PTSD-8: A Short PTSD Inventory

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Abstract: Traumatic events pose great challenges on mental health services in scarcity of specialist trauma clinicians and services. Simple short screening instruments for detecting adverse psychological responses are needed. Several brief screening instruments have been developed. However, some are limited, especially in relation to reflecting the posttraumatic stress disorder (PTSD) diagnosis. Recently, several studies have challenged pre-existing ideas about PTSD's latent structure. Factor analytic research currently supports two four factor models. One particular model contains a dysphoria factor which has been associated with depression and anxiety. The symptoms in this factor have been hailed as less specific to PTSD. The scope of this article is therefore to present a short screening instrument, based on this research; Posttraumatic Stress Disorder (PTSD) – 8 items. The PTSD-8 is shown to have good psychometric properties in three independent samples of whiplash patients (n=1710), rape victims (n=305), and disaster victims (n=516). Good test-rest reliability is also shown in a pilot study of young adults from families with alcohol problems (n=56).

Keywords: Screen, brief instrument, measure, PTSD, trauma, dysphoria.

INTRODUCTION

Victims of disaster and other traumatic events often require immediate psychological and medical care. Therefore, routine screening for posttraumatic stress disorder (PTSD) in such individuals is highly recommended. However, specialist trauma clinicians and services are scarce. In addition, the time restrictions placed on busy service providers often make regular screening infeasible [1]. One remedy for this predicament is the production of simple short screening instruments. Rapid assessment tools have the potential to increase screening without being overly burdensome to the clinician. Such measures are considered as invaluable [2]. Ideally, these instruments should be usable by non-trauma specialists to detect adverse psychological responses, especially PTSD.

Recently, two reviews of self-report screening instruments for PTSD were published [2, 3]. The reviews highlighted that few of the existing instruments are truly short versions (< 10 items) [2, 3]. Generally, studies have concluded that the short instruments perform as well as the longer scales from which they were derived. They have also concluded that the short versions show good psychometric properties with regards to a reasonable balance of sensitivity and specificity [2, 4]. However, a number of problems are connected with the existing short scales. Some are derived from statistical analysis alone [5 - 10] largely ignoring the theoretical background; some use simple dichotomous (yes / no) response categories [8, 11], resulting in less sensitivity for variation in symptom severity; some of the scales have not been tested in diverse trauma populations or have been tested in samples with few PTSD cases [5 - 9]; and some do not cover all three PTSD core symptom clusters [7, 11]. The latter is a noted limitation as according to Schell and colleagues [12] there is a possibility of individual PTSD symptom clusters being differentially related to important criteria of interest. These important criteria of interest may be the trauma experiences which precede PTSD symptoms and thus it is important that screening measures cover all core clusters as to cover all possible trauma groups. Furthermore, it has been suggested that DSM corresponding self report measures are the second most important type of PTSD assessment tools after the clinical interview. Likewise, the same researchers have stated that self report measures are more efficient screening instruments than the clinical interview [13].

We suggest that a good short screening instrument should be theory driven, that is, it should be specific in relation to the PTSD diagnosis. In addition, it should reflect those items that best portray the diagnosis and that have a substantial value in understanding the core dynamics of the diagnosis. Since Horowitz [14] suggested the two-factor information processing model of PTSD, there have been a number of developments in the literature relating to PTSD's latent structure. The DSM-IV [15] divides the 17 PTSD items (cf. Table **1**) across three symptom factors; intrusion (B1 – B5), avoidance / emotional numbing (C1 – C7), and hypervigilance (D1 – D5). However, support for this latent structure is limited [16]. Indeed, a number of recent factor analytic studies [17-19] have given support to a four factor model proposed by King and colleagues [20] which divides the avoidance / emotional numbing factor (C1 – C7) into two separate

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Table 1. Distribution of posttraumatic stress disorder (PTSD) symptoms across DSM-IV, King *et al.* and Simms *et als.* factor models.

