1975) already used the term ‘assumptive world’ to refer to a "strongly held set of assumptions about the world and the self which is confidently maintained and used as a means of recognizing, planning and acting. [...] Assumptions such as these are learned and confirmed by the experience of many years" (1975, p. 132). Janoff-Bulman (1989) divided these assumptions into three major

categories. They concern (1) the perceived benevolence of the world, (2) the meaningfulness of the world, and (3) the worthiness of the self. The first category, the perceived benevolence of the world, in general gives indication on the extent to which people perceive the world and other individuals as negative or positive. The second category, the meaningfulness of the world, refers amongst other to how people perceive the distribution of outcomes; that means, how good versus bad outcomes are distributed among people. The three principles which are mostly referred to as being crucial for this category are justice, controllability (e.g. caution, foresight) and randomness. The third category, the worthiness of the self, is composed of one's perceived self-worth – the extent to which one conceives himself a good, moral or worthy individual –, one's self-controllability – the extent to which one sees himself acting in a precautious and appropriate behavior –, and one's perceived luck (Dekel, Solomon, Elklit, & Ginzburg, 2004).

Based on the supposition that people operate on the basis of their general assumptions about the world, Janoff-Bulman (1989) concluded that, these beliefs, just like all cognitive schemata, can be dramatically challenged by experiencing incisive traumatic events and play an important role in the response to a trauma.

A lot of research gives evidence for this suggestion to be true. As Dekel, Solomon, Elklit and Ginzburg (2004) state lower levels of self-worth and beliefs about the benevolence of people were associated with occurring PTSD symptoms after a combat related traumatic event. Nevertheless, they found that self-worth perceptions and levels of mental status were interrelated. Lilly and Pierce (2013) also discovered the two categories – self-worth and benevolence of the world - to be significantly related to PTSD symptoms and depression. In contrast to that, Mancini, Prati and Black (2011) identified self-views, but not assumptions about the world, to be a mediating factor of the effect of violent loss on PTSD symptoms and depression. Moreover, self-esteem and other self-related aspects were also found to be

coherent with PTSD symptoms (Mancini, Prati, & Black, 2011). In another study self-worth was even found to be the single best predictor of victim-non victim status, which indicates, that traumatic events are possibly changing believes about oneself (Janoff-Bulman, 1989). On the basis of the previously mentioned research of the relation between self-worth and PTSD, the two concepts are expected to be negatively associated.

As all of these studies show, especially low levels of self-worth turn out to be associated with higher levels of PTSD symptoms. This makes self-worth a particularly important aspect that seems to be related to the way individuals are responding to traumatic events.

In a study of Pelham and Swann (1989) self-worth was found to be composed of three factors. They argue that the positive or negative feelings people have about themselves, "their specific beliefs about themselves, and [..] the way they frame these beliefs" determine the amount of self-worth individuals perceive. Another concept of one's self-view that is already studied in various ways is self-esteem. Whereas some argue that self-esteem and self-worth are two different kind of self-views, others argue that self-worth and self-esteem can be considered to be one. Blascovich and Tomaka (1991, p.115) define self-esteem as "the extent to which one prizes, values approves or likes oneself". As Rosenberg, Schooler and Schoenbach (1989) state, perceptions of self-worth form the foundation for one's self-esteem and may also influence the way adults make assumptions about their world. On the basis of that, one could thus assume that self-worth is related to concepts that were already found to be associated with self-esteem too.

Evidence is found that different perspectives on one's perception of the self, such as self-esteem, develop related to different stages of age. As Robins, Trzesniewski, Tracy, Gosling, & Potter (2002) found out in a study on self-esteem levels across the lifespan, self-esteem was high in childhood, and then declines during adolescence, and increases stepwise

in adulthood, and finally decreases in elderly people. Considering the perception of self-esteem to be related to age, one could assume that also assumptions on self-worth could fluctuate across one's lifespan, as it is referred to as the foundation of self-esteem.

There is not much evidence on an effect of age on the emergence of PTSD, which makes it difficult to draw conclusions on the relation of aging and PTSD. However, it is important to also take the age of victims into account when examining predictive factors of PTSD. Age-related factors cannot only interact with psychiatric symptoms but also unfold implications for research and mental care. To find out if this is also the case for PTSD, the importance of age will be examined in the current study.

