

The Post-Traumatic Embitterment Disorder Self-Rating Scale (PTED Scale)

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Original publication:

Linden M., Baumann K., Lieberei B. & Rotter M. (2009). The Post-Traumatic Embitterment Disorder Self-Rating Scale (PTED Scale). *Clinical Psychology & Psychotherapy*, 16, 139–147.

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1. Abstract

The Post-Traumatic Embitterment Disorder Self-Rating Scale (PTED Scale) asks for prolonged and disabling embitterment reactions in the aftermath of negative life events. The PTED Scale was administered to four independent samples of patients and controls. Internal consistency and test–retest reliability were high. Factor analysis indicated a two-factor solution, accounting for 55.25% of the total variance. The PTED Scale discriminated significantly between patients who had been classified according to clinical judgement as suffering from pathological embitterment. Correlations with related instruments demonstrated good convergent validity. Data obtained from a non-clinical sample indicated a prevalence of clinically relevant embitterment in the general population of about 2.5%. The PTED Scale is a reliable and valid measure for embitterment as an emotional reaction to a negative life event. Furthermore, results demonstrate that reactive embitterment in connection to a negative life event is a prevalent phenomenon among clinical and non-clinical populations.

2. Test Concept

2.1. Theoretical Background

Negative life events can result in very different psychological reactions, ranging from good coping to anxiety, depression or post-traumatic stress disorder (PTSD) (Bale, 2006; Boelen & Lensvelt-Mulders, 2005; Mancini & Bonanno, 2006; Mol et al., 2005; Viinameeki, Koskela, Niskanen, & Taehkae, 1994). One answer can be embitterment, a feeling known to most persons. Like anxiety, depression or other stress reactions, it can become pathological when it reaches greater intensity and is accompanied by feelings of helplessness, dysphoric mood, intrusive thoughts, aggression towards others and suicidal ideation towards oneself, withdrawal from others, phobic avoidance of places and persons that can remind oneself of the critical event, or multiple somatoform complaints (Hauer, Wessel, & Merckelbach, 2006).

Linden, Baumann, Lieberei and Rotter (2009) have described and summarized this clinical syndrome as 'post-traumatic embitterment disorder (PTED)'. PTED is seen as a subtype of adjustment disorder and understood as a reaction to exceptional, though normal negative life events, such as unemployment, divorce or death of a relative. The common pathogenic feature of such events is that they are experienced as unjust and unfair and that they violate 'basic beliefs' (Beck, Rush, Shaw & Emery, 1979; Janoff-Bulman, 1992) or 'valid overvalued schemas' (Dalgleish, 2004; Dalgleish & Power, 2004).

The pathogenic mechanism in PTED is not an event-inherent property, but emerges from the match between the belief and value system of the patient on one side, and the violation of these beliefs by the event on the other.

PTED is thus, like PTSD, not characterized by a particular type of stressful events, but by a distinct psychological process (experiences of injustice and humiliation) and by a highly specific psychopathological profile (embitterment).

Linden et al. (2009) first described an instrument that asks for embitterment and associated psychological symptoms in reaction to negative life events, the PTED Self-Rating Scale (originally developed in German).

2.2. Specification of diagnostic criteria of Posttraumatic embitterment disorder (PTED)

(described by Linden, Baumann, Rotter & Schippan, 2008)

Diagnostic features

The essential feature of posttraumatic embitterment disorder (PTED) is the development of clinically significant emotional or behavioural symptoms following a single exceptional, though normal negative life event. The person knows about the event and perceives it as the cause of illness. The event is experienced as unjust, as an insult, and as a humiliation. The person's response to the event must involve feelings of embitterment, rage, and helplessness. The person reacts with emotional arousal when reminded of the event. The characteristic symptoms resulting from the event are repeated intrusive memories and a persistent negative change in mental well-being. Affect modulation is unimpaired and normal affect can be observed if the person is distracted.

The trigger event is a single negative life event that can occur in every life domain. The event is experienced as traumatic due to a violation of basic beliefs. Traumatic events of this type include, but are not limited to, conflict at the workplace, unemployment, the death of a relative, divorce, severe illness, or experience of loss or separation. The illness develops in the direct context of the event. The person must not have had any obvious mental disorder prior to the event that could explain the abnormal reaction.

