

Assessing Positive Changes among Flood Affected Individuals: Translation and Validation of Post-Traumatic Growth Inventory - Short Form (PTGI-SF)

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Abstract

Objective: To describe and evaluate the efficacy of an Urdu translation of Post-Traumatic Growth Inventory-Short Form (PTGI-SF) that is designed to measure the positive changes in flood affected Individuals.

Study type, settings and duration: A cross-sectional population-based study was done on the individuals (who experienced 2010 floods) in Pakistan between March 2012 and June 2012.

Subjects and Methods: Sample of 1990 participants was taken from different flood-affected regions that included both men and women (n= 1400 (71.4%), and n= 590 (29.6%)) respectively. The age range of the participants was 16 to 66 years (Mean= 28.25 $\pm$ 9.57). Reliability and validity of the PTGI-SF were examined and results of confirmatory factor analysis (CFA) were reported.

Results: The translated version of PTGI-SF was described and validation information was provided. The PTG-SF showed high internal consistency with Cronbach's alpha (α = 0.85) for the total scale. CFA indicated a good fit of the model to the data with all recommended items loading well on respective subscales. The values of lambda ranged from 0.47 to 0.79. The values of fit indices (incremental fit index (IFI)= 0.96; normed fit index (NFI)= 0.94; comparative fit index (CFI)= 0.96; and root mean square error of approximation (RMSEA)= 0.06 were in acceptable range. The factor structure of PTGI-SF scores in our data was consistent with the original scale. It has satisfactory convergent and discriminant validity with measures of wellbeing, rumination, post-traumatic stress, anxiety, depression, and social support.

Conclusion: The PTGI-SF Urdu was brief and effective measure for assessing growth, following adversity. The Urdu version of the scale has exhibited sound psychometric properties. Our data CFA supported a five-factor model. It is culturally valid and reliable instrument which can be used in both clinical as well as research settings. However, it can be used with much confidence with the population affected in a natural disaster.

Key words: Post traumatic growth, translation, validation, flood affectees, Urdu.

Introduction

Post-traumatic growth (PTG) has been defined as positive psychological change experienced as a result of confronting with profoundly upsetting

life events.¹ Post adversarial growth has been elucidated in philosophy, literature, and religion. However, the systematic inquiry of this phenomenon is somewhat new. Post adversity growth have been described through several concepts in the literature and researchers have used various distinctive terms to describe individuals' reports of positive outcomes despite adversity including; adversarial growth, benefit-finding, stress-related growth, positive by-products, perceived benefits, stern transformation, flourishing, positive psychological changes, thriving² and post traumatic growth. Each of the term indicates to a marginally distinctive phenomenon. It refers to a betterment following a severe upsetting event rather than minor day to day stressors. This term differs from hardiness, coping, and resilience, which depict individuals who have adjusted effectively regardless adversity.^{3,4} Growth following

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adversity have been reported to occur in five domains of an individual's life including; life appreciation, improving relationships, identifying new possibilities in life, a sense of spiritual awakening and personal strength. After experiencing a traumatic event, survivors start to give more attention to those small things that were once considered less significant. Identify new opportunities that did not exist before and perceive emotional connectedness. They perceive more strength to deal with future challenges of life, and have the subjective perception of better understanding regarding spiritual matters.⁵

Attempts have been made to understand the post traumatic growth (PTG) in disaster ridden population. An important step in expediting research in this area is to develop measures that quantify this construct. Although a variety of psychometric assessments have been devised to measure growth following adversity. These include: Perceived Benefit Scales,⁶ changes in Outlook Questionnaire,⁷ Stress-Related Growth Scale,⁸ The Thriving Scale⁹ and Posttraumatic Growth Inventory (PTGI).¹⁰ PTGI is originally based on the functional descriptive model and assesses the five facets of positive changes. The five-factor structure of PTGI has been replicated with diverse populations¹¹ and validated through confirmatory factor analyses.¹² To measure the post adversarial growth, this inventory was frequently used with variety of population in diverse situations.¹³ It was considered an appropriate measure of positive post trauma changes. This 21-items measure was initially developed on the basis of available literature on trauma, person's experiences on stressful/traumatic events and interviews with individuals who are dealing major life crises. Moreover, it was developed with the predominantly white sample and the nature of stressful events were death of someone close, assaults, serious medical condition, contact with the events of 11 September 2001, significant school-related issues, family stresses, intimate relationship problems, work/ job related stresses, motor vehicle or other accidents etc.

