

# Standardization of the Korean Version of the Posttraumatic Embitterment Disorder Self-Rating Scale

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**Objective** Embitterment is a persistent feeling of being let down or insulted, feeling like a “loser”, or feeling revengeful but helpless. In South Korea, social injustice experienced during rapid industrial development and protracted unemployment during the Asian economic crisis may lead to strong feelings of embitterment. North Korean defectors and victims of industrial disasters may also experience humiliation and feelings of injustice. Posttraumatic Embitterment Disorder (PTED) is a recent conceptualization of a new psychiatric disorder. This study tested the reliability and validation of the Korean version of the PTED Scale.

**Methods** Subjects aged 18 years or older were recruited from a psychiatric outpatient clinic. All subjects were diagnosed with a depressive disorder. Subjects completed the Korean version of the PTED Scale, the Patient Health Questionnaire (PHQ-9) and the Patient Health Questionnaire (PHQ-15) at baseline and two weeks later.

**Results** Approximately 15.4% of subjects could be categorized as having PTED. The test-retest reliability of the PTED Scale was good ( $r=0.76$ ) and the internal consistency was very high (Cronbach's  $\alpha=0.962$ ). Positive correlations were found between the PTED Scale, the PHQ-9 and the PHQ-15, indicating substantial convergent validity of the PTED Scale.

**Conclusion** The Korean version of the PTED Scale is a reliable and valid measurement of embitterment in Korean adults as an emotional reaction to a negative life event.

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**Key Words** Embitterment, PTED, PHQ-9, PHQ-15.

## INTRODUCTION

Embitterment is a persistent feeling of being let down or insulted, feeling like a “loser”, or feeling revengeful but helpless. Embitterment is often experienced as a consequence of a negative life event. For example, embitterment has been observed in east German people who had experienced sudden, uncontrollable events such as the sudden and unexpected loss of a job or uncertainty during the unification of Germany.<sup>1</sup>

In South Korea, social injustice during the rapid industrial development after the Korean war and the recent protracted

unemployment during the Asian economic crisis may be causes of feelings of embitterment in Koreans.<sup>2</sup> Additionally, North Korean defectors and victims of industrial disaster may also experience humiliation and feelings of injustice. Further, it is likely that an increased number of people may experience feelings of embitterment during the unification of South and North Korea, similar to those experienced by people during the unification of Germany. Therefore, the term ‘embitterment’ may be very meaningful for Korean people.

Historically, embitterment is a familiar concept for Koreans because the term “Haan (한 恨)” reflects feelings similar to the western definition of embitterment. Additionally, the Korean culture-bound syndrome, Hwa-Byung (literally means “fire disease”), is understood as an anger syndrome and has been typically viewed as a result of longstanding life stress, endurance and difficulty in expressing negative feelings within a rigid social and familial structure.<sup>3-6</sup> Haan and Hwa-Byung may be similar to feeling embitterment and experiencing posttraumatic embitterment disorder (PTED), respectively.

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PTED is a relatively recent conceptualization of a new psychiatric disorder. Linden<sup>1</sup> introduced the concept of PTED, which acknowledges embitterment and its possible pathological consequences. Linden<sup>1</sup> described PTED as a distinct subgroup of adjustment disorders in which the trigger event is normal negative life event such as unemployment, divorce or death of a relative. Diagnostic criteria of PTED are: 1) development of symptoms followed by a single, exceptional, normal negative life event; 2) the event is perceived as unjust, an insult, and humiliating; 3) the event evokes feelings of embitterment, rage, and helplessness; 4) the event leads to emotional arousal in the person when reminded of the event.

Linden et al.<sup>7</sup> created a PTED self-rating scale that is a 19-item questionnaire to assess features of embittered reactions to negative life events. In this paper, authors translated the PTED Scale into Korean and tested its reliability and validity. The aim is to provide the screening instrument that helps diagnosis and treatment for this novel psychiatric disorder in Korea. Additionally, we report preliminary data on PTED prevalence and characteristics of the disease among Korean patients with depression.

## METHODS

### Participants

Subjects were recruited from a psychiatric outpatient clinic at a university hospital. Subjects were aged 18 years or older and were diagnosed with a depressive disorder according the Diagnostic and Statistical Manuals of Mental Disorders fourth edition, text revision (DSM-IV-TR) criteria.<sup>8</sup> All subjects completed the Korean version of the PTED Scale at baseline and 2 weeks after baseline. Subjects also completed the PHQ-9 and PHQ-15 Patient Health Questionnaires. All subjects provided written informed consent before participation. All study procedures were reviewed and approved by the hospital institutional review board.