Associated features

Individuals with PTED frequently manifest decreased performance in daily activities and roles. PTED is associated with impaired affectivity. Besides prolonged embitterment individuals may display negative mood, irritability, restlessness, and resignation. Individuals may blame themselves for the event, for not having

prevented it, or for not being able to cope with it. Patients may show a variety of unspecific somatic complaints, such as loss of appetite, sleep disturbance, pain.

Specific culture features

Elevated rates of PTED may occur in times of major social changes that force people to reorganize their personal biographies.

Differential diagnosis

Despite partial overlaps in symptomatology, PTED can be differentiated from other affective disorders, posttraumatic stress disorder, or anxiety disorders.

In contrast to adjustment disorder the symptomatology of PTED does not show the tendency of spontaneous remission.

In contrast to depression, affect modulation is unimpaired in PTED. In depression, the specific causal connection between the trigger event and symptomatology can not be found, unlike in PTED. While in posttraumatic stress disorder (PTSD) anxiety is the predominant emotion, in PTED it is embitterment. In PTSD there must be a critical event that has to be exceptional, life-threatening and, most important, is invariably leading to acute panic and extreme anxiety. In PTED there is always an acute event that can be called normal as it can happen to many persons in a life course. Still it is also an exceptional event as it is not an everyday event.

Diagnostic criteria for posttraumatic embitterment disorder (PTED)

- (A) Development of clinically significant emotional or behavioural symptoms following a single exceptional, though normal negative life event.
- (B) The traumatic event is experienced in the following ways:
 - (1) the person knows about the event and sees it as the cause of illness;
 - (2) the event is perceived as unjust, as an insult, and as a humiliation;
 - (3) the person's response to the event involves feelings of embitterment, rage, and helplessness;
 - (4) the person reacts with emotional arousal when reminded of the event.
- (C) Characteristic symptoms resulting from the event are repeated intrusive memories and a persistent negative change in mental well-being.
- (D) No obvious mental disorder was present prior to the event that could explain the abnormal reaction.
- (E) Performance in daily activities and roles is impaired.
- (F) Symptoms persist for more than six months

3. Test Construction and Samples

The PTED Self-Rating Scale (PTED Scale) has the aim to provide an instrument that allows to screen for reactive embitterment and to measure its severity, in the hope to open new avenues for diagnosis and treatment.

The PTED contains 19 items designed to assess features of embitterment reactions to negative life events. The characteristic features of reactive embitterment as outlined by Linden (2003) were summarized and translated into self-rating questions by an expert team of researchers experienced with pathological reactive embitterment.

The questionnaire starts with the line 'During the last years there was a severe and negative life event . . . ' and is then followed by individual statements such as ' . . . that hurt my feelings and caused considerable embitterment'. The participants are asked to indicate for each item on a five-point scale to what degree the statement applies to them. The scale ranges from (0) 'not true at all' to (4) 'extremely true'.

In a study (Linden et al., 2009) the PTED Scale was administered to patients with severe embitterment reactions (PTED sample) and matched control patients. During a period of 20 months four samples were recruited:

For the selection of the PTED group all physicians of the Department of Behavioural and Psychosomatic Medicine at the Seehof Rehabilitation Centre were asked to name patients who might suffer from reactive embitterment. On the basis of an extensive clinical interview, 49 (29 women, 20 men) of 88 reported inpatients were fulfilling the diagnostic criteria for PTED (Linden, 2003). The age of patients ranged from 30 to 61 (mean = 49.6; standard deviation [SD] = 7.02).

The control group consisted of 48 patients who were treated as inpatients because of other mental disorders. Whenever a PTED patient was admitted, the next incoming patient with the same gender and age was selected for the control group (no patients refused).

100 (73 women, 27 men) consecutive and unselected inpatients (UI) were selected from the Psychosomatic Rehabilitation Hospital Heinrich Heine in Potsdam. They suffered from all kinds of chronic mental disorders (no patients refused). The age of patients ranged from 27 to 63 (mean = 46.9; SD = 8.76). In this opportunity sample, the scale was administered twice, with a time interval of six to eight days.

