

ASSESSING EMBITTERMENT IN UNIVERSITY POPULATION: A PSYCHOMETRIC STUDY

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ABSTRACT

The objective of this study was to construct a culturally valid Embitterment scale (ES), and to establish psychometric properties of the scale (reliability and validity). Phenomenology was explored; to explore the phenomenology open ended interviews were carried out, of 40 university students (BA/BS Hons), both men (20) and women (20), age ranging from 18 to 25. They were given the operational definition of the construct and were asked, about the characteristics an embittered person. Exploratory factor analysis was done, construct validity and test retest reliability were established. Out of 320 participants, 160 were men and 160 were women. Sample was divided into strata of age, gender and BS level. Convenient sampling was done to collect data from university students. The Embitterment Scale was correlated with Post Traumatic Embitterment Scale (PTES) with $r = 0.62$ and test -retest reliability of ES with $r = .88$ ($p < 0.01$). Factor analysis was carried out, through factor analysis three factors were obtained namely: Interpersonal Conflict, Intrapersonal Distress, and Rigid Sense of Self Righteousness. The embitterment scale was found to have adequate validity and reliability and can be used confidently to assess embitterment in student population.

Keywords: embitterment, university students, culture, young adults.

INTRODUCTION

Embitterment is characterized by thoughts of injustice, revenge and rumination (Dunn & Sensky, 2018; Linden & Maercker, 2011; Linden, 2013; Znoj et al., 2016). Embitterment is seen as a spectrum, impairing daily functioning (Linden & Rotter, 2018), leading to other problems like suicidal ideation (Linden & Noack, 2018). Certain factors make people vulnerable to embitterment and it can be present with other conditions (Blom et al., 2012; Blom et al., 2014; Nanni et al., 2018). Factors that hurt values can cause embitterment (Muschalla & von Kenne, 2020). In context of negative life events, embitterment is getting more attention (Cropely, 2016; Karatuna & Gok, 2014; Michailidis & Sensky et al, 2015). Many factors including social support have been reported to reduce the symptoms of embitterment (You & Ju, 2020). To make it culturally valid embitterment was defined in eastern cultural context, since the process of human development cannot be separated from environmental influences (Matsumoto, 2007). For this study embitterment was defined as “a persistent seething anger that results from adverse psychosocial experiences.”

University students face and are prone to a range of multifaceted problems (Gibbons et al., 2019; Saleem et al., 2013). The literature systematically defining embitterment is scant. In western culture researchers have a scale, called “The PTED Self-Rating Scale” to measure embitterment. Embitterment is not same as aggression or depression. Investigation is needed (Linden et al., 2009). In the light of literature, this is the first systematic attempt to define and develop a rating scale to assess embitterment in university students in Pakistan. “This study would advance the empirical and theoretical literature on the constructs of embitterment. It would provide insight into the cognitive processes and functional consequences of embitterment, and help in differentiating it with other conditions and will help in developing appropriate therapeutic stance (Griffin et al., 2019; Kühn et al., 2018; Linden & Rotter, 2019; Linden, 2020; Linden & Arnold, 2021; Muschalla et al., 2018).

“This study would contribute in an in depth understanding of the construct of embitterment. It would help in early detection and management of the persons who are vulnerable to develop this state leading to other problems.”

REVIEW OF LITERATURE

Embitterment is a construct that can be viewed in the light of various context and situations and it can affect both physical and psychological well being (De Sousa & D'souza, 2020). This is the very emotion that has been ignored by many health professionals, but now it is the focus of attention and interventions are being planned to treat this emotion (Linden, 2020). Studies have been carried out in western collectivistic culture in which this construct was seen in emigrants, fugitives and residents (Linden & Teherani, 2020). Explanative factors of embitterment have been searched out (Muschalla & von Kenne, 2020).

Researchers have also found out the mediating effects of embitterment on other emotions and its comorbidity with other conditions (Khalil & Guillaume, 2020; Kim et al., 2020). Other studies have explored the role of trauma in the development of embitterment. To get a clearer picture, this construct needs to be studied in cultural context, because culture plays a crucial role in shaping one's personality, emotions and thought patterns (Spaaij et al., 2021).

