

Post-traumatic Stress Symptoms among UN-soldiers and Relief Workers

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ABSTRACT – Objective: The article describes post trauma reactions among two groups of war exposed individuals. Degree of association with violent trauma is evaluated.

Methods: UN-soldiers and relief workers were assessed on trauma exposure, posttraumatic symptomatology and general psychopathology (relief workers only).

Results: Only 2.8 to 7.8% of the participants scored above cutoff on PTSD-related symptomatology (PTSS, IES-avoidance and IES-intrusion), with one exception: On the IES-intrusion scale 20.8% of the UN-soldiers were above cutoff. Among relief workers violence directed against others was consistently associated with psychopathology, both general and trauma related, while violence directed against the self was not related to any kind of psychopathology. Among UN-soldiers these relations were not consistent.

Conclusions: Differences in degree of trauma exposure cannot explain the results, and are thus indicative of underlying differences between the two groups along dimensions that determine trauma perception, personality or coping strategies. Further research is needed in order to establish such underlying differences.

Introduction

Research on posttraumatic stress disorder (PTSD) and trauma-related stress in general has revealed two general classes of findings. First, patients that fulfil diagnostic criteria for PTSD almost always also fulfil criteria for at least one other psychiatric disorder (co-morbidity model). Second, attempts at

predicting PTSD from traumatic experience alone have revealed that the stressor criterion only accounts for a certain amount of variance regarding onset and maintenance of PTSD. Current PTSD prevalence rates in studies among war-veterans range from 2% in the Centre for Disease Control (CDC 1988) Vietnam Experience Study to 70% in other studies (See McFarlane & Girolamo

1996, Davidson & Fairbank 1993). However, there also seems to be a dose-dependent relation between trauma exposure and trauma reaction, suggesting the importance of trauma exposure per se to be indisputable. Moreover, various trauma parameters have been suggested to be responsible for some of the explained variance in PTSD related symptomatology that trauma exposure can account for. One of these factors is exposure to violence. More specifically the importance of violence has been divided into violence directed against others as distinguished from violence directed against the self, a specification that is also preserved in the criteria for PTSD as they are defined by DSM-IV.

Trauma exposure bears relation to objective as well as to subjective facets. Although it is beyond the scope of this paper to discuss such theoretical aspects, several of those characteristics that bear relevance to post-trauma reactions, such as loss and lack of control, helplessness, threat, certain sights and sounds (often grotesque in character) and humiliation, are also connected to various subjective as well as objective aspects of violence, both in terms of violence against others and in terms of violence against the self. War-trauma will often involve exposure to both such types of violence. Assaultive violence have, by means of meeting the avoidance and numbing criterion, a most critical and limiting point in the diagnosis of PTSD, proven to be among those trauma characteristics that make people fulfil criteria for PTSD diagnosis (Breslau 2001). However, there exists difference between men and women in this respect. Breslau *et al.* (1999) found that there was a significant difference between men and women with respect to what percentage met the avoidance and the numbing criteria in the DSM-IV diagnosis after being exposed to assaultive violence

(violence against the self). However, there was no difference between men and women in the avoidance and numbing criteria after violence that was perceived as directed against others. Furthermore, the difference among men between assaultive violence (violence against self) and trauma to others (violence against others) was only minor compared to the difference that existed among women. Thus, one may expect that in a sample consisting primarily of men, the differential predictive value of violence against self versus others will practically disappear.

Previously trauma exposed individuals are generally at greater risk for developing PTSD than those not previously exposed. This pertains particularly to violence exposure, and has been found among several trauma groups (Breslau 2001) including Vietnam veterans (Kulka *et al.* 1990, Zaidi & Foy 1994, Bremner *et al.* 1993). Based on this and the above finding, we may expect that the degree of and type of violence exposure can reliably be regarded as a fairly good predictor of PTSD symptomatology, both full and partial.