The PTGI is a frequently used self-report measure having satisfactory reliability, replicable factor structure support for concurrent validity.¹⁴ The validity and reliability of PTGI have been confirmed by many researchers conducted with diverse population across cultures and especially with those individuals who had undergone stressful events. Strong evidences of convergent and discriminant validity were seen with other scales of wellbeing and growth.^{15,16} In addition, scale have satisfactory construct validity. This was supported by correlation analysis. This is evident by the relationship between

PTGI and the Impact of Event Scale.¹⁷ However, PTGI is comparatively lengthy measure both for the researchers and practitioners; therefore, a short form of PTGI in English language was developed.¹⁸ PTGI-SF was developed with the objectives to reduce the number of items, while not losing any information and retaining the original scale properties. Compared to other inventories, PTGI-SF represents a reasonably short measure. It helps researchers to get information in restricted time. To be more specific, this is very useful measure in various crisis situations. Besides, there are many convincing reasons to support the shorter form of this scale. For instance, for some people in some circumstances, even to complete a 10 - item measure is a difficult task and may require too much effort. Under some circumstances, data collection time is short, and only shorter version of the scale can be used. Similarly, most of the time research involves the administration of various assessments and the administration of lengthy measures are not good choice when the respondents are with ill health or with limited energy. In addition, PTGI is one of the most valuable and applicable assessment tool that had the capacity to measure post adversarial growth in both clinical and nonclinical population simultaneously. Hence, PTGI-SF has many advantages over the lengthy measures.

There is also lack of cost-effective and readily available tests in Urdu language that screen the various dimensions of growth in a single instrument. Hence, this study tries to minimize this gap and examine the psychometric properties of the PTGI-SF with flood affected population. The present research translated and validated PTGI-SF in Urdu on a community sample affected in a natural disaster. The translation and validation was done while keeping in mind the guidelines proposed by Brislin.¹⁹ Most of the studies on post adversity growth by using PTGI have been carried out in western cultures and the efficacy of this instrument to other cultures was not clear. Besides, past studies that evaluated the reliability and validity, the samples used were the patients or the general community. Whereas, it is imperative to see the reliability and validity of this scale as well as the construct validity (discriminant and convergent) of this Urdu translated version of the scale. Past empirical research that studied the psychosocial and personality correlates of growth find that rumination patterns, perceived social support, subjective wellbeing, and trauma- related psychological symptoms were co-related to PTG,²⁰ while, anxiety and depression were not associated with growth. Keeping in mind the paucity of research on the factor structure of PTGI-SF in Pakistan, the

determination of the psychometric properties of this scale on the flood affected individuals were essential. Moreover, despite the fact that there are certain challenges related to the factor structure of the scale, so, rather than other issues, we solely focused on the construct validity. To be more specific, the aim of present study was to translate the PTGI-SF into Urdu and to see validity, reliability and other psychometric properties of the scale. It also aimed to investigate whether the original "five-factor structure" was replicable in Pakistani flood affected individuals.

Methodology

A sample of 1990 individuals was collected from several flood-affected regions of Pakistan by employing purposive sampling technique. Prior to data collection, respondents were asked to sign on the consent form that they were willing to participate in this research. Furthermore, they were briefed about the nature of the study and were ensured about the confidentiality of the data. Data was collected between March 2012 and June 2012.

Besides, demographic sheet, Urdu translated versions of the following scales were used for data collection.

Post-Traumatic Growth Inventory-Short Form (PTGI-SF)¹⁸ inventory has ten items and five subscales including items related to post adversity relationships, identification of new possibilities in life, discovering sense of personal strength, spiritual awakening, and valuation of life. To see the post trauma changes, participants rated themselves on a 6-point Likert scale with response options ranging from 0 to 5. The higher the scores on this scale would indicate the higher PTG. To confirm translation accuracy and fulfil the conditions of adaptation of established scales, the PTGI-SF was translated into Urdu and then back-translated into English. The whole translation and validation was done in four steps including forward translation in Urdu, back translation in original language, committee approach to choose the best translation, and cross language validation.

