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THE TRANSFORMATION OF STRENGTH THROUGH STRUGGLE: DEVELOPMENT AND VALIDATION OF POSTTRAUMATIC GROWTH AND DEPRECIATION SCALE

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Abstract
Post-traumatic growth is positive while post-traumatic depreciation is a negative change after struggling with traumatic life events. The study aimed to develop and validate a culture sensitive, Urdu-language scale to measure posttraumatic growth and depreciation in Pakistani Muslim population. At first a pool of 53 items was generated through literature review, focus group discussions (n=4) and semi structured interviews (n=8) of trauma survivors and experts. In Content Validity Index (CVI) total scale- CVI remained .86. A pilot study, with 50 participants, was conducted to evaluate face validity. Through Exploratory Factor Analysis (N=175) four factors were established e.g. self & spiritual metamorphosis (α= .84), exploration & autonomy (α= .75), resilience & emotional wellness (α= .73) and emotional intelligence & healthy boundaries (α= .71). To confirm dimensionality, confirmatory factor analysis was run on a different data set (N=205). These four dimensions were confirmed showing healthy composite reliability i.e. .93, .92, .89 and .78 accordingly. Then convergent validity was established by using Urdu version of posttraumatic growth inventory (r = .83, p<.01) while discriminant validity was established through Urdu version of Depression Anxiety Stress Scale (r= -.70, p< .01). Finally Posttraumatic Growth and Depreciation Scale (PTGDS) was developed and validated, having well established four factors with 31 items and high composite reliability of total scale (α= 0.90). This body of work contributes to the fields of positive psychology, health psychology, clinical psychology, policymaking, ultimately supporting Sustainable Development Goal (SDG)3.

***Keywords**:* Posttraumatic growth, posttraumatic depreciation, scale development, psychometric validation, Pakistani Muslim population

INTRODUCTION

Posttraumatic Growth (PTG) is the positive psychological change in a person who experiences traumatic life situations. This transformation is the result of conscious cognitive and emotional efforts to redefine core beliefs and integrate trauma into one's narrative (Eissenstat et al., 2024; Huang et al., 2024; Boals, 2023; Tedeschi & Calhoun, 1995, 1998). The concept of posttraumatic growth (PTG) has evolved over several decades, with significant milestones, defining psychological research. Psychologists started meticulously exploring the positive outcomes of trauma in the 1970s and 1980s. The process of PTG involves struggling with both positive and negative emotions. Growth coexists with ongoing problems, including grief, anxiety and depression (Tedeschi & Calhoun, 1995, 1998).

A person may grow in five domains i.e. a greater appreciation of life, improved relationships with others, new possibilities, personal strength and spiritual change. To sum up, post-traumatic growth could be a positive indicator of adjustment and to see forward in life rather than fixation with past, while the melancholy persists (Tedeschi & Calhoun, 1996). Cultural and spiritual contexts, social support networks, personality traits, and the nature of the traumatic event itself, are the main elements which affect the degree and nature of PTG (Berger & Klonover, 2024; Ryan & Ripley, 2023).

Depreciation is the opposite of growth including poor mental adjustment, and poor mindfulness with trauma linked to negative physical and mental effects (Romeo et al., 2023). The PTGI only evaluates positive changes, neglecting negative posttraumatic experiences, while to focus negative changes is important for mental health. (Eissenstat et al., 2024; Sultani et al., 2024; Li et al., 2024; Zhou & Zhen, 2024; Tomich & Helgeson, 2004). Halt (2006) suggested that both positive and negative changes can be measured in bipolar design scale.

The roots of PTG are found in Buddhism, Christianity, Judaism, Hinduism and Islam as well. The religion Islam is second biggest religion in the world. Islam is complete code of life (Sultani et al., 2024; Khan, 2019; Greear, 2010). Islam sheds light on PTG as the life of Prophet Muhammad (PBUH) has been beautifully documented in Quran, is full of hardships and is an excellent example of PTG (Fox et al., 2024; Alshabani, 2021; Mansoor, 2019). The theoretical roots of PTG stem from psychologists Tedeschi and Calhoun, during mid-1990s. They explained that individuals who persevere psychological struggle against misfortune, can frequently see growth afterwards (Calhoun & Tedeschi, 1999). The literature supported this theory (Wong & Laird, 2024; MacAllister, 2023; Frazier & Kaler, 2006). Initially, to measure these positive learnings in life Tedeschi and Calhoun (1996) introduced the posttraumatic growth inventory (**PTGI**). Later it was translated in many languages i-e Nepali (Reynolds et al., 2022); Thai (Julie et al., 2020); Chinese (Lau et al., 2015); Turkish (Safi, 2021); Spanish (Castro et al., 2015); Japanese (Oshiro et al., 2021); Urdu (Aslam & Kamal, 2017) etc.

PTGI has also its short form (PTGI **-SF**) (Cann et al., 2010). Another form of PTGI was introduced by the name of **PTGI-C** as the first standard instrument for children (Cryder et al., 2006). It is used for children of 6 –15 years. A short form of PTGI-C is also introduced now with name of **PTGI-C-R** (kilmer et al., 2009). The only difference is that PTGI-C-R is used for the children ranging from age 7 to adolescence. This version was translated in multiple languages i-e China (Yu et al.2010), Germany (Vloet et al., 2014), Japan (Taku et al., 2012) (Tedeschi et al., 2018).

Original inventory doesn't allow to reveal negative changes that raise mental health issues (Eissenstat et al., 2024; Pihkala, 2024; Boals, 2023; Spytska, 2023). Bipolar designed scale was introduced to study both dimensions of change in life. These two dimensions were posttraumatic growth and depreciation, exactly opposite to one another (Pieta-Lendzion et al., 2024; Dominick & Taku, 2024; Baker et al., 2008). There are so many measures to assess both positive and negative changes after traumatic events in life. To fill the earlier gap, Baker et al. (2008) introduced the Posttraumatic Growth Inventory– 42 (**PTGI-42**). Breadcook et al. (2008) added in body of literature that if the person reports positive changes only, he will miss a lot of prime data to report (Tedeschi et al., 2018). Afterward, Cann et al. (2010) designed the PTGI-42 to highlight the quality and meaning of life because of trauma.

Cann et al. (2010) conducted a study to examine both growth and depreciation. Findings revealed that PTG had positive relationship with quality of life while PTD had negative one. The conclusion showed that growth and depreciation both have a relationship with higher level of mental adaptability and is essential to study both after traumatic events in life (Li et al., 2024; Pięta-Lendzion et al., 2024; Pięta & Rzeszutek, 2023).

The findings of another research depicted both posttraumatic growth and depreciation contribute towards mental health (Taku et al., 2021). The response format style of PTGI-42 was not as clear to highlight difficulties in trauma survivors. They personally perceive it as positive transformation of life after facing traumatic life events. There was another limitation of this inventory that in quantitative analysis, getting relationship of PTG and PTD was not acceptable approach. To compensate this,

qualitative approach was used by getting narratives of disabled athletes and found positive and negative experience both, even in the same dimension (Day & Wadey, 2016).