Another opportunity sample of 221 patients (158 women, 63 men) that were treated in a general practice (GP) was investigated. The age of patients ranged from 15 to 81 years (mean = 42.5; SD = 13.8).

In a train sample (TS) 158 persons (85 women, 73 men) who were travelling in a public train also participated. They were matched for sex and age.

In each sample, instructions were given in a standardized manner and each participant signed an informed consent. The examinations of the PTED and GP sample were done with a 17-item version of the scale. Then, in order to remove some lack of clarity, two items of the 17-item version were split into two items, resulting in the final 19-item version, which was applied in the UI and the GP sample.

4. Criteria

To explore the prevalence of embitterment, the PTED Scale was given to four independent subject samples. The frequency of occurrence and the intensity of embitterment were analysed. The train sample (TS) was investigated as an approximation of embitterment in the general population. In the TS group remembered 34.8% a recent event that caused feelings of embitterment and 2.5% of them had a score of 2 and greater on the PTED scale that indicates them as having PTED.

Also the reliability, the discriminant and convergent validity and factorial structure of the scale were investigated using the data of the unselected inpatients (UI), the PTED and the control group, as discussed below.

4.1. Reliability

To assess the reliability of the PTED Scale, the internal consistency was examined, and a test–retest was carried out, using the data of the UI sample.

The ratings of the UI sample on all items are given in Figure 1 (first assessment) in descending order. The alpha coefficient was .93 ($n = 95$; five cases were excluded from the analyses because of missing data) indicating a high internal consistency. The Spearman rho correlation was .71 for the sum score, with a range of .53–.86 for individual items, speaking for a good test–retest reliability of the PTED Scale (Table 1).

4.2. Validity

The validity of the test was assessed by a discriminant analysis of the PTED sample and the matched control group. In this analysis, the 17-item version of the PTED Scale was utilized. A chi-square transformation of Wilks' lambda indicated that the computed function discriminated significantly (Chi Square = 76.94, $p < 0.001$) between both groups. The PTED Scale allocated 44 of the 49 patients from the PTED group as having PTED, indicating a sensitivity of 89.8% of the scale. The specificity was found to be 91.7%, with 4 of the 48 control group patients being diagnosed with PTED on the basis of the PTED Scale. Overall, the predicted classification based on the PTED Scale was in 90.7% of the cases in accordance with the clinical diagnoses.

The discriminant function indicated a mean total score of 1.6 as the critical discriminant value between the two groups. In regard to clinical practicability and in order to increase the specificity, a mean total score of 2.5 on the PTED Scale is recommended as a cut-off score, i.e. a score ≥ 2.5 is indicating a clinically significant intensity of reactive embitterment. The distributions of the mean total scores of the four different samples are shown in Figure 2.

Table 1 shows the pooled within-group correlations with the discriminant function for each item. Moderate to high correlations are found for each item, indicating that all items are of discriminant value. Particularly high correlations are found for items asking for intrusive memories (items 5, 19 and 4), for feelings of disempowerment, helplessness and injustice (items 12, 8, 3 and 1), and for items concerning deterioration of mood and numbness (items 9, 15 and 16). These findings reflect three characteristic features of PTED symptomatology:

- (a) the central role of a negative life event, which frequently triggers painful and intrusive memories;
- (b) the feeling of helplessness and injustice caused by the event;
- (c) and the resulting deterioration of psychological well-being.

The convergent validity of the PTED Scale was tested by comparing the scores of the PTED sample with scores from the "Bern Embitterment Scale" (Znoj, 2009), the modified version of the Impact of Event Scale "IES-R" (Maercker & Schützwohl, 1998) and the Symptom Checklist-90 "SCL-90-R" (Derogatis, 1977; German version by Franke, 1995). The PTED Scale was significantly ($p < 0.001$) correlated with the IES scale ($r = .76$), with the Bern Embitterment Scale ($r = .67$), with the SCL-global severity index (GST) ($r = .57$), with the SCL positive symptom total (PST) ($r = .53$) and the SCL Depression Scale ($r = .52$), speaking for a good convergent validity. Correlations were calculated using data from the PTED sample and matched control patients.