DSM-IV PTSD Symptom	Three-Factor Model (DSM-IV)	Four-Factor Model (King *et al.*, 1998)	Four-Factor Model (Simms *et al.*, 2002)
B1. Instructive recollection	I	I	I
B2. Recurrent dreams	I	I	I
B3. Event recurring	I	I	I
B4/5. Psychological distress / Physiological reactivity	I	I	I
C1. Efforts to avoid thoughts	A	A	A
C2. Efforts to avoid activities	A	A	A
C3. Memory impairment	A	N	**D**
C4. Diminished interest in activities	A	N	**D**
C5. Feelings of detachment from others	A	N	**D**
C6. Restricted range of affect	A	N	**D**
C7. Sense of foreshortened future	A	N	**D**
D1. Sleeping difficulty	H	H	**D**
D2. Irritability or anger	H	H	**D**
D3. Difficulty concentrating	H	H	**D**
D4. Hypervigilance	H	H	H
D5. Exaggerated startle response	H	H	H

Note: I = Intrusion; A =Avoidance; N = Emotional Numbing; D = Dysphoria; H= Hypervigilance. Dysphoria items are highlighted in bold.

factors; avoidance (C1 - C2) and emotional numbing (C3 – C7). An alternative latent structure which has received substantial empirical support [21-25] was proposed by Simms and colleagues [26]. This four factor model contained a new factor labelled dysphoria (C3 – D3) which retained the emotional numbing symptoms (C3 – C7) and the three hypervigilance symptoms (D1, D2, D3) of the King *et al.* model [20]. The dysphoria factor was proposed based on research demonstrating that PTSD contained an underlying component of general distress which was also apparent in a number of other mood and anxiety disorders [27]. Recently, studies have elaborated on this and have directly assessed whether the underlying distress component is indeed localized in the dysphoria factor of the Simms *et al.* PTSD model [26, 28, 29]. Results thus far have supported this proposition. Elklit and Shevlin [24] reported that the dysphoria factor provided higher correlations with scores on depression and anxiety subscales compared to those provided from the remaining factors. In addition, Elklit and colleagues [28] and Armour and colleagues [29] reported that when controlling for the variance attributed to depression in each of the 17 PTSD items the factor scores of the dysphoria items were attenuated to the largest degree, on average, compared to the factor scores of the items in the three remaining factors. Combined, this has suggested that the dysphoria items are phenotypically similar to symptoms found in anxiety and depression disorders and thus are not PTSD specific.

In a similar vein of research Spitzer and colleagues [30] proposed several changes to the PTSD diagnostic criteria, one of which was the removal of five of the 17 PTSD indicators (C3, C4, D1, D2, D3). Notably, the five symptoms are all located in the dysphoria factor of the Simms *et al.* PTSD model. Elhai and colleagues [31] investigated whether the removal of the five PTSD symptoms as proposed by Spitzer *et al.* [30] would impact on prevalence rates, diagnostic comorbidities, differences in structural validity, and differences in internal consistency. Results concluded that only 1.34 % of individuals changed diagnostic status, comorbidity rates were virtually unaltered, and internal consistency was reduced but only marginally so. Thus, the removal of five of eight dysphoria symptoms had little impact. Subsequent work by Elhai and colleagues [32] tested a number of factor models of PTSD; the DSM-IV, the King *et al.* and the Simms *et al.* models in addition to a Simms *et al.* factor model which removed all of the eight dysphoria items. The confirmatory factor analyses were conducted on an adult trauma sample and an adolescent trauma sample. Results concluded that the Simms *et al.* model which removed the dysphoria items provided the best fit to both data sets. Combined, these results question whether there is a certain degree of redundancy in relation to the eight dysphoria items in the PTSD diagnostic criteria.

Research by Franklin and colleagues [33] reported that few individuals go on to meet the requirements of Criterion C (avoidance / emotional numbing) and Criterion D (hypervigilance) of the DSM-IV criteria if they fail to meet the requirements of Criterion B (intrusion). Elhai and colleagues [31] proposed that this may account for why the removal of

five dysphoria items in their study had little impact on PTSD prevalence and comorbidity rates. Thus, based on the above mentioned research, it stands to reason that the same would hold for the removal of all eight dysphoria items.