As revision of PTGI-42 at first, PTGI-X was developed which was used in many other cultures. It had 25 items rather 21. In the original inventory there were only 2 items based on spiritual changes. Potentially these 2 items were not enough to highlight spiritual changes in a better way, and moreover did not fit in other cultures. To study both growth and depreciation, extended Posttraumatic Growth and Depreciation Scale a new measure of PTG and PTD was introduced **PTGDI-50** by Tedeschi and Calhoun (2017). In the new scale, 25 items are to measure growth and the rest of the 25 items are to measure depreciation (Tedeschi et al., 2018).

The coexistence of both PTG and PTD simultaneously, was also proved. It was observed that the positive changes were most frequently observed in these areas like relating to others (24.22%), appreciation of life (21.12%) and personal strength (26.09%). While negative changes appeared in personal strength (23.33%) and relating to others (33.33%) (Zięba et al., 2019). Park et al. (1996) introduced the **Stress Related Growth Scale (SRGS)** that was a unidimensional scale. This scale basically studies the changes in terms of personality and attitude. There was another version of present scale (Armeli et al., 2001). This version incorporated negative changes also.

Benefit Finding Scale (BFS) was developed to assess positive changes after fighting breast cancer (Tomich & Helgeson, 2004). Weaver et al. (2008) presented BFS with 6 domains i-e family relations, personal growth, acceptance, health behavior, social relations, and world view. Afterward another version by Kim et al. (2007) and a version of more targeted benefit finding in multiple sclerosis **(BFiMS)** was introduced by Pakenham and Cox (2009). It was with same seven factors having a limitation that it cannot be administered on children. That's why another scale, the benefit finding scale for children (BFSC**)** was developed by Phipps et al. (2007). It was specified to assess possible advantages of coping with illness. The scale was for 7-18 years old children (Tedeschi et al., 2018).

Currier et al. (2009) **introduced The Benefit / Burden Scale for Children (BBSC)** to study cancer's positive and negative effects in children,having two subscale i-e burden and benefit. **The Psychological Well – Being – Posttraumatic Change Questionnaire Scale (PWB-PTCQ)** was developed by Ryff (1989) with six subscales. It was considered unidimensional scale that was somehow different with PTGI and its original scale on behalf of basic statements of scale. Because this scale asks the question to the participant how much you perceive yourself about the change on each item after the trauma. Joseph et al. (1993) developed **The Changes in Outlook Questionnaire (CiOQ), to** measure positive and negative changes. In the development of scale, disaster survivors were taken as sample while in validation process, adults and college students were taken as sample as general population. McMillen and Fisher. (1998) introduced **The Perceives Benefit Scale (PBS)** having positively worded items. The sample was used N=300 adults and children of baseball. It was somehow different with PTGI because this scale does not assess the same transformative changes that PTGI assess.

Abraído-Lanza et al. (1998) developed **The Thriving Scale** by interviewing the N= 106 women who faced multiple chronic health issues. Sodergren and Hyland (2000) presented the Silver **Lining Questionnaire** to measure positive benefits of illness in terms of growth. It has a very high level of similarity with PTGI except spirituality items. **The Core Beliefs Inventory (CBI)** (Cann et al., 2010) was developed to assess challenges to a person's core beliefs. **The Event Related Rumination Inventory (ERRI)** (Cann et al., 2011) was introduced as 20 items self-report inventory to study intrusive and deliberate rumination. In this situation one's core beliefs (strength & weaknesses) are challenged.

Keeping in view the significance of PTG & PTD and scarcity of working on scale development in Pakistan, the current research was planned to construct and validate a culture sensitive Posttraumatic Growth and Depreciation Scale (PTGDS) in Urdu language, for Pakistani Muslim population having age range 25 – 59 years (adults and aging adults) The sample for development and validation was recruited from both natural and man-made trauma categories. All above qualities make it unique and comprehensive indigenous scale.

RATIONALE OF THE STUDY

Measuring posttraumatic growth and depreciation is one of the most critical and delicate areas in positive psychology (Taku et al., 2021). Unfortunately, Pakistan lacks suitable cultural tools to carry out successful PTG and PTD investigations. Existing scales for PTG and PTD are developed and validated in Western contexts, those are not culture fair, having language barrier, limited application. It was dire need to develop and validate a scale that is both linguistically appropriate and culturally sensitive because of differences in the way trauma is perceived, processed, and responded to across cultures. Limited tools hinder the capacity of scholars, medical professionals, decision-makers and policymakers to accurately assess and deal with the psychological consequences of trauma in Pakistan. So far there was no scale developed at this pattern in Pakistan based on its own culture and Urdu language. PTGDS supports the Sustainable Development Goal no 3 (SDG 3) by achieving good health and wellbeing of trauma survivors.

Regarding global validation of the PTGI (Tedeschi & Calhoun, 1996) across ten countries, Pakistan was not considered (Taku et al., 2021). There are also some culture-based issues or points i.e. core belief disruption, event centrality, cognitive processing, positive and negative perceptions about self-disclosure which make clear space of this scale development & validation for Pakistani Muslim population (Neff, 2024; Steidl et al., 2024; Gill et al., 2020; Khan, 2013).

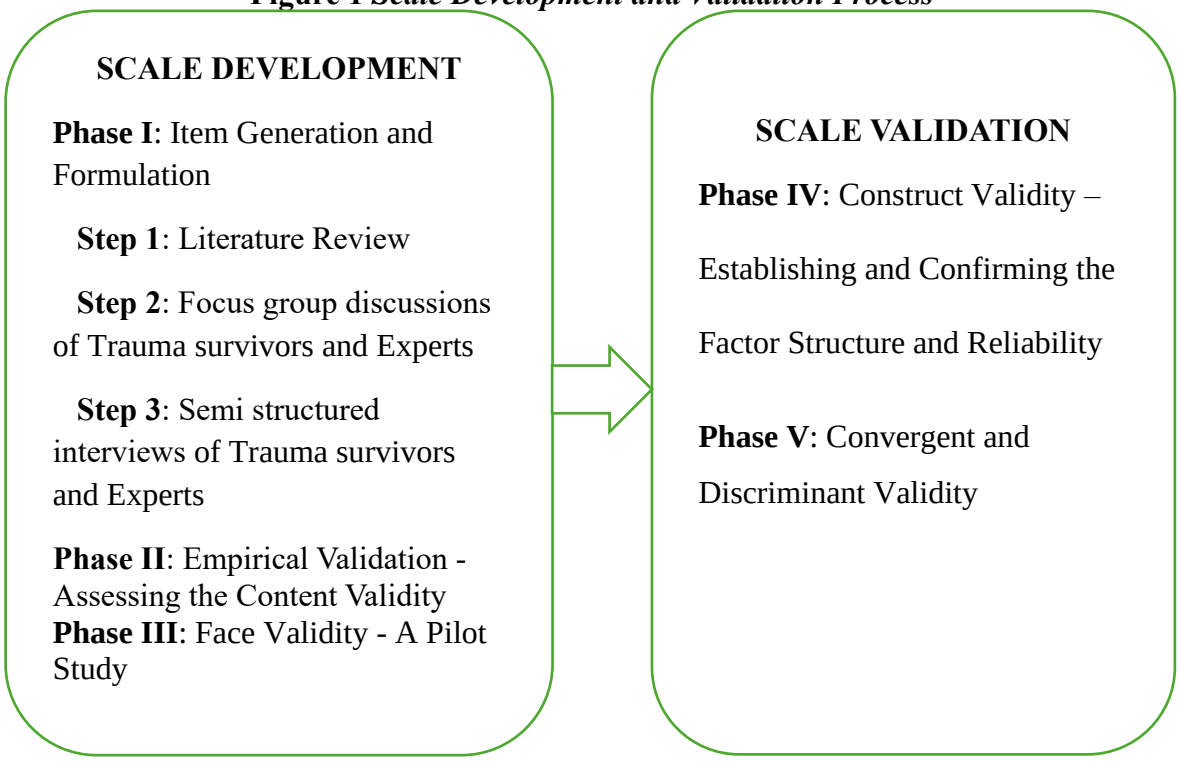
Objective: To develop and validate an indigenous comprehensive scale to measure posttraumatic growth and depreciation, in Urdu language for Pakistani Muslim population.