Trauma exposure usually accounts for a limited amount of the total variance in PTSD symptomatology. This variability may be caused by interaction effects between trauma exposure, social factors and various personality characteristics (vulnerability model) or it may be explained by various facets of trauma exposure per se, resulting in different types of symptomatology (co-morbidity model) and symptom intensity. In the present study we are concerned with the co-morbidity model. Snow *et al.* (1988) found current prevalence of PTSD among Vietnam veterans to vary between 1.8% and 15% according to the operationalization of war zone stress. In the Centres for Disease Control (CDC 1988) study, it was found that

15% of a sample of 2,490 veterans experienced combat-related PTSD at some point. However, prevalence one month prior to assessment (current PTSD) was only 2.2%. This difference is interesting in relation to results found in the National Vietnam Veterans Readjustment Study (NVVRS) conducted by Kulka *et al.* (1990). They revealed a current PTSD prevalence of 15.2%, as contrasted to 2.2% in the Centres for Disease Control study. There may be methodological differences that are partly responsible for these results, such as variations in instruments of assessment. Nevertheless, such results point to a need for further research, preferably on different kinds of trauma exposed samples.

Regarding co-morbidity, a variety of disorders have been found to be co-present in PTSD samples. Somatization disorder (90.2%) and schizophrenia (37.0%) were found by Davidson *et al.* (1991) to be the two disorders most often present, while Shore *et al.* (1986) found generalized anxiety disorder (GAD) (76%) and depression (51%) to be the most frequently co-occurring diseases along with PTSD. In this article we are interested in the anxiety, depression and somatization dimensions of general psychopathology.

The purpose of the present study is to assess and evaluate trauma related psychopathology among two different groups, both having served in the former Yugoslavia. The following research questions were pursued. 1. How many will fulfil the criteria set for post-traumatic reactions as they are set by the Impact of Event Scale (IES) and the Posttraumatic Stress Scale (PTSS) (Holen *et al.* 1983) in two different groups of war-exposed individuals? 2. Will there be any difference in statistical association between trauma exposure defined as violence directed against the self and violence directed

against others and different types of pathology, both trauma related and non-trauma related? 3. Will there be any differences between the groups regarding this? 4. Will there be any difference between general psychopathology measured as SCL-90 and trauma related psychopathology? Based on previously presented results, we are interested in somatization, anxiety and depression as general pathological dimensions.

Methods

Subjects

Two samples participated in the study: 302 *relief workers* (RW) that participated in aiding services in Yugoslavia during the period from 1992 to 1996 and a sample that comprised every *Norwegian United Nations Military Observer* (UNMO) (UN-soldiers) that had served in the former Yugoslavia during the same period. The two groups were given the same set of questionnaires, except that UN-soldiers did not receive the SCL-90. In the UN sample all military divisions (army, sea and air force) were represented. Out of a total of 97 UN-soldiers, 72 persons returned the questionnaires (74.2%; age range 32-54 years, mean = 44.1 years). In the RW sample 141 persons participated (46.7%; age range 26-66 years, mean = 42.8 years). Duration of service (both groups taken together) ranged from one to 37 months (mean = 10.4 months).

In the RW sample 85.1% were men, and in the UN sample, only nine persons (12.5%) were women. Gender is therefore not treated as a variable in this study. Due to the low percentage of respondents in the RW sample, a frequency analysis on working categories was performed, in order to ensure that this

sample was not biased in any direction. This analysis revealed that 12.8% were out of work, and the rest of the participants were distributed between six different working categories in the following way: blue collar 17.0%, blue collar professional: 18.4%, white collar: 9.9%, white collar professional: 18.4%, chief position: 19.1 % and 15.6% were in independent occupations. Thus, with the exception of the white-collar category the sample does not seem to be particularly biased according to these working categories.

Instruments

Trauma exposure (TE). A measure of trauma exposure consisting of eight items was used. This questionnaire was based on the one used in the United Nations Interim Force In Lebanon (UNIFIL) study (Weisaeth 1993). The questionnaire taps information on war-related experiences and events witnessed by the individual. It consists of four questions that deal with traumatic violence directed against self (V/T-S) and four questions dealing with violence directed against others (V/T-O).

Post-traumatic Stress. The PTSS-10 (Holen *et al.* 1983) is a 10-item scale measuring posttraumatic stress symptoms of a general kind. The measure has good reliability characteristics. Cronbach's α was .90 among relief workers and .84 in the UN sample. The scale exists in two versions, one short and one standard. In the standard version the responses are graded from zero to seven, and in the short version the respondents simply check off whether the symptoms are present or not. The standard version of this scale was used among the relief workers and the short version among the UN soldiers. In order to be able to compare the groups, the symptom scale was recoded into the

dichotomized version for relief workers. Reliability analyses revealed a Cronbach's $\alpha = .90$ among relief workers (before dichotomization) and .84 in the UN sample. According to Holen *et al.* (1983) a score of six or higher on the dichotomized version may be regarded as an indication of pathological dysfunction. This was used as a cutoff value in order to evaluate presence of pathology.