The aforementioned research provides evidence that the PTSD diagnosis contains a number of symptoms which are less specific to PTSD and are localised in the dysphoria factor of the Simms *et al.* model. If these items are superfluous within the diagnostic criteria set for PTSD, as suggested by previous research, then a simple yet effective method for developing a short screening measure for PTSD is to create a measure in the absence of these eight items. Thus, administration time would essentially be cut in half allowing more 'at risk' individuals to be screened. In accordance with this rationale, we have developed and tested a short self-report instrument: the PTSD-8.

MATERIALS AND METHODOLOGY

Participants

The PTSD-8 was validated in three different trauma samples exposed to different traumatic events. Test-retest reliability was tested in a fourth trauma sample.

Sample 1 consisted of 1710 participants recruited from the Danish Society for Polio, Traffic, and Accident Victims. The society generally receives referrals from the Danish National Health Service and other health related sources. All society members with whiplash (N = 2320) were contacted with a response rate of 74%. The mean age was 43.10 years (SD = 10.30) and 79% (N = 1349) were female. The participants had been exposed to trauma resulting in whiplash on average 62 months prior to participating in the study. All participants were contacted by post and invited to participate in the study by completing the enclosed questionnaires. There were no differences found between responders and non-responders on gender or age. Almost all participants (N = 1527, 89.9%) sustained whiplash through a motor vehicle accident.

Sample 2 included 305 rape victims who had been in contact with the Centre for Rape Victims at the University Hospital of Aarhus, Denmark All rape victims (N = 622) were personally asked to participate during visits at the center. Of those 49 % agreed to participate in the study. Most victims (57%) had experienced a completed rape. The remaining victims had primarily been exposed to attempted rape (15%), other forms of sexual assault (21%), or they could not remember the specific type of assault they had experienced (7%). The mean age was 23.60 years (SD = 10.80) and 92% (N = 281) were female. Questionnaires were answered by post approximately three months after the assault.

Sample 3 consisted of 516 evacuated inhabitants that had been exposed to a major firework factory explosion. The explosion measured 2.2 on the Richter scale and resulted in the damage of 176 homes, 75 of which were totally destroyed. Three months after the disaster questionnaires were distributed personally in the evacuated area. The response rate was 51%. The mean age was 50.20 years (SD = 14.67) and 51% (N = 265) were female.

Sample 4 A test-retest of the PTSD-8 was carried out in a pilot study at a counseling service for young adults from families with alcohol problems. Participants completed the PTSD-8 at baseline and again two weeks later. Over a period of two months all young adults (N = 56) at the counseling service were asked personally to participate with a response rate of 100 % at baseline and 87.5% at the re-test assessment (N=49). The mean age was 27.55 years (SD = 3.59) and 76.8 % (N = 43) were female.

Measures

The Harvard Trauma Questionnaire Part IV (HTQ) [34] assesses both DSM-IV symptoms and culture-specific symptoms associated with PTSD. The scale yields both a PTSD diagnosis according to DSM-IV criteria and a measure of PTSD symptom severity. The HTQ asks the respondents how much each symptom has bothered them in the last month. The 30 items are answered on a four-point Likert scale ('not at all' (1), 'a little' (2), 'quite a bit' (3), and 'all the time' (4)). The summed score provides a score for symptom severity. The first sixteen items correspond to the seventeen DSM-IV criteria for PTSD. The HTQ uses one item to assess both psychological and physiological reactions to events that symbolize or resemble aspects of the traumatic event (B4 and B5 in the DSM-IV). This splitting of B4 into B4 and B5 was introduced in DSM-III-R in 1987, where physiological reactivity was placed as a hypervigilance symptom. Phenomenologically, intense psychological distress is always associated with physiological distress whether subjectively registered or not; it is, however, possible to demonstrate physiological reactivity in the laboratory at a subliminal level, e.g. war veterans reacting physiologically to the sound of a helicopter and not being conscious of the distress that the sound has activated in them. In clinical practice, the splitting of the two items makes little sense. The sixteen HTQ items are divided into three subscales that correspond to the three main symptom groups of PTSD: intrusion, avoidance, and hypervigilance. High estimates of reliability were found for each of the subscales for samples 1-3, (intrusion (α= 0.78; 0.76; 0.78), avoidance (α= 0.77; 0.77; 0.74), and hypervigilance (α= 0.72; 0.80; 0.84)) and for the scale as a whole (α= 0.87; 0.90; 0.90). Following the DSM-IV, a possible diagnosis of PTSD was proposed if participants reported at least one intrusion symptom, three avoidance symptoms, and two hypervigilance symptoms. An item was deemed to be positively endorsed if scores were $\geq$ 3. The HTQ self-report measure of PTSD has 88% concordance with clinical structured interview based estimates of PTSD [34].