METHOD

CONCEPTUALIZATION TO OPERATIONALIZATION: ENSURING ROBUST PSYCHOMETRIC PROPERTIES

The scale was developed and validated by following these five phases. This study employed a mixed-methods approach, qualitative method in scale development and quantitative method in validation process.

Figure 1 ***Scale Development and Validation Process***



Phase I: Item Generation and Formulation

Items were generated in three steps e.g. step 1: literature review, step 2: focus group discussions of trauma survivors & experts and step 3: semi structure interviews of trauma survivors & experts as well.

Step 1: Literature Review The first and principal step in conceptualizing the phenomenon of posttraumatic growth and depreciation was to conduct an in-depth and careful literature review to gain insight on the history of construct by reviewing the existing literature. All theories describing and explaining posttraumatic growth and depreciation were examined i-e posttraumatic growth theory or functional descriptive model of post traumatic growth (Tedeschi & Calhoun, 1995, 2018), the model of life Crices and personal growth (Schaefer & Moon, 1992), the conservation of resources theory (Hobfoll, 1989), cognitive processing theory (Park, 2000), dual process model of coping with bereavement (Schut, 1999), core believe challenge model (Janoff-Bulman, 2004). At the same time, already existing scales (as mentioned above) which measure the same construct were reviewed with reference of usability, advantages, and drawbacks. Posttraumatic growth theory or functional descriptive model by Tedeschi and Calhoun (2018) was focused for the present study.

Step 2: Focus group discussions of Trauma survivors and Experts For items generation four focus group discussions were conducted. The first three focus groups were based on trauma survivors while the fourth one was based on experts of psychology. **The first focus group** was conducted with students n=6 with age range 18 to 23 years (M= 20.66 years: SD= 2.06). It took 1 hour and 20 minutes. **The second focus group** was conducted with college and university teachers n= 8, age range was 27 to 54 years (M= 39.25 years: SD= 9.26). It was prolonged till 1 hour and 30 minutes. **Third focused group** was conducted with male participants n= 5 age range was 21 to 38 years (M=28.60 years; SD= 6.58). This discussion took one hour and 35 minutes. **The fourth focus group** was conducted with local **experts** n= 5, age range was 30-to 52 years (M= 42.40 years; SD= 8.41) who had completed their Ph.D. For the participation and for audio recording, written consent was taken from the participants.

Step 3: Semi structured interviews of Trauma survivors and Experts At first these interviews were conducted from n= 6 **male and female experts of Psychology department** from different universities with Ph.D. or Post-doc degree, having 5-15 years' experience of teaching (M= 9.16; SD = 3.31). Each interview lasted for almost one hour. Secondly from n=2 **male and female participants** interviews were conducted. The population for whom the scale was developed is the general population and they people were considered in the present study in viewing this **inclusion& exclusion criterion.** Only Muslim male and female both, having age range of 25-59 years (adults and aging adults) who faced trauma during last 3 months to 2 years were included in the study (Comerey & Lee, 1992; Costello & Osborne, 2005; DeVellis, 2017; Faul et al., 2009; Hashmani, 2018; Williams et al., 2010; Tabachnick & Fidell, 2013). The persons who were diagnosed with some mental health issues, who claimed smooth life (not survivor of trauma) and the aged persons who were living alone were not included in the study.

Questions for experts and trauma survivors were separately arranged. For trauma survivors questions were based on their experience of traumatic events while questions for experts were based on their expertise. All interviews and focus groups were carefully **transcribed**. By using thematic analysis all transcriptions were deeply analyzed with line-by-line reading and highlighting themes. In an initial reading of the transcripts, it was discovered what participants wanted to say and how they related these traumatic experiences to their post-traumatic changes in life i.e. in a positive or negative manner.

From these interviews and focus groups a lot of important themes were generated. After that, themes were scrutinized then based on themes items were generated. The emerging themes were spiritual

matters, responsibility, compassion for others, gratitude in life, restructuring of cognition, change in life priorities, patience in life, decision power, maturity in life and self-reliance etc. While from semi structured interviews and focus group discussions, healthy boundaries self-awareness and sensitivity in life exclusively emerged having unique expression of participants.

A pool of seventy themes was generated from literature review, focus group discussions, and semi structured interviews by avoiding repetition, many sub themes were also compiled with main clusters. With the help of **personal and peer review** themes were reduced by merging in main themes. The clusters of main themes itself were reduced and concluded at fifty-three total themes. Finally, an item pool of fifty – three statements was established based on the themes explored by keen observation, deep analysis and thorough evaluation of existing literature, focus group discussions and semi-structured interviews.

Phase II: Empirical Validation -Assessing the Content Validity Index (CVI).

Assessing each item's relevance and clarity to the actual construct was the key objective of the Item Content Validity Index (I-CVI) (Haynes et al, 1995), by 6 judges (Lynn, 1986) who had the expertise in positive psychology, psychological testing & assessment and development of scale. A total of two males and four women having 8–18 years of experience (M=12.50; SD=4.03). On a 4-point Likert scale, in which 1 indicated extremely irrelevant and 4 indicated highly relevant, they judged the statements' clarity, relevance, and understandability (Davis, 1992). Considering Lynn's (1986) standards to carry out an I-CVI, 16 items were detained, and 37 items were retained as their I-CVI was less than .78 and they weren't deemed relevant to the measure. The same criteria were applied to determine the scale's total CVI that was .86, and by following this standard criterion, the total CVI was determined to be acceptable (Lynn, 1986; Wynd et al.,2003).

By following the previously stated criteria, 37 items were retained in the scale. The scale Content Validity Index was also determined.