### Measurements

#### PTED self-rating scale

The PTED scale is a 19-item questionnaire designed to assess the symptoms of PTED. For each item, respondents are asked to indicate to what extent the statement applies to them on the following five-point Likert scale: 0, "not true at all"; 1, "hardly true"; 2, "partially true"; 3, "very much true"; and 4, "extremely true." In a previous report, the Cronbach's alpha of this questionnaire was reported to be 0.93, indicating a high internal consistency. The Spearman rho correlation coefficient was 0.71 for the sum score, with a range of 0.53-0.86 for individual items, indicating adequate test-retest reliability of the

PTED Scale.<sup>7</sup>

The original German version of the PTED Scale was translated into English by Linden and coauthors and subsequently reviewed and edited by an American English native speaker.<sup>7</sup> Translation and back translation of the PTED Scale were done following state-of-the-art procedures for cross-cultural assessment.<sup>9</sup> The translation was checked until the clinicians felt that the Korean version corresponded closely to the English version and would be meaningful to Koreans.

#### The Patient Health Questionnaire-9 (PHQ-9)

The nine-item version of the Patient Health Questionnaire is an instrument used for screening, diagnosing, and assessing the severity of depression.<sup>10-12</sup> Each item is rated on a scale from 0 to 3. The total score can range from 0 to 27. This measure has been widely used in primary care settings for psychiatric purposes.<sup>13</sup> The Korean version of the PHQ-9 has been translated and validated (Cronbach alpha=0.86,  $r=0.74$ ).<sup>14</sup>

#### The Patient Health Questionnaire (PHQ-15)

The 15-item version of the Patient Health Questionnaire is a somatic symptom severity subscale derived from the full PHQ.<sup>15,16</sup> It assesses 15 somatic symptoms or symptom clusters that account for more than 90% of all physical complaints reported by outpatients.<sup>17-19</sup> Each item is rated on a scale from 0 to 2, and total scores can range from 0 to 30. The PHQ-15 has also been translated and validated in Korean (Han et al., 2009). The Korean version of the PHQ-15 has shown good validity and reliability (Cronbach alpha=0.87,  $r=0.56$ ).<sup>20</sup>

### Statistical analysis

Cronbach's alpha coefficient was used to assess the internal consistency of the PTED scale. To explore test-retest reliability, Pearson's correlation coefficient was calculated using 2-week assessment of PTED scores. Convergent validity of the PTED scale was verified by comparing PTED scores with scores from the PHQ-9 and PHQ-15. We calculated the Pearson's correlation coefficient to examine the relationships among the PTED, PHQ-9 and PHQ-15 scores. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS) for Windows, Version 12.0 (SPSS Inc., Chicago, IL, USA).

## RESULTS

A total of 194 subjects (130 females, 64 males) participated in this study. The mean (SD) age of the subjects was 48.84 (15.95) years. The mean total score of baseline measurements were  $9.22 \pm 7.28$  on the PHQ-9,  $8.54 \pm 6.04$  on the PHQ-15, and  $27.82 \pm 19.38$  on the PTED Scale. A PTED diagnosis was assumed based on the mean total score on the PTED Scale (PT-

ED total score divided by the number of items; cut-off score=2.5).<sup>7,21</sup> A total of 30 subjects (15.4%) had a mean total PTED score greater than 2.5 points.

A total of 96 subjects (65 females, 31 males) completed the PHQ-9, PHQ-15 and the PTED Scale at two weeks. The mean total PTED score was 1.56±1.04 at baseline and 1.49±1.03 at two weeks. The mean PHQ-9 score at baseline was 10.47±7.55 and at follow-up it was 9.61±7.65. The mean PHQ-15 score at baseline was 9.6±6.16 and at follow-up it was 9.06±6.49. Demographic data of these subjects are presented in Table 1.

**Reliability**

Cronbach's alpha for the total scale was 0.97, which reflected high internal consistency (Table 2). Pearson's correlation coefficient for inter-item correlation was 0.76 for the sum score, with a range of 0.36-0.74 for individual items (p<0.01) (Table 3).