The PTSD-8 is derived from the first sixteen items of the HTQ, which corresponds to the DSM-IV criteria for PTSD. Based on the results of previous factor analytic research highlighting Dysphoria items as less specific to PTSD [24, 28, 29], eight non dysphoria items were retained (Table **1**). These were four intrusive (B1, B2, B3, and B4 and B5 combined), two avoidance (C1 and C2) and two hypervigilance items (D4 and D5). The items are answered on a four-point Likert scale ('not at all' (1), 'a little' (2), 'quite a bit' (3), and 'all the time' (4)). The summed score provides a score for symptom severity. The internal consistencies as measured by Cronbach's alpha were good for samples 1, 2, and 3 (α =

Table 2. Hierarchical multiple regression of the eight single items of the PTSD-8 with the Harvard Trauma Questionnaire total score as the dependent variable across the three samples.

		Sample 1 Whiplash		Sample 2 Rape		Sample 3 Explosion Disaster	
PTSD-8 item	Sub-scale	Beta*	95% CI of beta	Beta*	95% CI of beta	Beta*	95% CI of beta
1. Intrusive recollection (B1)	I	.08	(0.57-1.24)	.14	(1.08-2.57)	.14	(1.05-2.11)
2. Event recurring (B2)	I	.09	(0.62-1.31)	.08	(0.35-1.66)	.07	(0.24-1.27)
3. Recurrent dreams (B3)	I	.16	(1.59-2.23)	.24	(1.90-2.92)	.15	(1.50-2.70)
4. Psychological and physiological distress (B4/5)	I	.14	(1.03-1.60)	.16	(1.03-2.20)	.13	(0.78-1.68)
5. Efforts to avoid activities (C1)	A	.13	(0.85-1.31)	.20	(1.30-2.23)	.13	(0.64-1.35)
6. Efforts to avoid thoughts (C2)	A	.24	(1.80-2.27)	.16	(1.13-2.15)	.17	(1.35-2.28)
7. Exaggerated startle response (D4)	H	.19	(1.38-1.85)	.19	(1.34-2.36)	.22	(1.50-2.34)
8. Hypervigilance (D5)	H	.27	(2.10-2.58)	.17	(1.22-2.36)	.28	(2.11-3.01)

Note: *$p < .001$ for all presented betas.
Sample: 1 = whiplash (adj. $R^2 = .80$), 2 = rape (adj. $R^2 = .87$), 3 = explosion disaster (adj. $R^2 = .84$).
I = intrusion, *A* = avoidance, *H* = hypervigilance.

0.83; 0.84; 0.85 respectively). The PTSD-8 was administered in Danish across all four samples. An English translation is included appendix A. The corresponding scoring key can be found in appendix B.

The Trauma Symptom Checklist (TSC) is used to measure general distress symptoms after trauma [35]. The revised version of the scale consists of 23 items answered on a 4-point Likert scale (never (1), always (4)) [36]. The TSC-23 has good internal consistency, reliability, and factorial and criterion validity. The internal consistencies as measured by Cronbach's alpha were excellent for samples 1, 2, and 3 (α = 0.91; 0.94; 0.90 respectively).

Statistical Analyses

The analysis was conducted in SPSS 18.0. Hierarchical multiple regression was used to test the predictive value of the eight theoretically chosen items of the PTSD-8. For each of the three samples, all eight items were entered as a block in the regression and the total score of the full scale HTQ was entered as the dependent variable.