Total **Item-CVIs = 31.94** Total number of Items = 37

Scale-CVI = Total Item-CVIs / Total number of items = 31.94 / 37= .86

Scale-CVI = .86 Accepted range of scale-CVI = .80 - .90

Cut off point for experts (N=6) > .78 (Lynn, 1986; Wynd et al.,2003). The detailed table is provided in the annexure (see Annexure A, Table 1).

Phase III: Face Validity - A Pilot Study

After content validity the pool of 37 items for **Posttraumatic Growth and Depreciation Scale** was developed. The scale was designed with bipolar rating nature (1= greatly decreased, 7= greatly increased). After the development of indigenous Urdu version Posttraumatic Growth and Depreciation Scale (PTGDS) as next step pilot study was conducted. The **purpose** of this study was understandability and clarity of items to the participants and to establish face validity of scale. A sample of N =50 trauma survivors (n= 22 men, n=28 women) were recruited as participants through purposive sampling technique. Maximum participants were included in age range 30-34 (34%, n= 17) while minimum participants were included in age range 55-59 (2%, n= 1). So, median and mode values according to these categories remained 2.00 (age range 30-34). The inclusion and exclusion criteria were the same as those followed in Phase I. A self-designed demographic sheet and PTGDS having 37 items were used as assessment measures. The respondents were asked to rate each statement on a scale from 1 to 7. Then to make the items unambiguous and more understandable, the items were pilot tested by asking questions from participants regarding quality of items. For **face validity** participants' judgement regarding appearance of items was asked and noted. As result of participant's discernment and perception related to overall impression of items. Item no 22 overlapped with item no 10 while item no 35 was so ambiguous. That's why both items no 22 and 35 were eliminated. So total **35 items** retained in the scale.

Phase IV: Construct Validity – Establishing and Confirming the Factor Structure and Reliability

In this phase, under construct validity for establishing and confirming factor structure EFA and CFA was executed. At first construct validity by Exploratory Factor Analysis (EFA) and alpha reliability was established. The **purpose** of EFA was to establish internal factor structure of the scale to finalize the items of scale.

Research Design, Sample & Sampling Technique: For EFA, a cross- sectional research design was employed. Nonprobability purposive sampling technique was used to collect the data for EFA. The sample N= 175 trauma survivors (n= 77 men, n = 98 women) with age range 25-59 years were recruited to participate in study. This sample was collected from different hospitals and health centers of Lahore. In the recruitment of sample, all main categories, natural trauma and man-made trauma were covered. Generally, a larger sample size is preferred for validating a scale (Bujang et al., 2012; Howard, 2016), The sample size utilized in this study followed the criteria of 5 cases per item, as recommended by Tabachnick and Fiddell (2013).

Maximum participants were included in the age range 25-29 (29.1 %, n= 51) so, median and mode remained 2.0 (age range 30-34) and 1.00 (age range 25-29). Most of the participants fell in the category of 9-10 years of education (n=40, 22.9 %). The sample comprised of 74 participants (42.3 %) were working; 133 participants (76%) were married; 76 participants (43.4%) belonged to nuclear family and 99 participants (56.6 %) were from joint family. The range of trauma duration was 3 to 24 months (M= 12.69, SD= 7.85), 60 participants (34.3 %) were with multiple traumas. Inclusion & exclusion criteria and assessment measures were same as followed in pilot study. This time Posttraumatic Growth and Depreciation Scale (PTGDS) Urdu version, having **35 items** was used for EFA.

Procedure: Permissions by the head of the Psychology Department and head of the institutions were taken. Informed consent was taken, the purpose of the study was described to the participants and confidentiality was assured. It was in face-to-face manner. All ethical requirements were adhered to henceforth.

Results: SPSS version 28 was used for descriptive analysis and to execute Exploratory Factor Analysis (EFA), to determine the factor structure of the Posttraumatic Growth and Depreciation scale (PTGDS).

Construct Validity. To assess the factor structure of an indigenously developed scale, 35 statements with a seven point Likert scale were subjected to principal component analysis (PCA). Some empirical tests were done to establish the appropriateness of the data for factor analysis, with other standard techniques for estimating, sampling compositionality was employed. Kaiser-Meyer-Olkin (KMO) test was the determinant of the sample's fitness. As per Kaiser (1960), a KMO index that is 0.5 and above suggests that the sample used or tested is appropriate for analysis, such that 0.5-0.7 are average, 0.7-0.8 is good, 0.8-0.9 are very good, and above 0.9 are excellent. In this current investigation, the KMO measure of sampling adequacy was 0.829 which falls under "great" factors. The test of sphericity conducted by Bartlett also produced encouraging results, with chi square, 2162.20 and 595 degrees of freedom with $p < .001$. Based on the results from these findings, it can be proposed that item correlations were sufficiently high for PCA, and these results are illustrated in Table 2 which strengthened the argument that factor analysis was appropriate. The criterion used to retain the items in each factor was, factor loading of .30 or greater (Hair, 2010). So, 31 items out of original 35 items were retained. Four items were excluded e.g. 25, 26, 32, and 34 due to low loadings i.e., <.30 (see Annexure A, Table 2).

The labeling of the four factors was as follows:

Factor 1: Self & Spiritual Metamorphosis. Factor 1 had an eigenvalue of 4.6, explaining 13.14% of the variance. It consisted of 11 items e.g. items 1, 2, 4, 13, 14,15, 16, 17, 19, 35, and 31. The items in factor 1 were found to be associated with self & spiritual metamorphosis. Here is an example of the item, "after this trauma I understand spiritual matters. These items theoretically present the impression of totally new and changed self-strength to face life challenges, changed religious beliefs, involvement in religious practices & spiritual matters. It involves a sense of responsibility, compassion for others, gratitude in life and restructuring of cognition. This perception of metamorphosis includes change in life priorities, patience in life, improved decision power and maturity in life.

Factor 2: Exploration & Autonomy. Factor 2 had an eigenvalue of 4.45, which explain 12.65 % of variance, while the cumulative percentage remained 25.82. Factor 2 consisted of 9 items including 5, 6, 11, 20, 21, 27, 28, 29, and 30. The items clustered under factor 2 were related to Exploration & autonomy. Here is an example of the item, 'after this trauma I have become an independent person'. These items theoretically portray self-evaluation & discovery i.e. new interests in life, new paths of life, meaning of life, higher order thoughts, personality traits and needing others. The items also depict personal freedom as part of the posttraumatic growth i.e. independence, self-reliance, change the things as per need.

Factor 3: Resilience & Emotional Wellness. Factor 3 had an eigenvalue of 2.68, explaining 7.66% of the variance, whereas the cumulative variance remained 33.48 %. Factor 3 consisted of 7 items e.g. 3, 7, 8, 10, 18, 22, and 24. The items grouped under factor 3 were relevant to resilience & emotional wellness. Here is an example of the item, 'after this trauma adaptability has been developed in my life'. These items conceptually describe the picture of posttraumatic growth in terms of endurance & adaptability including self-strength, adaptability and resilience. The impression of growth is also clear in the form of emotional health e.g. self-compassion, life satisfaction, emotional growth and emotional expression.