**Validity**

The PTED total score was positively correlated with PHQ-9 and PHQ-15 scores at baseline and at two weeks. PTED scores were highly correlated with PHQ-9 score (p<0.01). PT-

**Table 1.** Demographic data

	Characteristics	Frequency	Percentage
Sex	Male	31	32.3
	Female	65	67.7
Age	11-20	1	1.0
	21-30	7	7.3
	31-40	23	24.0
	41-50	21	21.9
	51-60	22	22.9
	61-70	15	15.6
	71-80	6	6.3
	80<	1	1.0
Education (years)	6>	7	7.3
	6	17	17.7
	9	16	16.7
	12	33	34.4
	14	9	9.4
	16	13	13.5
	16<	1	1.0
	Job	Yes	26
No		70	72.9
Marital status	Unmarried	10	10.4
	Married	74	77.1
	Divorce	5	5.2
	Bereaved	4	4.2
	Separated	3	3.1

**Table 2.** Internal consistency analysis of the PTED Self-rating Scale (N=194)

Item	Corrected item-total correlation	Cronbach's alpha if item deleted
1.	0.735	0.965
2.	0.774	0.964
3.	0.686	0.965
4.	0.793	0.964
5.	0.868	0.963
6.	0.658	0.966
7.	0.812	0.964
8.	0.782	0.964
9.	0.802	0.964
10.	0.779	0.964
11.	0.715	0.965
12.	0.773	0.964
13.	0.601	0.966
14.	0.732	0.965
15.	0.835	0.963
16.	0.824	0.964
17.	0.781	0.964
18.	0.729	0.965
19.	0.775	0.964

PTED: posttraumatic embitterment disorder

**Table 3.** Test-retest reliability for individual items

PTED Scale items	Coefficients
Item 1	0.610**
Item 2	0.634**
Item 3	0.653**
Item 4	0.546**
Item 5	0.742**
Item 6	0.682**
Item 7	0.616**
Item 8	0.598**
Item 9	0.653**
Item 10	0.554**
Item 11	0.612**
Item 12	0.657**
Item 13	0.405**
Item 14	0.363**
Item 15	0.640**
Item 16	0.610**
Item 17	0.604**
Item 18	0.648**
Item 19	0.697**
Sum	0.762**

\*\*p<0.01. PTED: posttraumatic embitterment disorder

**Table 4.** Correlations among PHQ-9 (1st), PHQ-15 (1st) and PTED Scale (1st)

	PHQ-9-1st	PHQ-15-1st	PTED-1st
PHQ-9-1st	1		
PHQ-15-1st	0.645**	1	
PTED-1st	0.781**	0.641**	1

\*\*p<0.01. PHQ: Patient Health Questionnaire, PTED: posttraumatic embitterment disorder

ED scores and PHQ-15 scores were also positively correlated ( $p<0.01$ ). Correlations between the PTED, the PHQ-9 and the PHQ-15 scores are shown in Table 4.

## DISCUSSION

The Korean version of the PTED Scale was shown to be stable and reliable. High internal consistency was found for the Korean version of the PTED Scale. Additionally, in this study the Korean version of the PTED Scale demonstrated good test-retest reliability. The percentage of subjects who might be diagnosed with PTED was 15.4%. Previous studies have reported that the prevalence of PTED based on the PTED Scale was 2-3% among the general population and 53% among psychiatric inpatients.<sup>1</sup> The results of the present study indicate that the prevalence of PTED in the Korean population should be validated using a formal diagnostic interview.

A high positive correlation was found between the PTED Scale and the PHQ-9. Patients with depressive disorder frequently report symptoms common to PTED (e.g., anger, unforgiveness or rumination).<sup>22</sup> Linden et al.<sup>7</sup> assumed in their study that many patients who were diagnosed with depressive disorder actually had PTED. However, PTED can be comorbid with depressive disorder rather than being exclusively diagnosed. Further studies are needed to evaluate the relationships between depressive disorder and PTED.

In the present study, PTED Scale scores were positively correlated with PHQ-15 scores, which implies that Korean PTED patients may report multiple somatic complaints. There are conceptual similarities between PTED and Hwa-Byung, a Korean culture-bound anger syndrome. It is possible that PTED patients in the Korean population experience somatic symptoms in common with Hwa-Byung patients. Future studies are needed to examine whether these somatic complaints are limited to Koreans.

This study has a few limitations. First, our findings may not be generalizable to people in other areas of Korea. More studies are needed to include a more representative sample. Another limitation is the fact that all participants were being treated for their depression, which may have affected their responses. Thirdly, a self rating scale was developed for screening

a disorder and not for making a diagnosis. In this study, authors did not perform structured diagnostic interview or other event-related scales. Hence, we could not report the sensitivity or specificity of translated scale. Instead, we tested the convergent validity of the PTED Scale with the PHQ-9 and PHQ-15 because PTED overlap symptom profile with depressive disorders.

In conclusion, this study showed that the Korean version of the PTED Scale is a valid and reliable measure for assessing embitterment, an emotional reaction to negative life events. It is expected that the PTED Scale will be widely used in clinical settings and be helpful in uncovering characteristics of PTED in the Korean population.

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