Psychological problems like depression, anxiety and stress were measured by using Depression Anxiety Stress Scale (DASS).²¹ This is a self-report, 4-point rating scale with 21-items. High score on each subscale would be the indicative of higher depression, anxiety, and stress.

Post trauma psychological stress was assessed by using Impact of Event Scale (IES).²² It comprises of 15 items. It has two subscales that measures both trauma related intrusions and symptoms related to avoidance. Total score can also be calculated. IES is 4-point rating scale.

Event Related Rumination Inventory (ERRI) was designed to assess the two styles of rumination (Intrusive and Deliberate rumination).²³ It is a 4-point Likert scale. 10 items tap the intrusive rumination patterns. The subscale deliberate rumination had also 10 items that assesses the reflective thought patterns.

To measure the psychological wellbeing, Well-Being Questionnaire (W-BQ12),²⁴ was used. The higher the score on the scale, the greater would be the sense of General Well-being.

Multi-Dimensional Scale of Perceived Social Support (MSPSS)²⁵ was used to assess the perceived social support. It is seven point Likert scale. This scale has 12-item self-reported statements.

Data was analyzed by using SPSS. For Confirmatory Factor Analysis, AMOS was used. Alpha reliabilities of scales used in the study were calculated. For construct validation, correlation analysis was used. While, to see the gender differences, independent sample t-test was used.

For ethical consideration, the study was approved by the institutional ethics committee of National Institute of Psychology.

Results

The study included both male (n= 1400) and female (n= 590) participants with education ranged from matriculation to masters. Almost 70 percent of the participants were markedly affected and almost 9% were severely injured during the flood. In

Table 1: Alpha reliability coefficients, mean, standard deviations, t-test and psychometric of the scales. (N=2000)

Sub-scales	Item	Males		Females		t	α	Range		
		M	SD	M	SD			Potential	Actual	Skew
PTGI-SF	10	29.71	9.79	31.07	9.43	2.72**	0.85	0-50	0-50	-.59
Relating others	2	5.93	2.38	5.99	2.38	.54	0.45	0-10	0-10	-.42
New possibilities	2	5.57	2.54	5.87	2.55	2.37**	0.51	0-10	0-10	-.33
Personal strength	2	6.23	2.54	6.33	2.60	.80	0.68	0-10	0-10	-.50
Spiritual Change	2	7.94	2.47	7.33	2.18	3.25**	0.59	0-10	0-10	-.84
Life Appreciation	2	5.15	2.71	5.59	2.61	3.30**	0.66	0-10	0-10	-.23.

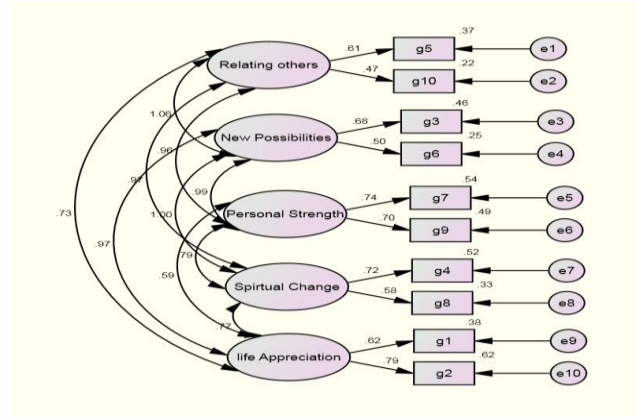
addition, about 72% reported different level of property loss in the flood. In addition, almost 55% were married and 44% were single. Average monthly income of the participants was 12000 PKR. Detailed descriptions of the actual and potential scores of this scale are reported in Table-1.

Table-2 & Figure shows the confirmatory factor analysis (CFA) of the PTGI-SF. First, factor loadings were examined. A minimum criterion of .30 was used for acceptance criteria. Individual item factor loadings were greater than the set criteria (>.3). The loadings ranged from 0.47 to 0.79.