Factor 4. Emotional Intelligence & Healthy Boundaries. Factor 4 had an eigenvalue of 2.60, which explain 7.43% of the variance, but the cumulative variance was 40.91 %. Factor 4 consisted of 4 items e. g. 9, 12, 23, and 33. The items gathered under factor 4 were relevant to emotional intelligence & healthy boundaries. Here is an example of the item, 'after this trauma emotional regulation has been developed in my life'. These items conceptually and theoretically present the meaning of emotional awareness & appropriate limits in interpersonal relationships as part of posttraumatic growth including healthy boundaries, self-awareness, sensitivity in life and emotional regulation.
A complete set of thirty-one items demonstrate perfect picture of posttraumatic growth and depreciation scale as indigenous measure. Factor 4 emerged as unique factor having distinctive features of this scale which present exclusive and unusual cultural expression of posttraumatic growth in Pakistani Muslim population. They people were in the favor of drawing limits with the toxic interpersonal relationship which continuously become the reason of psychological distress.

Operational Definition: Posttraumatic Growth and Depreciation (PTGD) is the degree of positive changes and negative changes in belief system & behavior, experienced by individuals with respect to self & spiritual metamorphosis, exploration & autonomy, resilience & emotional wellness and emotional intelligence & healthy boundaries in the aftermath of major life crisis or certain period of trauma. PTGD can be measured according to scores of participants e.g. more scores conclude Posttraumatic Growth (PTG) while less scores conclude Posttraumatic Depreciation (PTD).

Scoring Procedure. To determine levels of posttraumatic growth and posttraumatic depreciation, score thresholds were established centered on the median values (Field, 2018). The median is high and low on growth and depreciation respectively for each factor. The internal consistency of the items

in the posttraumatic growth and depreciation scale was evaluated using Cronbach's alpha. Items having factor loadings of less than .30 were dropped, and the inter-item reliability coefficients of the four factors remaining were computed. The final figures of Cronbach' s alpha at .84, .75, .73 and .71 indicated high levels of reliability among the factors, while total scale also established high reliability (α= 0.88) (Hair et al., 2015; Henseler, 2016). To make it possible to analyze the factors with different numbers of items, scaled scores were made. The formulae that follow were employed for these scores adhering to McKinlay et al. (1981): Scaled Scores = (Total scale score divided by the number of items and response options), then multiplied by 10.

Table 3 ***Intercorrelation among Subscales and Total Scores of Posttraumatic Growth and Depreciation Scale.***

Variables	12	3	4	5
1. Self and Spiritual Metamorphosis	-.64***	.44***	.43***	.87***
2. Exploration and Autonomy	-	.48***	.45***	.86***
3. Resilience and Emotional Wellness		-	.36***	.72***
4. Emotional Intelligence and Healthy Boundaries			-	.70***
5. PTGD				-

*p<.05, **p<.01, ***p<.001

The result revealed that all four factors and total scale were significantly positively correlated which reinforce the construct validity of posttraumatic growth and depreciation scale (Nunnally, 1994).

Table 4 ***Descriptive Statistics for the Posttraumatic Growth and Depreciation Scale.***

Subscales & Total scale	*K*	α	*M*	*SD*	*Median*
Self and Spiritual Metamorphosis	11	.84	56.95	12.30	60
Exploration and Autonomy	9	.75	41.92	10.13	43
Resilience and Emotional Wellness	7	.73	28.74	7.55	29
Emotional Intelligence and Healthy Boundaries	4	.71	18.14	5.04	19
Total PTGDS	31	.88	145.76	27.82	147

Note. Scoring cut off = median

Table 4 showed descriptive statistics and reliability coefficients including mean, standard deviation, median, and reliability coefficient for the total scale and the four sub-factors of the posttraumatic growth and depreciation scale.

Final Form of Posttraumatic Growth and Depreciation Scale (PTGDS) Finally a culture sensitive, Urdu version Posttraumatic Growth and Depreciation Scale (PTGDS) with bipolar rating nature (1= greatly decreased, 7= greatly increased) was developed. Higher score on the scale indicates growth while lower score indicates depreciation. It was **31 items** scale having four subdomains e.g. self & spiritual metamorphosis, exploration & autonomy, resilience & emotional wellness and emotional intelligence & healthy boundaries. Factor1 has 11items, factor 2 has 9 items, factor 3 has 7 items and factor 4 has 4 items respectively. In EFA good internal reliability is concluded such as α = .84, α = .75, α = .73, α = .71 accordingly. These are some sample items including "after this trauma I understand spiritual matters', 'after this trauma I have become an independent person', 'after this trauma adaptability has been developed in my life', 'after this trauma emotional regulation has been developed in my life.

The indigenous aspect of culture, social, religious and language that fulfill the requirement of adults & aging adults of Pakistan, makes PTGDS different from already existing scales. Literature also supports that scale must be developed justifying the need of population for whom the scale is developed (Cervone et al., 2024; Streiner et al., 2024; Lambert & Newman, 2023; Zuev et al., 2023).

The total raw score can be summed to measure the posttraumatic growth and depreciation. As this is bipolar scale the mean value is 124. The score below 124 is considered depreciation while 124 and above is considered growth.

Again, growth and depreciation both have ranges:

31-62	high depreciation	124-155	low growth
62-93	medium depreciation	155-186	medium growth
93-124	low depreciation	186-217	high growth

For the total scoring of subscales mean values can be calculated.
Using empirical and well recognized methos Posttraumatic Growth and Depreciation Scale (PTGDS) is successfully developed for adults & aging adults of Pakistani Muslim population.
As part of phase IV (construct validity) **Confirmatory Factor Analysis (CFA)** was executed. The purpose of CFA was to confirm EFA or dimensionality of scale and to fix the items of scale according to the factors.

Research Design, Sample & sampling technique: Same research design, sampling technique, inclusion & exclusion criterion and institutions were followed as previous in EFA, for data collection. While a separate sample N= 205 trauma survivors (n= 91 men, n = 114 women) was recruited to participate in study from same trauma categories as mentioned above. Maximum participants were included in the age range 30-34 (18.00 %, n= 37). So, median and mode remained 4.0 (age range 40-44) and 2.00 (age range 30-34) accordingly. Most of the participants fell in category of 9-10 years of education (n=50, 24.4 %). The sample comprised of 80 participants (39.0 %) were working; 17 participants (8.3%) were unmarried, and 166 participants (81%) were married; 93participants (45.4%) belonged to nuclear family and 112 participants (54.6 %) were from joint family. The range of trauma duration was 3 to 24 months (M= 11.34, SD= 7.27); 84 participants (41.0 %) were with multiple traumas. As assessment measures same demographic sheet and final form of Posttraumatic Growth and Depreciation Scale (PTGDS) was used for CFA**.**

Procedure: The procedure was the same as mentioned in Exploratory Factor Analysis (EFA).