The performance of the PTSD-8 was assessed in terms of sensitivity and specificity in relation to different cut-off scores and in relation to the PTSD symptom clusters used in the DSM-IV. Sensitivity indicates the probability that someone with a PTSD diagnosis will have tested positive. Specificity indicates the probability that someone without a PTSD diagnosis will have tested negative. Sensitivity and specificity are statistical measures closely related to type I and type II errors, measured as the performance of a binary classification test (χ^2). Sensitivity was calculated with the following equation: Sensitivity = number of true positives / (number of true positives + number of false negatives). Specificity was calculated with the following equation: Specificity = number of true negatives / (number of true negatives + number of false positives). Positive and negative predictive power of the PTSD-8 was also calculated. Positive predictive power reflects the proportion of patients with positive test results who are correctly diagnosed as having PTSD. Positive predictive power was calculated with the following equation: Positive predictive power = number of true positives / (number of true positives + number of false positives). Negative predictive power reflects the proportion of patients with negative results who are correctly diagnosed as not having PTSD. Negative predictive power was calculated using the following equation: Negative predictive power = number of true negatives / (number of true negatives + number of false negatives). The overall performance of the PTSD-8 (overall efficacy) was measured in terms of the percentage of cases correctly classified as having or not having a possible PTSD diagnosis. Overall efficacy was calculated as: overall efficacy = (number of true positives + number of true negatives) / N.

Pearson's correlation coefficient was used to investigate concurrent validity of the PTSD-8. Concurrent validity is demonstrated when a test correlates well with a measure that has been previously validated. In the present study concurrent validity was investigated by comparing the PTSD-8 with the TSC. The test-retest reliability was also investigated using Pearson's correlation coefficient. Preliminary analysis was performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity.

RESULTS

The eight items achieved an explained variance of the full scale HTQ range (adjusted R^2 = 0.80-0.87) indicating a high correlation between the two scales across type of trau-

Table 3. Comparison of the sensitivity, specificity, positive and negative predictive power of the PTSD-8 based on the Harvard Trauma Questionnaire algorithm across the samples of whiplash, rape and disaster victims.

Cut-off score	Sensitivity			Specificity			Positive Predictive Power			Negative Predictive Power			Overall Efficiency		
Sample	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3
17	.87	.99	.92	.78	.57	.72	.75	.70	.34	.89	.99	.98	.82	.78	.75
18	.81	.99	.88	.83	.64	.79	.78	.73	.39	.85	.98	.98	.82	.81	.80
19	.74	.96	.81	.89	.71	.84	.83	.77	.44	.82	.95	.97	.82	.84	.84
20	.68	.88	.75	.94	.74	.87	.90	.77	.46	.80	.86	.96	.83	.81	.85
21	.60	.84	.64	.97	.80	.91	.93	.81	.53	.76	.84	.94	.81	.82	.88
22	.50	.76	.58	.98	.87	.94	.95	.85	.58	.72	.78	.94	.77	.81	.89
PTSD symptom clusters	.71	.92	.80	.95	.82	.88	.92	.84	.50	.81	.91	.97	.85	.87	.87

Note: PTSD symptom clusters = a combined score of at least one item score ≥ 3 on each symptom cluster: Intrusion, avoidance, and hypervigilance. Sample: 1 = whiplash, 2 = sexually assaulted, 3 = firework disaster.

matic exposure and exposure severity. The eight items and the standardized beta coefficients for all samples are presented in Table **2**.

Based on the diagnostic algorithm using the Harvard Trauma Questionnaire 42.9% participants (N = 639) in sample one, 50.2% of the participants (N = 153) in sample two, and 13.3% of the participants (N=64) in sample three were classified as having PTSD. The performance of PTSD-8 using different cut-off scores and the combination of at least one symptom with an item score ≥ 3 from each PTSD subscale is presented in Table **3**.