4.3. Principal Component Analysis

An explorative principal component analysis with all PTED Scale items was conducted in the UI sample to analyse the factorial structure of the questionnaire (Table 1). The number of factors to be extracted was determined according to the scree plot method (Cattell, 1966). Two factors emerged that accounted for 55.25% of the total variance. After orthogonal rotation using the Varimax technique, a simple structure was obtained. All variables were well defined by this factor solution, as indicated by moderately high communality values (range = .33–.79). Factor I was defined by items that ask for the psychological status and social functioning. Factor II was defined by items that ask for the emotional response to the event and for thoughts of revenge. This factor solution comprises the two core dimensions of reactive embitterment: the

pathological emotional reaction following a negative life event and the resulting impairment of mental state and social functioning (Linden, Rotter, Baumann & Lieberei, 2007). Therefore, it appears to be appropriate to use a total score of the PTED Scale in order to evaluate the severity of reactive embitterment and PTED symptomatology.

5. Discussion

Embitterment is an emotion that is probably known to everybody. The data of Linden et al. (2009) suggests that 1/3 of the general population remember feelings of embitterment and 1/4 do so in a more intense way (mean total score ≥ 1). However, only 2–3% were found to suffer from reactive embitterment of clinically relevant intensity. In this respect, embitterment must be understood as a dimensional phenomenon similar to anxiety or depressed mood.

The PTED Scale is an instrument that can be used to screen for reactive embitterment and also measure severity, similar to anxiety scales for anxiety disorders and depression scales for depressive disorders. Based on the results from the UI and the GP sample, one can assume that some cases that are presently diagnosed as depression or phobia are in fact cases of PTED (Power & Tarsia, 2007). The PTED Scale can, in such populations, alert physicians to this special aspect of the present disorder, which in any case should have consequences for the treatment (Linden, Baumann & Schippan, 2006; Linden et al., 2007; Schippan, Baumann & Linden, 2004). The data suggests, that a mean total score ≥ 2.5 on the PTED Scale indicates a clinically significant intensity of reactive embitterment. The internal consistency and the retest reliability were high. The construct validity of the PTED Scale was demonstrated by the level of concordance (90.7%) with clinical judgments. Convergent validity could be shown, as there were significant correlations with the Bern Embitterment Scale, the IES and the SCL-90-R.

When interpreting the data, several limitations of the present study must be taken into consideration. The Data were obtained using the original German version of the PTED Scale. Further investigations in anglophone populations are needed in order to assess the psychometric properties of the English version of the PTED Scale. Another shortcoming of the present results is that they were obtained with two differing versions of the PTED Scale (17- and 19-item version). Even though it is not likely, one cannot rule out that the alteration of the scale had an influence on the results.

6. Translations

Among the PTED self-rating scale in English there are versions in Turkish, Korean, Croatian and German. The German version contains an additional diagnostic interview.

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8. Appendix

Figure 1: Frequency distribution for each item for the unselected inpatients sample (n = 100)