Results: To confirm the factor structure of culture sensitive Urdu version scale, CFA was conducted. Employing version 26.0 of AMOS (Analysis of Moment Structures), a Structural Equation Model (SEM) was applied for validating the factor structure of scale. There were four sub-factors in the posttraumatic growth and depreciation scale which were labeled as self & spiritual metamorphosis, exploration & autonomy, resilience & emotional wellness, emotional intelligence & healthy boundaries. The model fit indices of the tested model are presented in table 5.

Table 5 ***Fit Indices of Confirmatory Factor Analysis for Posttraumatic Growth and Depreciation Scale (N = 205)***

Model	χ^2	*df*	χ^2/df	*GFI*	*CFI*	*RMSEA*	*SRMR*
Initial Model	678.94	428	1.58	.80	.91	.05	.05
Model Fit	625.14	427	1.46	.90	.92	.04	.04
$\Delta\ \chi^2$	53.80*						

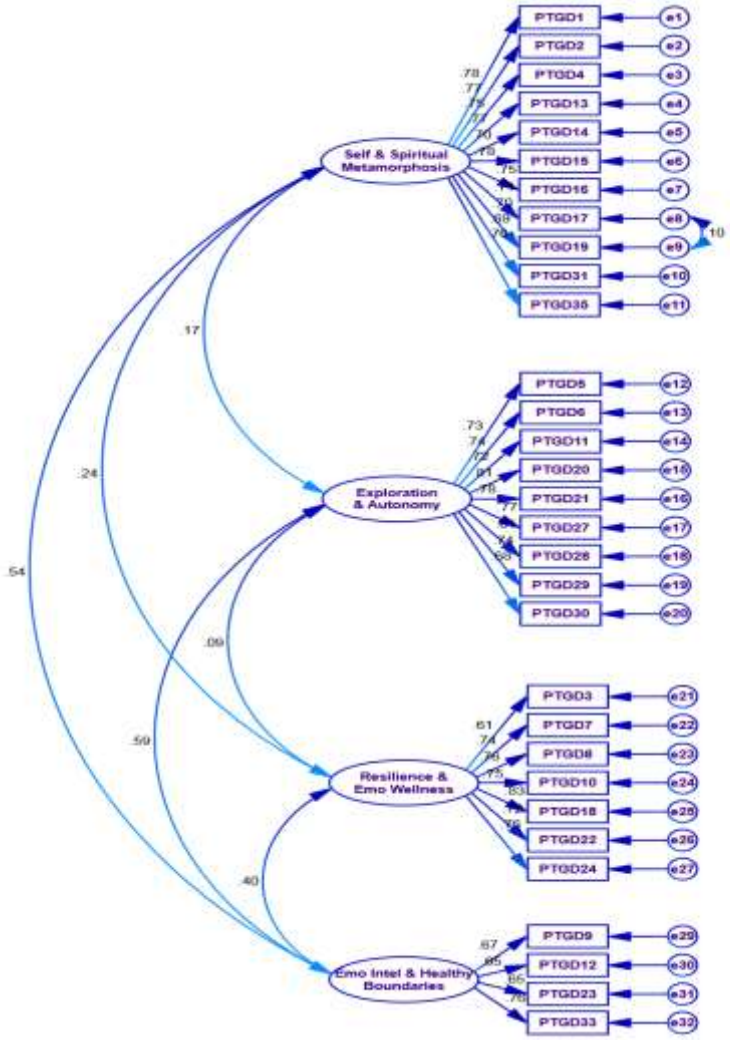
Note. All change in chi square values is computed relative to model, χ^2 >.05, GFI= Goodness of fit index, CFI=comparative fit index, NNFI = non-normed fit index; RMSEA=root mean square error of approximation, SRMR=Standardized root mean square, $\Delta\chi^2$ = chi square change.

Table 5 illustrates the model fitness metrics for the posttraumatic growth and depreciation scale structure. Considering χ^2 (427) = 625.14, p <.05., the confirmatory factor analysis outcomes indicated poor absolute model fit. The chi-square test could be affected by sample size and parameter number

which might result in an inappropriate assessment of model fit (Hair et al., 2010). Additional fit indices, including for example CFI (Comparative Fit Index), GFI (Goodness of Fit Index), SRMR (Standardised Root Mean Square Residual), and RMSEA (Root Mean Square Error of Approximation), were therefore put into consideration when performing a deeper evaluation of the model fit. Following the guidelines developed by Hu and Bentler (1999), a good relative model fit is shown by a χ^2/df ratio between 0 and 3, CFI and GFI values of.90 or higher, and RMSEA and SRMR values of.08 or below. The initial model remained unsuccessful to meet these standard criteria regardless these guidelines, which suggest further improvement.

The model fit had been improved through a model modification strategy. This involves adding covariance between the error terms of indicators related to psychological vulnerabilities' latent variables. The rationale behind this approach is that measurement errors may be shared by related items within the construct. Only covariances that led to a chi-square value change of 4.0 or higher were included in the modifications, in line with the criteria developed by Kenny and Judd (2012) and Arbuckle (2012). Following these modifications, the absolute and relative fit indices were reassessed. For both the first and second-order models, the revised model demonstrated significant improvements, with RMSEA and SRMR values both at .04, and GFI and CFI values reaching .90 and .92, respectively. Overall these indices indicated that the revised model attained a good fit with the empirical data, providing a more precise depiction of the posttraumatic growth and depreciation scale construct.

Figure 2 ***Model Fit of Confirmatory Factor Analysis Posttraumatic Growth and Depreciation Scale.***



To examine the measure's psychometric qualities, Confirmatory Factor Analysis (CFA) was employed. This analysis aimed to evaluate the reliability of scale, convergent and discriminant validity as well. The composite reliability coefficients of scale exceed the proposed criterion of 0.7, indicated in Table 6 (refer to Annexure A). This benchmark was verified by Hair et al. (2015) and Henseler et al. (2016), which revealed that the scale had high internal reliability. Convergent validity was determined by considering the factor loadings of the scale items on the relevant constructs. Hair et al. (2010) suggest that standard factor loadings of.50 or higher are deemed acceptable. These loadings indicate that every item accounts for at least 25% of the variance in its corresponding factor, that is a robust measurement of validity for a newly developed scale.

The variances of each factor were calculated. The factor labeled "self & spiritual metamorphosis" accounted for 55% of the variance, indicating a power relationship within the items and the basic construct. Similarly, the factor "exploration & autonomy" explained 56% of the variance, showcasing its significance within the scale. The "resilience & emotional wellness" factor also demonstrated substantial explanatory power, accounting for 55% of the variance. Lastly, the factor "emotional intelligence & healthy boundaries" accounted for 47% of the variance, which, although slightly lower than the other factors, still indicates a reasonable level of convergent validity.

Table 7 ***Fornell-Larcker Criterion for the Factors of Posttraumatic Growth and Depreciation Scale (N = 205)***

Factor	***K***	***M***	***SD***	***MaxR(H)***	***EA***	***EIHB***	***REW***	***SSM***
EA	9	25.39	9.93	0.925	**0.754**			
EIHB	4	11.36	3.85	0.941	0.592	**0.686**		
REW	7	25.48	6.71	0.962	0.087	0.400	**0.742**	
SSM	11	41.21	10.03	0.975	0.173	0.538	0.241	**0.743**

Note. k = number of items, SSM = self and spiritual metamorphosis, EA = exploration and autonomy, REW = resilience and emotional wellness, EIHB = emotional intelligence and healthy boundaries.