Comparing all three samples, each of the cut-off scores gives an overall efficiency ranging from 75% to 89%. However, using the same cut-off score on all samples resulted in very distinct results compared to those identified with the full scale HTQ. In sample one (whiplash) the best predictive value was achieved with a cut-off score of 18. With this cut-off score the PTSD-8 classified 43.8% as having PTSD, a result close to the 42.9% originally identified with the PTSD algorithm. However, in sample two (rape), using the same cut-off score, 66.9% were classified as having PTSD, a result not as close to the 50.2% originally identified. In the third sample (firework disaster), a cut-off score of 18 resulted in 30% of the participants having PTSD, a result far from the 13.3% originally classified. This suggests difficulties with obtaining a mutual optimal cut-off score for PTSD, which can be used across different trauma populations. Contrary to using a beforehand fixed cut-off score the overall best performance of the PTSD-8 across the three trauma populations was achieved using a threshold of at least one symptom from each PTSD subscale with an item score which was equal to or greater than three (≥ 3). This means that there has to be at least one of the four intrusion items with a score ≥ 3, at least one of the two avoidance items with a score ≥ 3 and a least one of the two hypervigilance items with a score ≥ 3 (cf. appendix B). This combination classified 33% as having PTSD in sample one, 54% in sample two, and 21.7% in sample three, which closely resembles the results of the original identified percentages by the HTQ.

The correlations between the PTSD-8 and the TSC-23 were high: sample one ($r = .58$, $p < .000$), sample two ($r = .78$, $p < .000$), and sample three ($r = .70$, $p < .000$), evidencing a high concurrent validity. The test-retest reliability of the PTSD-8 was also good, indicated by the strong positive correlation between time one and two scores ($r = .82$, $p < .000$). The internal consistencies for the test-retest were $\alpha = 0.74$ at time one and $\alpha = 0.75$ at time two.

DISCUSSION

In agreement with previous studies [2, 3] the results of this study show that the PTSD-8 has acceptable performance compared to a longer scale covering all PTSD items. The present study is also in alignment with Brewin [2, 11], who criticizes studies defining cut-off scores post hoc. Using the same cut-off score in all three trauma samples, we came up with very different results in predicting PTSD. The results stress the importance of not only relying on scales and cut-off scores derived from statistical analysis alone, but also on building the instrument on a strong theory that portrays the PTSD diagnosis. Unlike some other screening instruments [5-10] the PTSD-8 is derived from theory, with respect to the core dynamics of the PTSD diagnosis. Furthermore, the PTSD-8 was developed on the basis of previous factor analytic studies which have suggested that dysphoria items are not as specific to PTSD as the items in the remaining three factors [24, 26-28]. Indeed, such studies have tentatively suggested that the removal of dysphoria items may be a consideration for the DSM-V [28, 29]. For example Elklit and colleagues [28] concluded that a number of items beyond the dysphoria factor were also significantly attenuated when controlling for the variance attributable to depression, likewise Armour and colleagues [29], in a similar study controlling for the variance attributable to depression in each of the 17 PTSD indicators, questioned if the level of shared variance was enough to justify the complete removal of all

dysphoric items. The current study, which has demonstrated that dysphoric items are not necessarily needed to identify PTSD cases, combined with the results of the two aforementioned studies [28, 29] and combined with Elhai and colleagues [31] who demonstrated that the removal of five of eight dysphoric symptoms had little impact on PTSD prevalence rates or diagnostic comorbidities, further strengthen the argument that dysphoric items may be redundant within the current PTSD diagnostic criteria set. Thus, the wider implications for the PTSD diagnosis are that the dysphoria items could be dropped from the DSM-V's diagnostic criterion set.

The PTSD-8 also overcomes several of the other problems described earlier associated with the existing short screening instruments. The PTSD-8 assesses items from all three DSM-IV PTSD clusters contrary to some existing scales. For example, the Trauma Screening Questionnaire (TSQ) – 10 items [11] and the Startle, Physiological Arousal, Anger, and Numbness scale (SPAN) – 4 items [7], does not assess the avoidance and intrusion symptom clusters respectively. In addition, the items of the PTSD-8 are scored on a Likert scale allowing for variation in symptom severity. This is in contrast to TSQ-10 [11] and the Disaster-Related Psychological Screening Test (DRPST) – 7 items [8], which score symptoms dichotomously. Furthermore, in contrast to some of the existing scales [5 - 9] the PTSD-8 has been tested across diverse trauma samples with large proportions of PTSD cases.