Table-1 shows the psychometric characteristics of the scale including alpha reliabilities, standard deviations, actual and potential scores and skewness values. The values of alpha coefficient of the scale was $\alpha = 0.85$ and the alpha values of subscales ranged from 0.45 to 0.68. The reliabilities of all subscales were satisfactory. However, the alpha coefficient of 'Relating to others' was low. However, for 2 items scale it was not too low. The values suggested the normal distribution of the data. To see the gender differences on PTGI-SF and its subscales results showed that females scored significantly higher on PTG and on the subscales spiritual change, new possibilities, and life appreciation as compared to males.

Table 2: Confirmatory factor analysis of PTGI-SF and its subscales. (N=1990)

Subscales	Item no.	Loadings
Life Appreciation	1	0.62
	2	0.79
New possibilities	3	0.68
	6	0.50
Relating others	5	0.61
	10	0.47
Personal strength	7	0.74
	9	0.70
Spiritual Change	4	0.72
	8	0.58



CMIN/DF=2.74, IFI=.96, NFI=.94, CFI=.96, RMSEA=.06

Figure: Confirmatory factor Analysis of PTGI-SF

The alpha values of the DASS are 0.82, 0.81 and 0.76 for Depression, Anxiety, and Stress. The alpha reliability of IES is 0.80. The alpha values of subscale intrusive rumination were 0.87 and subscale deliberate rumination was 0.89. The alpha coefficient for the Urdu translated scale W-BQ-12 was 0.85. In addition, the alpha coefficient for MSPSS was 0.85.

Table-3 shows the inter-scale correlation between the subscales of PTGI. All subscales were positively associated with each other. The relationship was moderate to high range. To see the convergent and discriminant validity of PTG-SF with other measures, correlation was computed. Findings showed that all the subscales were significantly positively related with the well-being, both intrusive and deliberate ruminations, post-traumatic stress, and stress. However, subscales of PTGI-SF "relating to others" and "spiritual change" were not associated with anxiety and depression, whereas the subscale "personal strength" was significantly negatively related with the anxiety and depression.

Table 3: Relationship between the subscales of posttraumatic growth with other measures.

Dimensions of PTGI	1	2	3	4	5	6	7	8	9	10	11	12	13
Relating Others	-	.50**	.53**	.50**	.40**	.18**	.37**	.17**	.27**	.20**	.02	.01	.06**
New Possibilities		-	.58**	.53**	.56**	.16**	.32**	.23**	.35**	.26**	.09**	.06**	.13**
Personal Strength			-	.52**	.38**	.34**	.36**	.07**	.21**	.13**	-.05*	-.09**	-.02
Spiritual Change				-	.48**	.22**	.41**	.18**	.29**	.21**	-.03	-.04	.06**
Life Appreciation					-	-.04	.31**	.34**	.48**	.37**	.20**	.17**	.25**
M	5.95	6.66	6.26	7.05	5.28	22.05	59.97	14.29	16.95	34.20	6.02	6.85	8.21
SD	2.38	2.55	2.56	2.39	2.68	6.46	15.70	7.58	7.07	17.43	4.63	4.70	4.37

1= Relating others, 2= New possibilities, 3= Personal strength, 4= Spiritual change, 5= Life appreciation, 6= W-BQ12, 7= MSPSS, 8= ERRI (Intrusive), 9= ERRI (Deliberate), 10= IES, 11= Anxiety, 12= Depression, 13= Stress

Note. ** $p < .01$.

Discussion

Many scales have been devised to examine growth, of which PTGI-SF is the most valuable, efficient, and applicable. PTGI-SF maintains and retains the same breadth of information as that was in the original scale. The PTGI-SF has the same factor structure as of the PTGI. PTGI-SF gives separate factor scores as well as the summation give the total score. So the short form gives a comparable and efficient alternative for the PTGI in research where a single global indicator of PTG is also required. However, before using the PTGI-SF, a researcher ought to consider the few things. For instance, there is disagreement on the dimensionality of PTGI, as few studies did not produce the same underlying factor structure during use with other cultures or with non-English speaking samples.²⁶

The possible reasons for not having the same factors structure may be because of the fact that most current published studies were not based on large samples.²⁷ Moreover, there may also be problem with translations because it was not easy task to capture the same phenomena in other languages where it was not possible to find the same phrases or comparative words.