As proposed by Voorhees et al. (2016) and Henseler et al. (2016), two approaches were employed for assessing the discriminant validity. The Fornell-Larcker criteria were employed in the first approach. According to Fornell and Larcker (1981), discriminant validity can be assessed by comparing the square root of the average variance extracted (AVE) values for each construct with the correlations of that construct with all other constructs. Specifically, the square root of the AVE for each construct should exceed the highest correlation of that construct with any other construct. This ensures that each construct shares more variance with its own indicators than with other constructs in the model. Table 7 provides these comparisons, demonstrating that the square roots of the AVEs for all constructs were higher than their respective inter-construct correlations, thereby supporting discriminant validity.

The second method involved comparing the average variance extracted (AVE) with the maximum shared variance (MSV) of each construct. According to Hair et al. (2010), for a construct to exhibit discriminant validity, its AVE must be greater than its MSV. This criterion ensures that the variance a construct shares with its own indicators is greater than the variance it shares with any other construct. By confirming that the AVE is greater than the MSV, this method provides further evidence that the constructs are distinct and not excessively correlated with one another (see Table 6 Annexure A). These results indicate that the scale effectively differentiates between various aspects of posttraumatic growth and depreciation, ensuring independent and accurate measurement of each construct. Further in phase five, convergent and discriminant validity was also executed, based on correlation matrix (Campbell & Fiske, 1959).

The Posttraumatic Growth and Depreciation Scale proved both reliable and valid, according to results. The scale's consistency was proved by high composite reliability, while its convergent validity was proved by strong factor loadings. Moreover, the scale effectively distinguishes between different aspects, ensuring that each construct is measured independently and accurately.

Phase V: Convergent and Discriminant Validity

Convergent and discriminant validity (correlation matrix based) was measured as part of psychometric properties of the scale. Both convergent & discriminant validity compare the scale with already existing scales for the same and opposite purposes based on relationship (Campbell & Fiske, 1959).

Research Design, Sample and Sampling Technique: Same data set of CFA (N=205) was used. As assessment measure same demographic sheet and final form of indigenous PTGDS having 31 items Urdu version were used. For convergent validity posttraumatic growth inventory (PTGI) Urdu version (Kauser & Saghir, 2010) was used. It has 21 items with a 6-point Likert scale, having a range of 0 to 5. It has 5 factors i-e personal strength, relating to others, new possibilities, appreciation of life and spiritual growth. The Urdu version of PTGI has very good reliability (α = .65 to .88) of all subscales. For discriminant validity Depression Anxiety Stress Scale (DASS-21) Urdu version (Aslam & Kamal, 2017) was used**.** It has three subscales to measure depression
(DASS 21-D), to measure anxiety (DASS 21-A) and to measure stress (DASS 21-S). The scale has 21 items in total, 7 items in each subscale with 4-point Likert scale where 0= did not apply to me, 3= apply to me very much. The overall reported reliability of the scale was excellent α=.93 while for the stress, anxiety and depression subscale was α=.83, .86 and .84 respectively.

Procedure: This study followed the same standard procedure as mentioned above. In assessment measures two more scales were administered for convergent and discriminant validity when data was collected for CFA. Permissions from original as well as local authors of the scales were taken for use in this study.

Results: SPSS version 28 was used for statistical analysis. Pearson product moment correlation was executed for the comparison of three scale.

Table 8 ***Descriptive Statistics and Correlations of PTGDS with PTGI and DASS (N=205)***

Variable	*N*	*M*	*SD*	1	2	3
1.PTGDS	205	111.56	23.15	—		
2.PTGI	205	57.04	12.39	.83**	—	
3. DASS	205	39.54	23.68	-.70**	−.58**	—

Note. PTGDS=Posttraumatic Growth and Depreciation Scale; PTGI=Posttraumatic Growth Inventory; DASS=Depression Anxiety Stress Scale

**p<.05. **p<.01. ***p< .001*

As shown in Table 8 the results revealed significant positive relationship between PTGDS and PTGI (r = .83, p < .01) that is the witness of convergent validity. The finding also showed significant negative relationship between PTGDS and DASS-21(r = -.70, p = < .01) that proves discriminant validity (Campbell & Fiske, 1959).

DISCUSSION

Almost seventy percent of people must face trauma in their life (Benjet et al., 2020; Jongedijk, et al., 2023), while sixty percent of survivors report PTG (Tedeschi & Moore, 2006). Research usually focuses trauma's negative health consequences, while it has also positive outcome (Updegraff & Taylor, 2021). The research aimed to develop & validate a culture sensitive scale to measure positive and negative psychological changes after trauma.

This scale was developed in Urdu, is broadly usable because Urdu is spoken by almost hundred million people around the world, along with Pakistani abroad communities (BBC, 2014). The scale supports clinical and general population both by highlighting growth and depreciation and helping for

future development. This is a diagnostic tool to measure depreciation for the timely provision of intervention, and to measure the level of PTG after intervention. (Garrido-Hernansaiz et al., 2023; Jozefiaková et al., 2022). PTGD scale demonstrated strong empirical support in terms of robust psychometric properties which include factor analysis, reliability and validity. The 31- items PTGDS ($\alpha = 0.90$) with 4 well established four factors was developed and validated in Pakistani cultural context, revealing unique domains including self & spiritual metamorphosis, exploration & autonomy, resilience & emotional wellness and emotional intelligence & healthy boundaries.

Some researcher provide evidences that PTG is a universal phenomenon, for example Jaarsma et al., 2006 from Netherlands; Otto, 2019 from Germany and Xu et al., 2023 from China, on the other hand some researcher support the cultural differences in the process of PTG (Exenberger et al., 2019). The current study is in line with results of the research by Exenberger et al. (2019). As the matter-of-fact different cultures can explain the word "trauma" in different ways and their reactions also depend on their explanation & understanding. These discrepancies may also depend upon the differences between individualistic and collectivist cultures (Kashyap & Hussain, 2018).

The present research developed and validated four factors of PTGDS while PTGI (Tedeschi & Calhoun, 1995) is validated by many researcher from different countries and found different factor structures (Joseph et al., 1993; Jaarsma et al., 2006; Alex Linley et al., 2007; Osei-Bonsu et al., 2012; Mack et al., 2015; Arandia et al., 2018; Silverstein et al., 2018; Xu et al., 2023). Some studies showed consistency with already existing five- factor structure (Ramos et al., 2016). In the result of other studies Rodríguez-Rey et al. (2016) found three- factors and Pajon et al. (2020) found four-factor structure. Present study is supported with the results of all above mentioned studies which showed inconsistency with existing five -factors. The current study is in line with results of the research by Pajon et al. (2020) which shows four- factor model. There may be different possible reasons for different factor structures e.g. cultural difference, type of traumatic event and sample (Waught et al., 2018; Wagner & Maercker, 2010).