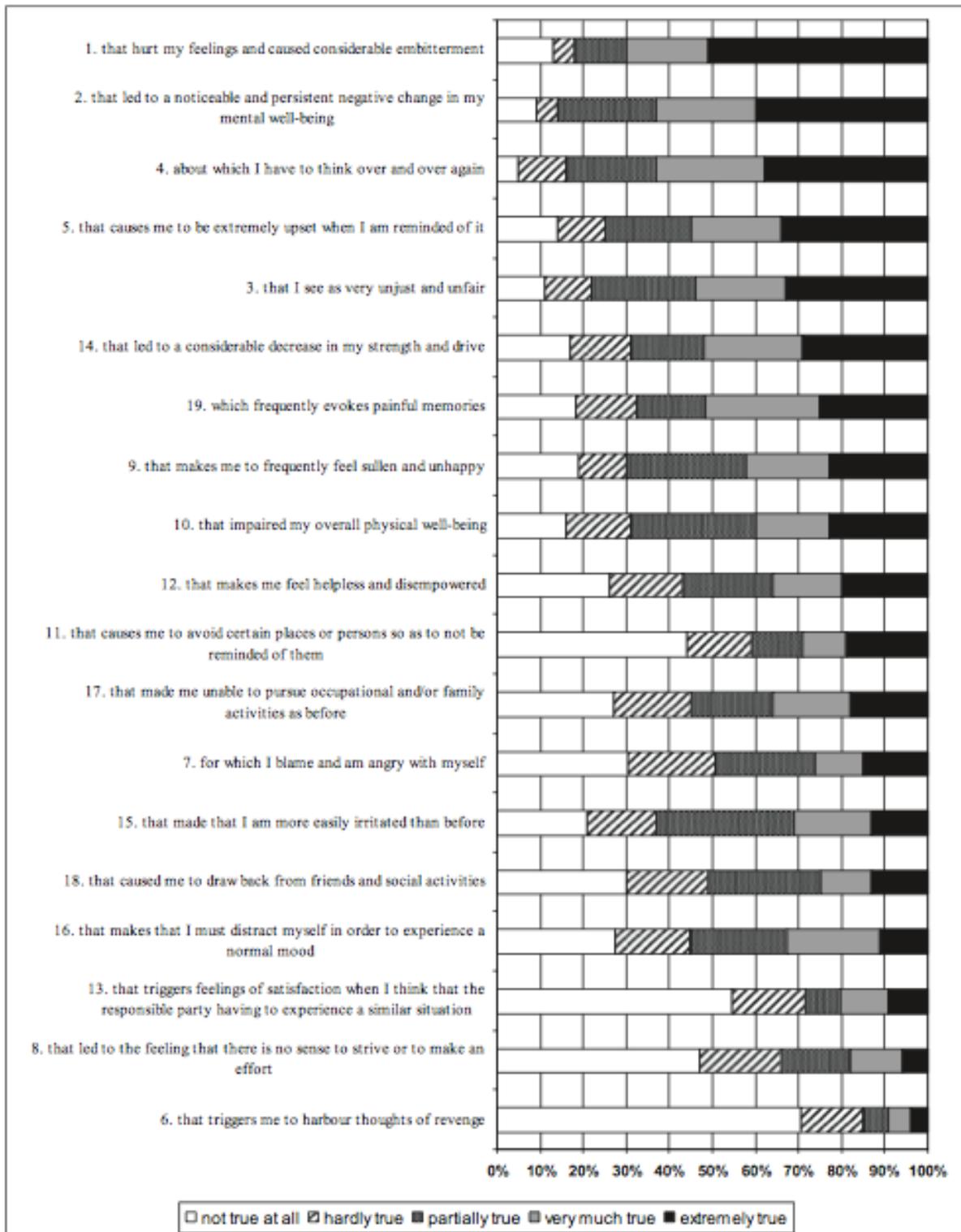


Figure 2: Frequency distributions of four different samples on the Post- Traumatic Embitterment Disorder (PTED) Scale (mean total scores)