Materials and methods

Phenomenological approach was used to explore the characteristics of embitterment. For this study Embitterment is defined as “a persistent seething anger that results from adverse psychosocial experiences”, this definition was given to 40 university students of BA/BS Hons, both men and women, age ranging from 18 to 25 years. The rationale for selecting university students was that they are prone to and face a lot of problems which can interfere in their academic and other functioning. Phenomenology was explored through one on one open ended interviews, in which they were asked about the characteristics of an embittered person. Further probing was done to clear ambiguities. On the basis of these interviews all the items were collated and a list of 72 items was obtained.

For expert validation, the list of 72 items was given to 10 expert clinical psychologists, selected through purposive sampling, having at least five years of experience. They were given the definition of Embitterment and were asked to rate each item to the extent it reflects Embitterment. They had to rate the items on 5 point scale ranging from 0 to 4. Later, a league table was made and items having equal to and more than 25% scores were retained. Double negative statements were converted into single negative statements, and irrelevant items were excluded from the scale. Expert validation reduced the items from 72 to 44.

In the next phase, the scale consisting of 44 items was piloted on 30 (15 men, 15 women) university students, selected through convenient sampling because university population is usually homogeneous. Since, it was very difficult to select the participant through random sampling and it was demanding much time, which was out of the time limit of this research, so participants were selected through convenient sampling. The purpose of pilot study was to see if the scale was user friendly and the items and instructions were easy to understand. This phase revealed no item difficulty. All 44 items were retained for final scale.

The main study was aimed to establish the psychometric properties of the Embitterment Scale.

Participants. The sample consisted of 320 (47 protocols out of 367 were discarded because of missing items) university students both men (160) and women (160) from college and universities, age ranging from 18 to 25 years, with mean age of 20.67 (SD= 1.52), selected through convenient sampling. Sample was further divided into strata of grade levels i.e. BS (Level I, Level II, Level III, Level IV).

Inclusion criteria. Participants who were studying, falling in the age range of 18 to 25, and those who were single and not doing any job were included in the study

Exclusion criteria. Participants, who were not falling in the age range of 18 to 25, were not studying in any university or were students of intermediate or M.Phil/MS, and were doing job, were not included in the study.

Measures.

Embitterment Scale (ES). For measuring embitterment the Embitterment Scale was developed. ES consists of 44 items that were collected through open ended interview from university students. There are 5 options. The scoring options include (0) not at all, (1) rarely, (2) sometimes, (3) often, (4) always.”

Post Traumatic Embitterment Disorder Scale. For concurrent validity another scale was used i.e. Post Traumatic Embitterment Scale, developed by Linden (Linden, 2009) and adapted by students in University of Management and Technology. The translated version has 26 items. Permission was obtained to use this scale.

Procedure. Aims and objectives of the study were shown to the concerned authorities of 4 universities to get permission. Participants were approached in class settings, purpose of the study was mentioned to the students, consent to take part in the study was taken, confidentiality was assured. They had the right to withdraw from the study at any time. Participants were given the research protocols to fill. The average testing time was 15 minutes. For test retest reliability of ES 20% (67) of the participants were retested after one week. 71 participants were approached but 6 participants declined to take part in the study for the second time.

Data was collected from 367 participants; 47 protocols were discarded because of missing items, the 320 participants fully completed the protocols so these protocols were used for the study. After data collection, data was entered into SPSS (21.0) for analysis.

Ethical considerations: written official permission was obtained from Institutional Board Committee of Department of Clinical Psychology, University of Management and Technology, Lahore on 15-12-2020. IRB # 2019-05-029. Participants were informed about the purpose of the study; they had the right to withdraw from the study at any time. Confidentiality was assured.

RESULTS

This section describes the factorial structure, reliability and validity of ES. The factor analysis was used to determine the factorial structure of the Embitterment Scale. Varimax rotation was used to obtain underlying factor structure of 44 items. Scree plot was obtained to determine the number of factors. Kaiser-Meyer Olkin Measure of Sample Adequacy (KMO) was found to be .83.