Instead of using fixed cut-off scores as some existing scales do [2, 3], it may be preferable to use a combination of one symptom from each PTSD subscale as we have shown with the PTSD-8. With this model we were able to achieve a good overall performance and a well-balanced relationship between sensitivity, specificity, positive predictive power, and negative predictive power across all trauma samples. The PTSD-8 also works efficiently in trauma samples which are characterized with different periods of time elapsed post-trauma and with varying prevalence rates of PTSD. Another important aspect is that, as it is a simple symptom scale, it can be used without prior knowledge of the PTSD diagnosis. This makes the scale a straightforward instrument that can be used by various health professionals.

LIMITATIONS

The study has several limitations. One is that we did not use a structured clinical interview for identifying the presence or absence of PTSD. Instead we used the HTQ both to develop PTSD-8 and diagnose PTSD. At the same time the PTSD-8 being a self-report measure of PTSD is subject to all the limitations connected with self-report measurements. Furthermore, the PTSD-8, like most of the existing short scales, does not assess PTSD's criteria A1, A2, E and F. However, research has reported that the rate of PTSD diagnosed cases based on both self report measures and clinical interviews are comparable [37,38]. In addition, the HTQ was originally validated against a clinical diagnostic interview [34] and the PTSD-8 shows good concurrent validity with the TSC. Future studies are needed to validate the PTSD-8 against a clinical interview or at a minimum another measurement of PTSD than the HTQ.

CONCLUSION

In spite of these limitations, the PTSD-8 performs well in all samples, indicating that it is a sound instrument to use for

Appendix A

PTSD-8

The following are symptoms that people sometimes have after experiencing, witnessing or being confronted with a traumatic event. Please read each one carefully and mark your ***answer with an X*** according to how much the symptoms have bothered you ***since the trauma*** (One X per question).

	Not at all	Rarely	Sometimes	Most of the time
1. Recurrent thoughts or memories of the event.				
2. Feelings as though the event is happening again.				
3. Recurrent nightmares about the event.				
4. Sudden emotional or physical reactions when reminded of the event.				
5. Avoiding activities that remind you of the event.				
6. Avoiding thoughts or feelings associated with the event.				
7. Feeling jumpy, easily startled.				
8. Feeling on guard.				

Please note for using PTSD-8 to diagnose PTSD the following DSM-IV criteria have to be met. The event has to involve actual or threatened death, serious injury, or a threat to the physical integrity of self or other (A1) and the experience of intense fear, helplessness or horror (A2). The symptoms have to be present for at least one month after the trauma (E) and cause clinically significant distress or impairment in social, occupational, or other important areas of functioning (F).

Appendix B

Scoring key for PTSD-8

Intrusion items	Avoidance items	Hypervigilance items
1 2 3 4	5 6	7 8
Meeting intrusion criteria: at least one item with a score $\geq$ 3 Yes ☐ No ☐	Meeting the avoidance criteria: at least one item with a score $\geq$ 3 Yes ☐ No ☐	Meeting the hypervigilance criteria: At least one item with a score $\geq$ 3 Yes ☐ No ☐

Note: criteria for all three symptom clusters have to be met.

screening for PTSD in different trauma populations across various time periods. The PTSD-8 represents a more precise yet brief measurement of PTSD than existing instruments, because the PTSD-8 overcomes several of the problems associated with the existing scales. The PTSD-8 is a theoretically driven derivation of the HTQ which excludes the non specific PTSD symptoms highlighted in recent research. However, it still covers all three symptom clusters of the DSM-IV PTSD diagnosis. It is also advantageous over other screening measures as it assesses symptom severity. In addition, the PTSD-8 is validated in three large heterogeneous trauma samples with high proportions of PTSD cases. The PTSD-8 has shown good psychometric properties and can be used by various health professionals without trauma specialties.

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