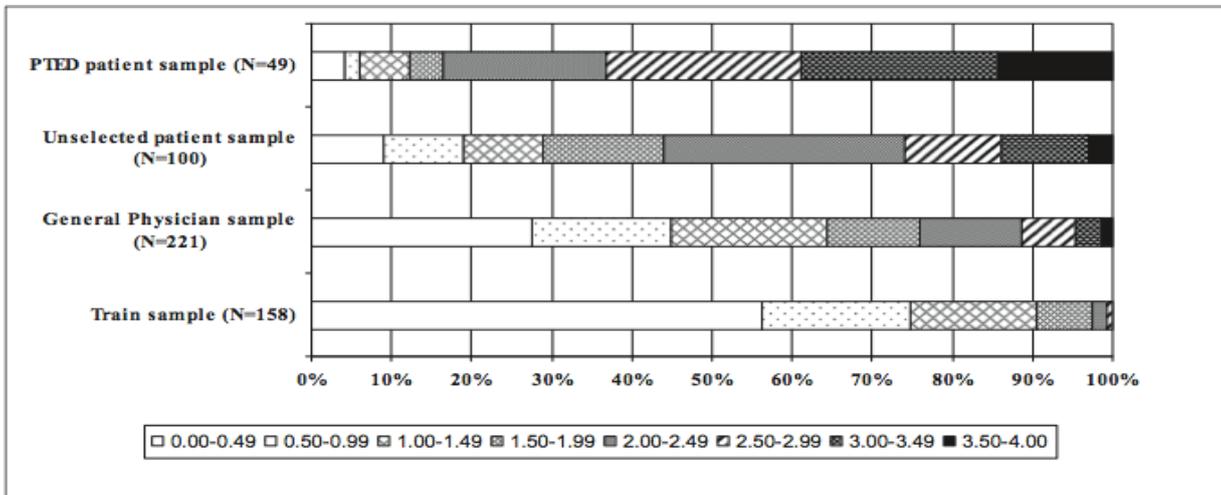


Table 1: Spearman rho coefficients (time interval of 6–8 days), rotated factor solution and within-group correlations with the discriminant function

PTED Scale items	Spearman rho coefficients	Factor I	Factor II	Pooled within-group correlations with the discriminant function
1. That hurt my feelings and caused considerable embitterment	0.640**		0.55	0.639
2. That lead to a noticeable and persistent negative change in my mental well-being	0.706**	0.74		0.594
3. That I see as very unjust and unfair	0.716**		0.70	0.652
4. About which I have to think over and over again	0.742**	0.60		0.693*
5. That causes me to be extremely upset when I am reminded of it	0.713**	0.58		0.739
6. That triggers me to harbour thoughts of revenge	0.540**		0.70	0.432*
7. For which I blame and am angry with myself	0.620**		0.62	0.385
8. That led to the feeling that there is no sense to strive or to make an effort	0.663**	0.52		0.693
9. That makes me to frequently feel sullen and unhappy	0.819**	0.84		0.697
10. That impaired my overall physical well being	0.753**	0.80		0.631
11. That causes me to avoid certain places or persons so as to not be reminded of them	0.796**	0.49		0.508
12. That makes me feel helpless and disempowered	0.726**	0.67		0.700
13. That triggers feelings of satisfaction when I think that the responsible party having to experience a similar situation	0.537**		0.57	0.432*
14. That lead to a considerable decrease in my strength and drive	0.783**	0.89		0.601
15. That made that I am more easily irritated than before	0.681**	0.75		0.680
16. That makes that I must distract myself in order to experience a normal mood	0.775**	0.84		0.663
17. That made me unable to pursue occupational and/or family activities as before	0.742**	0.81		0.588
18. That caused me to draw back from friends and social activities	0.722**	0.62		0.356
19. Which frequently evokes painful memories	0.867**	0.79		0.6931
Mean total	0.713**	Variance explained: 39.19%	16.06%	

** Significance level ≤ 0.01 .

The within-group correlations with the discriminant function are obtained from a 17-item version of the PTED Scale. In this version, items 6 and 13 and 19 and 4 had been summed up in one item. The coefficients marked with an asterisk are obtained by these summed up versions of the respective items.

PTED = post-traumatic embitterment disorder.

The PTED Self- Rating Scale.

Name: _____ Date: _____

Please read the following statements and indicate to what degree they apply to you.

Please do not miss a line:

I agree with this statement

During the last years there was a severe and negative life event

1. that hurt my feelings and caused considerable embitterment
2. that led to a noticeable and persistent negative change in my mental well- being
3. that I see as very unjust and unfair
4. about which I have to think over and over again
5. that causes me to be extremely upset when I am reminded of it
6. that triggers me to harbour thoughts of revenge
7. for which I blame and am angry with myself
8. that led to the feeling that there is no sense to strive or to make an effort
9. that makes me to frequently feel sullen and unhappy
10. that impaired my overall physical well being
11. that causes me to avoid certain places or persons so as to not be reminded of them
12. that makes me feel helpless and disempowered
13. that triggers feelings of satisfaction when I think that the responsible party having to experience a similar situation
14. that led to a considerable decrease in my strength and drive
15. that made that I am more easily irritated than before
16. that makes that I must distract myself in order to experience a normal mood
17. that made me unable to pursue occupational and/or family activities as before

	not true at all	hardly true	partially true	very much true	extremely true
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4
	0	1	2	3	4

18. that caused me to draw back from friends and social activities

19. which frequently evokes painful memories

0	1	2	3	4
0	1	2	3	4