Factor Analysis

To establish underlying factors of Embitterment items Eigen value greater than 1 criteria was used. Scree plot provide the graphical representation of the Eigen values. Initial factor solution using Scree plot indicated 6 factors on elbow. In order to have a clear picture four and three factor solution were carried out. The three factor solution where the factor loading was equal to or greater than .30 gave dubious items, so factor loading was changed to .40. Through this process 15 items were excluded from the scale with less than .40 loading and 29 items were retained.

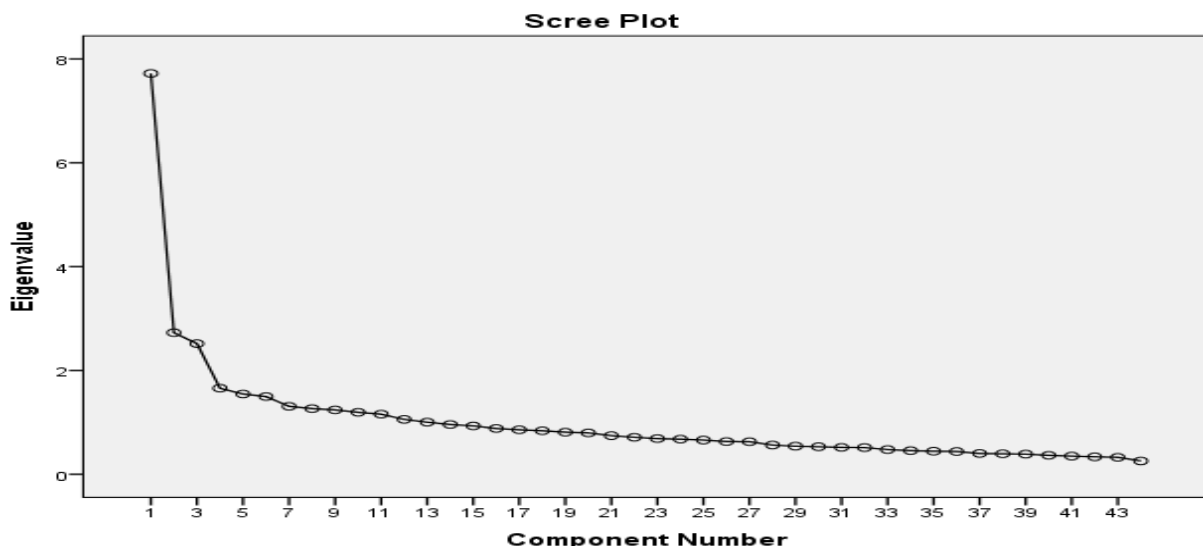


Figure 1. Scree plot showing extraction of factors of Embitterment Scale.

Table 1*Factor loadings for Embitterment Scale*

Sr. No	Item No	FI	FII	FIII
1	10	.49	.29	.07
2	14	.55	.02	.26
3	15	.68	-.03	-.06
4	17	.49	.10	-.10
5	23	.52	.21	.02
6	25	.61	-.11	.07
7	29	.68	-.01	.06
8	30	.60	.27	.01
9	32	.61	.05	.17
10	33	.42	.33	.04
11	34	.51	.05	-.11
12	38	.50	.09	-.17
13	39	.43	.30	-.03
14	41	.47	.45	.01
15	1	.00	.56	.05
16	11	.27	.41	.09
17	20	.05	.65	-.01
18	24	.28	.44	.06
19	28	.25	.65	.06
20	31	.19	.52	.16
21	36	-.00	.56	-.01
22	40	.34	.56	-.19
23	2	-.15	.07	.46
24	3	-.15	-.03	.57
25	4	.26	-.06	.49
26	5	.02	.08	.50
27	13	.29	.01	.43
28	18	.06	.05	.57
29	22	.07	.25	.41

Factor Description

Each factor was assigned a label on the bases of commonalities of themes emerged.

Factor I: Interpersonal Conflict. The first factor consists of 14 items. A high score on this subscale indicates the tendencies of criticism, bitterness, impulsiveness and thinking about taking revenge. The sample items include for example: being unhappy with one's current condition, feeling superior and jealous, and bitterness in temperament, difficulty in keeping relations, being unhappy on someone's progress, low level of frustration tolerance and expressing anger on little things.