Impact of Event Scale. The IES (Horowitz *et al.* 1979) is a 15-item scale designed to tap subjective event related stress. It consists of two subscales that tap trauma related intrusive- and avoidance symptomatology. The IES measure has good reliability characteristics. A score of 20 or higher on the IES-intrusion or on the IES-avoidance has been recommended as a cutoff value for evaluating pathological intrusion and avoidance. This value was used in the present study.

Symptom checklist 90-Revised (SCL-90). The SCL-90 (Derogatis 1977) is a checklist consisting of 90 questions on various symptoms. The SCL-90 comprises a general measure (The Global Severity Index (GSI)), and 10 sub-scales measuring specific pathological processes. Psychometric properties for the SCL-90 have been established as good (Derogatis & Clearly 1977). In this study the following scales were used: Somatization, Anxiety, Phobic Anxiety and Depression. Cutoff was set to 1.6 or higher.

Results

Results reveal that PTSD related symptomatology based on recommended cutoff values on the PTSS and IES scales occur in 2.8 to 7.8% among RW. Among UN-soldiers, however, it varies between 5.6% and 20.8%. Intrusion symptoms among UN-sol-

diers are quite high, nearly three times as high as among RW. (See table I).

Table II show that our prediction that there would be no difference in statistical association between V/T-O and the dependent measures versus V/T-S and the dependent measures did not receive support from the present data. The results also reveal a difference between the two groups. Among RW all correlations between V/To and the dependent measures are statistically significant, while only IES-avoidance is statistically significant with respect to V/T-S. Such a consistent difference between V/T-O and V/T-S is not found among the UN-soldiers (see table II).

Table II also reveal that non-trauma related psychopathology (somatization, anxiety, depression and phobic anxiety) is as strongly (and more strongly) related to V/T-O as is trauma-related psychopathology. V/T-S was not related to any of the SCL-90 measures. Furthermore, there was no difference in strength of association with V/T-O between the different SCL-90 measures.

There was no significant correlation between age and trauma exposure. Neither was there any significant correlation between age and any of the symptom variables. These associations were near zero, thus making it unnecessary to check further on any specific age group.

Table I
Number of persons who qualify for PTSD diagnosis or other pathology in percent

Variable	RW (N = 141)		UN (N = 72)	
	Total	Percent	Total	Percent
PTSS (≥ 6)	4	2.8	4	5.6
IES-intrusion (≥ 20)	11	7.8	15	20.8
IES-avoidance (≥ 20)	5	3.5	4	5.6
SCL-Somatization (≥ 1.6)	3	2.1	-	-
SCL-Anxiety (≥ 1.6)	3	2.1	-	-
SCL-Depression (≥ 1.6)	4	2.8	-	-
SCL-Phobic anxiety (≥ 1.6)	1	.7	-	-

RW = Relief worker.
UN = UN soldier.

Table II
Correlations between trauma exposure and dependent variables among RW and UN-soldiers

Variable	SOM	ANX	DEP	FOB	PTSS	IES I	IES A
V/T S-RW	.12	.26	.01	.14	.11	.08	.55**
V/T O-RW	.36**	.43**	.32*	.47**	.33*	.31*	.40*
V/T S-UN	-	-	-	-	.14	.17	.28*
V/T O-UN	-	-	-	-	.20	.28*	.33*

V/T S = Violence or threat directed against self.

V/T O = Violence or threat directed against others.

SOM = Somatization, ANX = Anxiety.

DEP = Depression, FOB = Phobic anxiety, PTSS = Posttraumatic Stress Scale.

IES = Impact of Event (total score), IES I = Intrusion, IES A = Avoidance.

UN-soldiers were significantly more trauma exposed than RW ($p < .001$), both on measures pertaining to violence against others and on measures pertaining to violence against the self.