As Ditlevsen and Elklit (2010) found out there were differences in lifetime prevalence of PTSD symptoms among people, who experienced traumatic events. Their study showed the highest prevalence rates between the 40s and 50s, whereas the lowest prevalence rate was found amongst individuals in their 70s. Even though PTSD is described in detail referring to adulthood, there is a lack of information about the emergence of PTSD in the elderly (Cook, & O'Donnell, 2005). As Macleod (1994) found among World War II veterans, who were victims of traumatic events in young years, PTSD symptoms seemed to be suppressed by career- and family-related occupations during the middle ages and exacerbated with aging. These findings indicate that elderly people perceive their symptoms of PTSD more severe than adults and are expected to be reconfirmed in this study. The increase of PTSD symptoms between these two age groups could thus be indicating, that in between there is some age related aspect influencing the emergence of PTSD symptoms. As this development is compared to the fluctuation of self-esteem and thus self-worth during lifetime, it can be assumed that self-worth could be an aspect which is crucial for this change.

Yet, there is evidence for self-worth to be predictive of one's reaction to traumatic events and this is a reason to look at this relation more closely. As previous research showed,

self-worth is a meaningful aspect of one's world assumptions and manifold found to be associated with the level of perceived PTSD symptoms. Furthermore, self-esteem was found to be related to age, which is why it is assumed that self-worth would likewise be influenced by age. Therefore, differences in severity of PTSD symptoms between age groups are expected to be influenced by the differences in self-worth between the two groups. The resulting research questions are as follows:

Question 1: To what extent is self-worth related to age groups*?*

Question 2: To what extent is self-worth related to the perceived severity of PTSD symptoms?

Question 3: To what extent are age groups related to the perceived severity of PTSD?

Question 4: To what extent is the relation between age and the perceived severity of PTSD symptoms mediated by the worthiness of the self?

The following associations were expected to be found:

Hypothesis 1: Adults have higher perceptions of self-worth than elderly.

Hypothesis 2: Perceived self-worth is negatively associated with severity of PTSD symptoms.

Hypothesis 3: The elderly show more severe symptoms of PTSD than adults.

Hypothesis 4: The relationship between age and severity of PTSD symptoms is mediated by self-worth.

Methods

Participants

The secondary data, which will be used to be able to give an answer to the research questions, was retrieved from 1791 out-patients of Foundation Centrum ’45. This is a center located in the Netherlands, which specializes in the treatment and diagnosis of people who suffer from psychosocial consequences of traumatic events such as war and persecution. Most of the people, who requested help at Foundation Centrum ‘45 were diagnosed with PTSD and/or other depressive disorders. About 60% of these people were Dutch, mainly including police officers, military veterans and World War II survivors and their children. The other 40% consisted of refugees, who had either temporary or permanent refugee status or immigrated and could possess a Dutch nationality. Furthermore, the questionnaires were given to the respondents in Dutch, which required sufficient language proficiency. All respondents, who did not fill in the LIFE and the ZIL questionnaire, had to be excluded, so that the remaining data could be used for all the intended analyses. Moreover, respondents, who did not fill in their age, had to be excluded too. After excluding these respondents, further analyses contained data from n= 1165 respondents, involving 670 men and 495 women, with a distribution of 57.5% to 42.5%. Respondents’ age at the date of filling in the questionnaires, ranged from 21 to 88 years with a mean of 53.37 (SD 19.69). The three main regions of origin were the Middle East, Sub-Saharan Africa and Balkan Europe.

Materials

***Measures*.** To consider as much information as possible, the respondents were asked to fill in several psychological tests. However, this study will exclusively take two of them into account. Moreover, the respondents were asked about their demographics.