Factor II: Intrapersonal Distress. The second factor consists of 8 items. A high score on this scale refers to the tendencies of irritation, social avoidance, and self centeredness, feeling lonely and restless. The sample items include for example: easily getting irritated, trying to escape others, ruminating the same thing, not trusting anyone, feeling lonely and restless, rigidity in temperament and being highly sensitive

Factor III: Self Righteousness. The third factor consists of 7 items. A high score on this subscale indicates the tendencies of straightforwardness, following principles, being judgmental and competitive. Items include for example: being straightforward, rigidity in following principles, judging someone at first sight, competing others and thinking about the negative aspect of things.

Table 2*Inter correlation of Factors for Embitterment Scale*

Factors	FI	FII	FIII
FI	-	.57**	.20**
FII	-	-	.15**
FIII	-	-	-

df = 319, ** $p < 0.01$

Table 2 indicates a positive correlation among all three factors i.e. Interpersonal Conflict, Intrapersonal Distress, and Self Righteousness. There is a strong positive correlation (.57**) between Interpersonal Conflict and Intrapersonal Distress, a strong positive correlation (.2**) between Interpersonal Conflict and self Righteousness, whereas there is a weak positive correlation (.15**) between Intrapersonal distress and Self Righteousness.

Table 3*Mean, Standard Deviation and t values of Men and Women on three factors of ES.*

Factors	Men	Women				
	M (SD)	M (SD)	t (320)	LL	UL	Cohens'd
Interpersonal Conflict	21.36 (10.50)	18.44 (8.92)	2.67	.77	5.06	0.3
Intrapersonal Distress	15.01 (6.31)	16.68 (6.48)	-2.33	-3.07	-.26	-0.26
Self Righteousness	14.64 (4.19)	12.95 (3.89)	3.74	.80	2.58	0.42

df = 319

The table 3 indicates that there is significant difference between university men and women on factors of Interpersonal Conflict, Intrapersonal Distress and Self Righteousness of Embitterment Scale. Men tend to score high on Interpersonal Conflict and Self Righteousness whereas on the factor of Intrapersonal Distress women scored high.

Psychometric properties of ES.

To determine the psychometric properties of ES concurrent validity and test retest reliability were computed

Concurrent validity. The concurrent validity of ES is established with PTES. The ES was correlated with PTES with $r = 0.62$.

Test-retest reliability. To establish test retest reliability ES was re administered to 20% (67) of the participants after one week. The results showed the test retest reliability of ES with $r = .88$ ($p < 0.01$) which indicates significant correlation between scores of two administrations of ES.

DISCUSSION

Embitterment is a complex emotion (Linden & Maercker, 2011). In this study the phenomenology of embitterment was explored. Items were collected and collated and then transformed into a 5 point rating scale (ES). Factor analysis of 44 items revealed 3 factors namely; Interpersonal Conflict, Intrapersonal Distress and Self Righteousness. Interpersonal conflicts in an embittered person may come from the need to control others which is obvious from the scale items. The person may feel bitterness when the need to control others is not fulfilled. This unsatisfied need may lead him to think that he doesn't have any impact in his social sphere which can result in the form of intrapersonal distress which in turn may take the form of rigid behavior or rigid principles. Significant difference has been found between university men and women on all the three factors of Embitterment Scale. Men scored high on Interpersonal Conflict and Self Righteousness, whereas women scored high on the factor of Intrapersonal Distress.

Embitterment scale has shown to have high level of internal consistency, test retest reliability and acceptable level of concurrent validity

LIMITATIONS AND SUGGESTIONS

This study represents the experience of university students (BA/BS hons). However, it may not be representative of the other population who are not students and don't fall in this age range. Furthermore, this scale can be used for research and clinical purposes.

This approach uses self rating so other projective and indirect methods can be designed for more valid results.

CONCLUSION

The current research is an attempt to develop a culturally specific embitterment scale. The results of this study reveal that this scale is a culturally valid and reliable instrument to assess embitterment in university population and it can be used to diagnose the trait of embitterment which in turn can help in intervening timely.

Disclaimer: It is declared that the abstract has not been previously published or presented in any conference. This manuscript is part of my PhD project.

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