Discussion

There are four main results in the present study. First, relatively few of those that participated in this study revealed IES and PTSS scores high enough to qualify for trauma related pathology. There was only one exception: A quite high percentage of UN-soldiers revealed intrusive symptoms (20.8%). Second, only V/T-O was significantly associated with the dependent measures among RW. Thus, our prediction that the difference in association with dependent measures between V/T-O and V/T-S would disappear in a sample consisting primarily of men did not receive support. Third, the results also revealed a difference between UN-soldiers and RWs regarding statistical association between trauma exposure and PTSD related pathology. Fourth, there was no difference between general psychiatric pathology, measured as SCL-90, and trauma related pathology among RW.

A quite low percentage of informants were revealed to have PTSD related pathology in this study. This is in accordance with some other studies on PTSD prevalence among war-exposed individuals (CDC 1988), but much lower than what was found by Kulka *et al.* (1990). It has been suggested that by assessing PTSD by using DIS (as was done by Kulka *et al.* 1990), only 25% of the cases were identified (see Davidson & Fairbank 1993). In the CDC (1988) study multiple measures were used. Thus, it is important to keep in mind that methodological differences

may complicate attempts at making comparisons between different studies.

Our data also reveal one exception: UN-soldiers are quite high on intrusion symptoms (20.8%). One explanation for this may be that UN-soldiers were more trauma exposed than RW. However, due to the fact that the number of informants that scored above cutoff was approximately the same for both groups on both IES-avoidance and the PTSS scale, this is not a very plausible explanation. It is more reasonable to assume that UN soldiers are high on IES-intrusion for different reasons. One possibility is that the IES intrusion scale does not measure post trauma reactions in the final stage, but rather some process between trauma exposure and the final trauma reactions. The fact that so few UN soldiers are above cutoff on the PTSS scale may, along the line of Creamer *et al.* (1992), indicate that UN soldiers are more capable of processing traumatic memories, thus lowering the chances of developing PTSD related psychopathology. Such processes may include various ways of coping with trauma as well as other personality dimensions.

Among RW V/T-O were positively associated with all symptom scales, while V/T-S was only associated with the avoidance scale. Among UN-soldiers this difference was not so consistent. Thus, our prediction that the difference between V/T-O and V/T-S would disappear in a sample consisting primarily of men did not receive support. Thus, the lack of differential predictive value of V/T-O versus V/T-S among men found by Breslau *et al.* (1999) is not replicated by the present results. It must be remembered, nevertheless, that we had a measure on avoidance only, and no measure on numbness. However, what is interesting is that we found V/T-O (witnessed violence) to be positively correlated with the dependent

measures (IES-avoidance, IES-intrusion and PTSS), while Breslau *et al.* (1999) found assaultive violence (T/V-S) to be associated with avoidance and numbness. Thus, a difference with regard to gender is preserved by the present results, only the difference seems to be related to whether it is V/T-S or V/T-O that is the type of violence associated with symptomatology.

The results in the RW sample may indicate that exposure to visual trauma is more consistently related to psychopathology than violence that has been directed or has been experienced as directed against the self. In the RW sample V/T-S is significantly related to IES-avoidance. This indicates that V/T-S may make people withdraw from reminders or triggers, but is not necessarily a determining factor for the development of intrusive or other PTSD related symptomatology.

The differences that were revealed between RW and UN-soldiers may suggest that the two groups have been exposed to trauma in different ways. The results reveal UN-soldiers to be significantly more trauma exposed than relief workers on all items, both the V/T-O items and the V/T-S items. The reason why V/T-O items are consistently associated with all trauma-related dependent measures among RW, while this is not so among UN-soldiers, may therefore be explained by other factors than what is embedded in the mere exposure to trauma. Differences with respect to coping strategies as well as differences regarding personality dimensions may be factors of consideration. However, future research will have to determine whether such is the case.

Trauma-related and non-trauma-related psychopathologies were both significantly associated with trauma measures among RW. Furthermore, there was no difference between the various types of psychopathology (anxiety, depression and somatization)

regarding statistical association with V/T-O. (These measures were not available among UN-soldiers). This may suggest that general psychopathological reactions and trauma specific reactions among RW are equally associated with trauma exposure, suggesting general psychopathology to be more trauma-related than what is usually expected. However, the results do not support the association of any particular group of pathology with PTSD related pathology. It is more reasonable to suggest that the present results are in accordance with previous findings that indicate that trauma victims develop a variety of symptoms and disorders in addition to PTSD (see McFarlane & de Girolamo 1996).

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