World Assumptions Scale (WAS). To be able to measure assumptions about the world, and by that the respondents' perceived self-worth, the World Assumption Scale (Janoff-Bulman, 1989) was used. The test-retest consistency was assessed with α's between .66 and .76. The questionnaire contains 64 items, which were asked to be answered on a 6-point Likert-scale from one to six ranging from totally disagree to totally agree. The questionnaire contains three main scales, which refer to the three concepts of Janoff-Bulman (1989). These are the (1) benevolence of the world, the (2) meaningfulness of the world and the (3) worthiness of the self. These were divided into eight subscales, which refer to (1.1) the benevolence of the world (BW), (1.2) the benevolence of people (BP), (1.3) justice (J), (2.1) controllability (C), (2.2) randomness (R), (3.1) self-worth (SW), (3.2) self-controllability (SC), (3.3) and luck (L). The subscale self-worth, containing four different items, is considered to be indicating how much participants view themselves as worthy individuals and will therefore be used to measure perceived self-worth among individuals. The items belonging to this subscale are for example: 'I often think I am not good at all' or 'I am very satisfied with the person I am'. Three of the four items were negatively formulated so that it could be controlled if respondents answered conscientiously. To get the sum score of the subscale, these three items had to be recoded and the scores had to be added to get a total score of self-worth. To get the total score of the worthiness of the self, all the items have to be summed up. The higher the score, the higher one's self-worth is assumed. In the current sample Cronbach's alpha of the third subscale (worthiness of the self) was found to be about $\alpha = .82$, while every alpha value above .80 ($\alpha > .80$) is considered to be optimal good.

Zelf Inventarisatielijst PTSD (ZIL) [Self-Report Inventory PTSD]. To examine the severity of PTSD symptoms among participants, the scores on the Zelf inventarisatielijst PTSD (Hovens, Bramsen, & Van der Plieg, 2009) will be taken into account. This

questionnaire contains 22 items, which had to be filled in on a 4-point Likert-scale, indicating to what extent they perceived symptoms in the past four weeks. The symptoms that are considered are symptoms of (1) re-experiencing traumatic events (α = .88), (2) avoiding or numbing of responsiveness (α = .85) and (3) increased arousal (α = .90). The sum score of all items is considered to indicate one's severity of PTSD symptoms. Zelst and de Beurs (2004) state, the ZIL was found to be a reliable method for measuring posttraumatic symptoms. The Cronbach's alpha of the current sample was found to be about .93, which is considered an optimal reliability value (α > .80). Examples of items are: 'I felt as if past events re-occurred again', 'I tried to avoid thoughts about past events' and 'I was easily irritable'.

LIFE. To examine the amount of traumatic events an individual has been through, the LIFE questionnaire was used. The LIFE consists of 22 life events, such as loss of valuable belongings, move house, serious injury or death of beloved ones. Respondents have to indicate whether they have been through any of these events with either a one, meaning someone has been through that event, or a zero, meaning that an individual has not. Examples of items are: 'Kind het huis uitgegaan' [engl. 'A child has moved out'] of 'Huwelijksproblemen' [engl. 'Marital problems'].

Procedure

The current study had a cross-sectional survey design. Because secondary data was analyzed in this study, there was no need for ethical approval of the data collection anymore. However, the participants had to fill in an informed consent form. All the respondents agreed that their data could be used for scientific research.

Analysis

To be able to gain data from the raw dataset, which could be analyzed to answer the proposed hypothesis, adjustments had to be made in the raw data. In this study the participants were divided into two groups which are distinguished by their stage of life. There

was one group which represented adulthood (group 1) and the other represented the elderly (group 2). The cut-off score for age was set at 65 years, because this is accepted by most developed countries as a legitimate age to describe someone as belonging to the elderly (WHO, 2002). On the basis of this cut-off score, 924 respondents were assigned to adults (group 1) and the remaining 241 were assigned to the elderly (group 2).

To be able to find the answer to the first hypothesis, 'Adults have higher perceptions of self-worth than elderly', an independent t-test was conducted. The independent variable was age group and the dependent variable was self-worth. This analysis gave information about whether there was a relation between the age of an individual and the self-worth they assign themselves.

The second hypothesis, 'Perceived self-worth is negatively associated with severity of PTSD symptoms', was analyzed by calculating the Pearson's correlation coefficient (r). The independent variable was self-worth and as the dependent variable perceived severity of PTSD symptoms was considered. This analysis was chosen to examine if there is an association between the two variables and if it is negative.