In addition, cultural differences are another important factor that represents diversity and variations in people respond to adversity or the variation in factor structure in different countries/ areas may be because of the differences in the nature of adverse events or the cultural diversity of respondents. Hence, culture appears to be a variable that affects the dimensions of growth in different countries.²⁸ Therefore, different factor structure of this inventory in different populations can be explained in the light of diversity of the culture or the coping styles that an individual is using. So these issues should be taken in to consideration when PTG is used with non-English speaking samples. Moreover, the PTGI-SF can be used when a factor as well as a single total growth score was desired. Besides, few studies reported some potential for factor overlapping; this could be because of disagreement in dimensions of this scale. Furthermore, owing to the fact that, the construct, PTG has the potential to be vastly influenced by the cultures of various communities. This might be the reason that few researches demonstrated strong correlations among the factors.²⁹

The alpha reliability of the subscales of PTGI-SF was satisfactory. Our findings showed a 5-factor model to be the best-fitting solution and showed the evidence of convergent validity and

discriminant validity. All individual items had the loadings greater than 0.30. The indices of validity were satisfactory. The lambda values [λ], indicates items loading ranged from 0.50 and 0.79. This factor structure and validity indices are in line with the past research and showed the cross-validation of the scale. The scale has the satisfactory discriminant and concurrent validity,²³ as our findings showed that PTGI-SF scores were positively associated with trauma exposure, rumination, posttraumatic stress, psychological wellbeing, and life satisfaction. Our assumption further supported by the results that showed the significant relationship between PTG and rumination. These findings were inline with the theoretical models of growth,¹ that further suggest that some level of intrusive thoughts were necessary for growth to happen, because intrusive thoughts facilitate higher order cognitive processing that was an essential part of the adaptation process.³⁰ We found that anxiety and depression were not significantly associated with the some of the subscale of PTG. i.e., relating others and spiritual change and negatively associated with the personal strength. Findings are inline with past research.² Further empirical researches would be beneficent to explore the systematic relationship between PTG and other trauma related measure in longitudinal studies.

Study has certain recommendations and implications. Further prospective research was needed that could re-establish the sensitivity and specificity calculations by replicating these findings with diverse population. Despite the fact that as compared to the full form PTGI, PTGI-SF had slightly lower internal reliability. It was a useful substitute to original long version of PTGI when a relatively brief scale is needed. This would ensure that mental health practioners and researchers are employing the more speedy, cost-efficient, reliable, and valid assessment tools in detecting post adversial growth. It can be used for data collection in any crisis situations in short period of time. Moreover, it would ultimately help in devising the appropriate interventions.

Utilization of convenient sampling technique, use of self-report measures, and study design that is cross-sectional are the limitations of the study. Random sampling techniques would give more generalizable findings. Those participants who were able to read and write were taken as a sample. The question whether western indigenously devised measures should be used with population residing in developing and under-developed countries has been debated for long among researchers. Hence, for such instruments, the cultural and sociodemographic should be considered and before

the use of these scales, cultural appropriateness, sensitivity, and specificity should be clearly monitored. Further cross-cultural studies on post adversity growth related constructs are needed to better comprehend the phenomena.

In the sum up, findings of the current study demonstrated the factor structure of PTGI-SF in community sample that was affected in a natural disaster. The Urdu version of PTGI-SF has sound psychometric properties. It is a culturally valid measure and can be used in diverse research settings including clinical population. Hence, it meets the need of the both scientists and practioners. It can be used with much confidence in population affected with natural disaster. The results supported the five-component structure of PTGI-SF. The PTGI-SF was devised to be a valuable scale for research to gauge the post adversity changes. Overall, the PTGI-SF seems to be a psychometrically sound scale for use in populations affected by disasters.

Conflict of interest: None declared.

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