The third hypothesis, 'The elderly show more severe symptoms of PTSD than adults', was also tested by using an independent sample t-test. The independent variable in this case was age group and the dependent variable was perceived severity of PTSD symptoms.

Analyzing these associations was crucial for being able to examine the fourth hypothesis, 'The relationship between age and severity of PTSD symptoms is mediated by self-worth'. To check if self-worth could possibly mediate the association between the two variables age and perceived severity of PTSD symptoms, it was required to find correlations between all three variables. In case all of the three associations were significant, a mediation analysis, referring to Baron and Kenny (1986), could be conducted. First of all, based on the results of the first regression analysis it was assumed that there is a significant association

between age groups and self-worth. Secondly, a regression analysis was conducted, containing two models. The first model encompassed age groups and the severity, whereas in the second model self-worth was added, so that a mediating defect could be detected. A decrease in the relationship (regression coefficient beta) between age groups and perceived severity of PTSD symptoms (c > c') would indicate that self-worth can be seen as a mediating factor. At last, the Sobel test was used to test if self-worth significantly mediates the influence of age groups on severity of PTSD symptoms. At the end it was analyzed if the amount of traumatic events an individual has been through is influencing the relationships between the mentioned variables. For that, another regression analysis was used, considering the amount of traumatic events as another independent variable. The following models were thus analyzed:

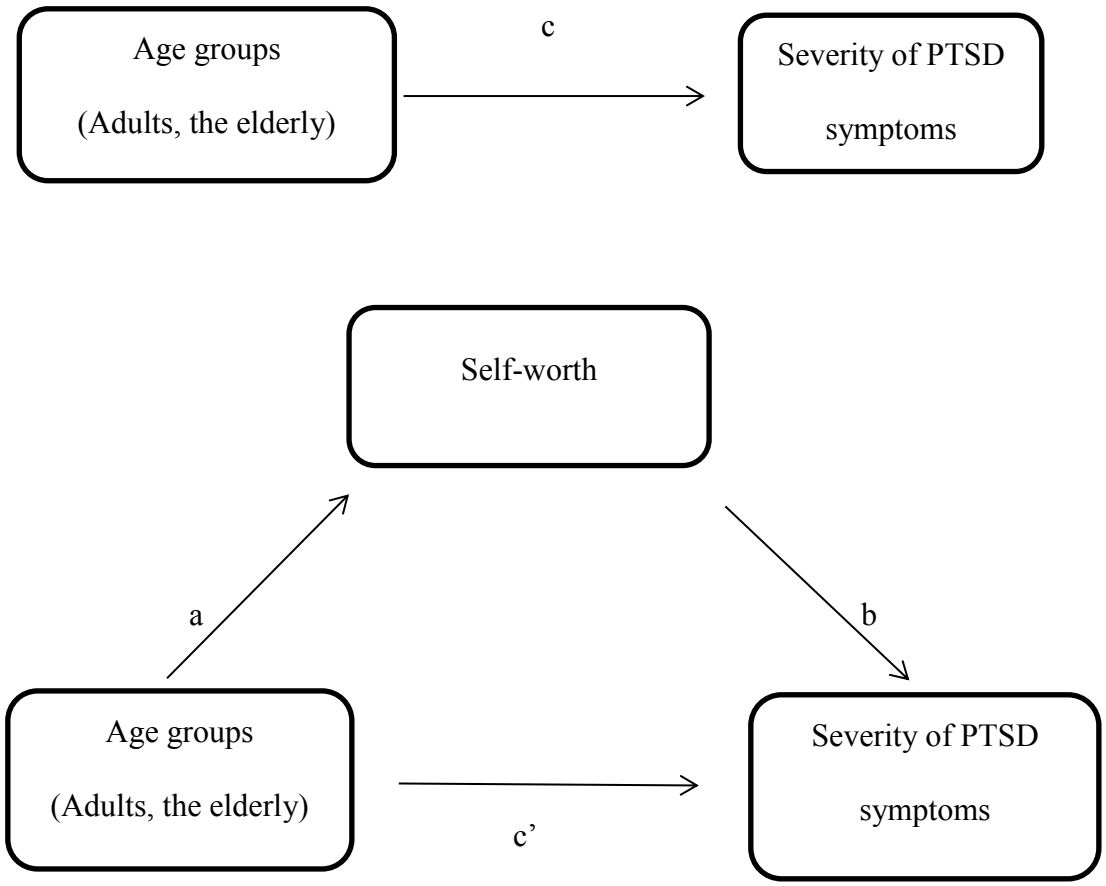

Figure 1. Mediation model of self-worth on the relation between age groups and the perceived severity of PTSD symptoms.

Results

Hypothesis 1

An independent sample t-test was conducted to examine if self-worth in adulthood (group 1) was higher than in the elderly (group 2). The results indicate that the elderly have significantly higher perceived self-worth than adults have (Table 1). However, the effect size turned out to be in between small (.2) and moderate (.5), indicating that about 66% of the adults have a lower self-worth than the average older person. Because the findings do not support the first hypothesis, but indicate the exact opposite, the first hypothesis was rejected.

Table 1

Comparisons of means on self-worth and severity of PTSD symptoms between adults and the elderly

		Total Group		Adults		The Elderly			
Measure	N	M	SD	M	SD	M	SD	F	Cohen's d
WAS Self-Worth	1083	46.22	9.96	45.45	10.09	49.31	8.77	6.06*	.39
ZIL Total Score	1063	50.87	14.10	51.18	14.17	49.62	13.81	0.64	.11
ZIL Re-experiencing	1123	13.40	4.78	13.27	4.77	13.91	4.80	0.01	.13
ZIL Avoiding, Numbing	1106	20.52	6.18	20.65	6.22	19.97	6.02	1.14	.11
ZIL Increased Arousal	1140	17.09	5.00	17.33	5.02	16.18	4.83	1.10*	.23

Note. *$p < .01$

Hypothesis 2

To examine if there is a negative association between perceived self-worth and the perceived severity of PTSD symptoms the Pearson Correlation coefficient was calculated. A significant negative association was found between the two variables ($r = -.370$, $n = 997$, $p <$

.01) indicating that the higher one's self-worth is, the lower the severity of PTSD symptoms is and vice versa. Thus, the second hypothesis was confirmed.

Hypothesis 3

An independent sample t-test was conducted to analyze if the severity of PTSD symptoms was different between the two age groups. PTSD symptoms were expected to be higher in the elderly than in adulthood. However, having a look at the total score on PTSD symptoms there was no significant difference found between adults and the elderly (see Table1). Therefore, the third hypothesis was rejected. However, by comparing the two groups in terms of the subscales of the ZIL questionnaire, a significant difference was found, referring to symptoms that belong to the category increased arousal. Having a look at increased arousal, adults suffered significantly more from increased arousal than the elderly do. The examined effect size of this relation is however just above small (.2). The difference between the means of the two age groups is thus considered to be small (See Table1).

Hypothesis 4

To examine if self-worth is mediating the relationship between age and the perceived severity of PTSD symptoms a mediation analysis in terms of a multiple regression analysis was conducted. Because it turned out that the sum of PTSD symptoms was not significantly related to age groups, the PTSD symptoms were split up in the mentioned categories. The regression analysis showed that there was a significant association between age groups and increased arousal. Moreover, self-worth was found to partially mediate the relationship between age groups and increased arousal (Table 2). However, age groups and self-worth are found to just explain 11% of the predictive variance of increased arousal. Also the Sobel-test showed that the mediation of the relationship between age groups and arousal was significant (Table 2). Besides, it was controlled if the amount of experienced traumatic events had any effect on the found relations. As the analysis showed, none of the found relations were

significantly influenced (Model 3, Table 2). This indicates that the amount of experienced traumatic events did not have influence on the investigated associations.

Table 2
Hierarchical regression analyses on the severity of PTSD symptoms

			Increased arousal	
	B	*SE B*	*b*	R^2
Model 1				.01**
Age groups	-1.43**	0.40	-0.11	
Model 2				.11**
Age groups	-0.82*	0.39	-0.06	
Self-worth	-0.16**	0.02	-0.31	
Model 3				.11
Age groups	-0.82*	0.39	-0.06	
Self-worth	-0.16**	0.02	-0.31	
Amount of traumatic events	-0.07	0.04	-0.05	
Sobel	Z	SE		
	-4.60**	.14		

Note. *$p < .05$; **$p < .0$

Discussion

In the current study, the relation between age groups and the severity of PTSD symptoms was examined. Besides, the influence of perceived self-worth as a mediator was taken into account. In the following, the current results will be summarized, discussed and compared to former literature. After that, strengths and weaknesses of the current study will be mentioned and recommendations for future research will be given. Finally, a conclusion on the whole study will be drawn.

To sum up, it turned out that there were differences between the two age groups and not just a direct but also an indirect effect of self-worth on the severity of PTSD symptoms was found. Contrary to what was expected, the elderly appeared to have higher perceptions of

self-worth and display less severe arousal, as part of PTSD symptoms than adults did. Furthermore, self-worth was examined to be negatively related to the severity of PTSD symptoms, meaning the higher one's self-worth, the less increased arousal was perceived. Besides, self-worth turned out to partially mediate the relation between age groups and arousal symptoms of PTSD.

The role of self-worth in PTSD symptoms

Comparing these findings to former literature the only thing that could be approved was that, self-worth is negatively related to PTSD symptoms, meaning the higher one's self-worth, the less increased arousal was perceived. This supports the findings of Janoff-Bulman (1989), Dekel, Solomon, Elklit and Ginzburg (2004), Lilly and Pierce (2013), Mancini, Prati and Black (2011) that were discussed at the beginning of the current study. It seems thus that self-worth plays a key role in the emergence of PTSD symptoms. Because the current study took several kinds of traumatic events from all kinds of people into account, it can be assumed that it does not matter which traumatic event an individual has experienced – the higher one's self-worth the less severe PTSD symptoms should be displayed.

Differences between age groups

Even if the current findings indicate relevant differences between the two age groups, there are a couple of aspects that lead to doubt about this assumption. As already mentioned, the current study showed differences between the two age groups referring to self-worth and increased arousal symptoms. Nevertheless, the differences between the groups did not appear to be huge. Because the varieties were so small, the strength of them was taken into account. Admittedly, it turned out that the difference between the two groups was smaller than moderate. Another reason that could be explanatory for all the outcomes is the big sample.

The more data a sample contains, the smaller the differences between groups have to be for results to be significant or for associations to become visible. This would support the assumption that the current findings do not display relevant relations. Therefore, it could be doubted if the (found) differences between age groups can be considered very relevant.

Considering the shortage of comparable literature supportive to the findings, explanations for these results are open to interpretation. First of all, the assumption that self-worth fluctuates similarly to self-esteem, could have been wrong. Rosenberg found (as cited in Pelham, & Swann, 1989) that especially in adulthood the divergence between the actual and the ideal self may peak, which can entail low perceptions of self-worth. This stands in exact contrast to what was found by Gosling, & Potter (2002), who found that self-esteem increases in adulthood. Perhaps, even if perceptions of self-worth form the foundation for self-esteem, self-worth develops differently during lifetime than self-esteem does or does not even develop in a pattern at all.

Another reason for the current finding could be that older people feel more worthy, because they have already been through all life stages and achieved goals, such as raising a family, working successfully until retirement or fulfilling personal dreams. On the contrary, adults are in the middle of their lives, where traumatic events can even more challenge one's self-worth and make individuals more vulnerable for changing these beliefs. Swann, Pelham and Chidester (1988) found that individuals who are highly confident about their beliefs are less likely to change their perceptions of the self. Also facing multiple stressors at once can lead to transitions in self-image (Lachmann, 2004) and probably get even worse after experiencing a traumatic event. Especially middle aged individuals between 45 and 64 are often facing mid-life stressors, because of the simultaneous roles they have to cope with (Lachmann, 2004). It could therefore be assumed that adults have a less stable perception of self-worth than the elderly do, which could be illustrative for adults reporting less self-worth.

Nevertheless, to be able to conclude that adults generally have lower perceptions of self-worth than the elderly, it would be necessary to compare adults who experienced traumatic events to those who did not. This differentiation seems worthy of future research.

The explanations already mentioned can also be applied to the (found) difference between the two groups referring to increased arousal, which was the only PTSD symptom that was higher in adults. Additionally it is possible that, based on their age, older people already had more time to cope with traumatic experiences than respondents in their adulthood stage. With time passing by, individuals could recover from the traumatic event. The two age groups could not be compared to each other on how long they are already coping with their experiences, but to draw conclusions on if this has an impact on the findings, this must have been taken into account. However, it was not part of the questionnaire to report the exact date of the traumatic event, which is why it cannot be controlled if this has effects on the outcomes of analyses.

Finally, the evidence that was found in former literature, indicating a possible mediation of self-worth (Mancini, Prati & Black, 2011) on the relation between age groups and the severity of PTSD symptoms, was confirmed. It appears thus that the age group one belongs to does not just directly influence the severity of PTSD symptoms but also indirectly by means of the amount of self-worth one perceives. Though the age group one belongs to and the self-worth one perceives account for less than 20% of explanatory variance of arousal symptoms. Certainly, age groups were found to have little explanatory value on the severity of PTSD symptoms in general so that it could be doubted if there the relation between the two variables is relevant for future research.

Weaknesses and strengths of the current study

The first weakness of the current study is the missing possibility to indicate the date of the traumatic event, which makes it impossible to draw conclusions on the importance of the time that passed since the traumatic event took place. Probably individuals who experienced a traumatic event 20 years ago already coped with it a lot and display less severe PTSD symptoms than an individual who has just been through a trauma a few weeks ago. To be able to control if this could have any impact on the severity of PTSD symptoms, this variable would be necessary. Another important shortcoming is that the respondents were asked to fill in the questionnaire only once so that no conclusions on causality can be drawn.

Besides, the LIFE, which was used to indicate the amount and the type of traumatic events, predominantly contains general life events and leaves little possibility to indicate specific events that can be typified traumatic in a more strict sense. It was, for example, not possible to report traumatic events, such as rape or persecution, or give details that were not included in the questionnaire. It could thus not be taken into consideration while analyzing the data if different types of trauma turned out to cause more severe PTSD symptoms or how severe they were perceived by the respondent. Moreover, a simple sum score was used, not taking into account the severity of different traumatic events. The death of a beloved one could for example have more severe PTSD symptoms at its consequence than marriage has.

A strong point of the current study is, that the reliability of all the measurement methods turned out to be optimal. Another strong aspect is the sample size. With about 1165 respondents, the found results are assumed to be very reliable. People from various kinds of countries were part of the study, which is why it can be assumed that the current study is comparable to other cross-cultural studies. However, the generalizability of the results will be discussed in the last section.

Recommendations for future research

To ensure that future research can prevent the shortcomings the current study contains, amongst others, measurement methods should be used that are stricter on reporting major traumatic events and general life events that could have been traumatic. By using a measurement method like that, one would be able to consider more specifically if the type or the number of traumatic events has an influence on how people respond to them. Moreover, questionnaires should contain variables that ask the respondent about when the traumatic event took place to be able to analyze if the time span between the event and the actual date is influencing the severity of PTSD symptoms.

Moreover, it is recommended to discover how self-worth and self-esteem are related to each other. This would make it easier to draw conclusions about self-worth based on earlier research on self-esteem. Also underlying constructs of self-worth should be discovered to be able to explain, what causes possible differences of perceived self-worth between age groups. Future research could also take into account more age groups, such as children and young adolescents to draw conclusions on the fluctuation of self-worth across the lifespan. It would thus be recommended to conduct experimental studies containing interventions so that conclusions on causality can be drawn.

Conclusion

In summary, it can be stated that the current study contributes to existing literature on predetermining factors of PTSD symptoms. On the one hand, as former literature suggests, self-worth was found to be a considerable predictor, referring to increased arousal symptoms, indicating that self-worth contributes to a moderate amount to the emergence of PTSD symptoms. On the other hand, the differences that were found between the two age groups referring to self-worth and increased arousal can be seen as indications for future research, but should not be generalized considering the weak relationships and the small differences

that were discovered. However, they give indications on a possible difference between age groups.

All in all, the current study forms a solid basis on the importance of self-worth in the occurrence of PTSD, but the small differences between the age groups are probably not very relevant.

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