The themes which are specified with interview and focus group discussion represent purely Pakistani population. In the **first factor labeled self & spiritual metamorphosis** the theme of 'spiritual matters' was observed very strong for PTG. For Pakistani population, spirituality in Islam is interwoven with religious beliefs and practices, deeply rooted in Islamic teachings such as prayer, fasting and charity are considered as spiritual obligations. Existing international body of literature supports this factor e.g. Garrido-Hernansaiz et al. (2023); Jozefiaková et al. (2022); Tedeschi et al. (2017); Purc-Stephenson et al. (2014); Frazier, et al. (2006); O'Rourke et al. (2008).

With reference to **second factor labeled exploration & autonomy,** in Pakistani cultural context trauma survivor perceived the meaning of independence, to manage stress in future, independently. This factor exclusively contributes in PTG, in a way that in Pakistan role and identities are shaped by familial and societal expectations while experience of trauma, compels the person to explore the stronger sense of personal identity other than social expectation, that fosters the process of growth. Autonomy encourages the people to recognize their inner resilience and ability to make decisions, that is empowering in managing trauma and adversity. Researchers couldn't find support of this factor with specific label from existing literature based on factor structure of PTG. So, it is concluded that this factor is unique and special with reference to culture and Pakistani Muslim population.

In the **third factor labeled resilience & emotional wellbeing** This factor independently contributes in PTG because the support system that a Pakistani perceives living in collectivist society, make him more resilient. These connections foster a sense of belonging and supported rebuilding emotional wellness after trauma. This factor having this specific label couldn't get support from existing research that proved it rare and Pakistani culturally relevant factor. As Pakistan has close knit family structure and people are interconnected with each other, culturally it seems hard to draw boundary due to the family and social obligation. But in the result of semi-structured interview and focus group discussions, the theme of healthy boundaries strongly emerged as an element of posttraumatic growth in Pakistani people that makes this scale unique with its culture specification. The **fourth factor labelled 'emotional intelligence & healthy boundaries'** can exceptionally contribute to

posttraumatic growth (PTG) in the Pakistani population by accelerating self-awareness, emotional regulation, and the mastery to draw limits & boundaries within a collectivist culture. This factor promotes personal empowerment and healthier interpersonal relationships, those are inevitable for meaningful growth after trauma. As for as the present study's support is concerned, the label of 'emotional intelligence' is found as factor of PTG (Fillion, 2024; Logan, 2023) while 'healthy boundaries' remained unique element of Pakistani Muslim population. They were in the favor of drawing healthy limits with the toxic interpersonal relationship which continuously become the reason of psychological distress.

Using empirical and well recognized methos Posttraumatic Growth and Depreciation Scale (PTGDS) was successfully developed. At first factor structure was established trough EFA (N= 175) and afterward this structure & dimensionality was confirmed through CFA by using a different data set (N= 205). The purpose of this analysis was to find out psychometric properties in terms of reliability, convergent validity and discriminant validity. By using AMOS 26 alternate models and fit indices for measurement were both assessed. The results showed that for the scale, measurement model proved to be the best fit model (Hu & Bentler, 1999). The scale was finalized with 31 items having well established 4 factors. Finally the factor structure developed by EFA was proved by CFA. Composite reliability coefficients of the scale were found to be high such as self & spiritual metamorphosis (α = .93), exploration & autonomy (α= .92), resilience & emotional wellness (α= .89), emotional intelligence & healthy boundaries (α= . 78). The range of reliability for subscales was .78 - .93. The internal reliability of the scale by using both data set in EFA & CFA, remained high. The criterion of reliability was 0.7 or more (Hair et al., 2015; Henseler., 2016). This is the indication that items in the scale are highly consistent with each other, means these items measure the same underlying construct. Evidently PTGDS could be a valid and reliable measure.

Through CFA, convergent validity was assessed by following the criterion of Hair et al. (2010) ultimately the level of convergent validity was found reasonable. While to assess discriminant validity two different methods were used as recommended by Voorhees et al. (2016) and Henseler et al. (2016). The Fornell- Larcker criterion (1981) was used in the first method which supported discriminant validity. In the second method, comparing the average variance extracted (AVE) with the maximum shared variance (MSV) of each construct, was involved. According to Hair et al. (2010) this method further provided evidence of discriminant validity.

Moreover, Criterion related convergent and discriminant validity based on correlation matrix was also measured for the scale (Campbell & Fiske, 1959). Convergent validity was settled through Posttraumatic Growth Inventory (PTGI) (Kauser & Saghir, 2010) while discriminant validity was established through Depression Anxiety Stress Scale (DASS-21) (Aslam & Kamal, 2017). The results of analysis showed significant positive relationship of PTGDS with PTGI (Kauser & Saghir, 2010) that is the evidence of convergent validity. While revealed significant negative relationship with DASS-21(Aslam & Kamal, 2017) that proves discriminant validity (Bagozzi et al., 1991; Foster & Cone, 1995; Campbell et al., 2015). These findings showed consistency with conceptual frameworks that PTGDS and DAAS-21 were different constructs. The research by El-Gabalawy et al. (2021) supports this discriminant validity. On the other hand, convergent validity of PTGDS with existing Urdu version of PTGI (Kauser & Saghir, 2010) is supported by the study of Deaton (2020).

Evidently PTGDS is both accurate (measuring the intended construct) and distinct measure (not measures something else). So, this is a trustworthy scale for researchers and practitioners because it measures exactly what it means to measure without being influenced by irrelevant factors. As conclusion Posttraumatic Growth and Depreciation Scale (PTGDS) was successfully developed with its robust psychometric properties. So, the scale is both reliable and valid. It can be used for both general and clinical population to assess posttraumatic growth and depreciation of Pakistani Muslim population. This body of work enriches the field of health, educational, social, research, counselling, and clinical psychology.

LIMITATIONS AND RECOMMENDATIONS

While this research offers valuable insights, there are limitations to consider. The sample, primarily from Punjab, may not represent the entire population, and data from other provinces is needed. The cross-sectional design limits causal conclusions, and a longitudinal approach would be more informative. Additionally, the scale's applicability to different subgroups within Pakistan, such as those with varied languages or cultural backgrounds, remains unexplored. The scale's cross-cultural applicability remains unknown, limiting its use to the specific population. Further psychometric testing in diverse settings and populations is needed to confirm its adaptability and broader relevance.

IMPLICATION AND CONCLUSION

The development of PTGDS for the Pakistani Muslim population has important implications for research and mental health care to support SDG 3 based on health & wellbeing. It helps to provide better understanding of trauma survivors' experiences, helping professionals offer culturally sensitive, personalized treatment options.

With outstanding reliability and cultural relevance, this study developed a validated scale for assessing posttraumatic growth and depreciation in the Pakistani Muslim population. The scale focusses the dual feature of trauma, providing insightful information for evaluation and interventions regarding mental health. It can direct further investigations and help practitioners improve psychological health and trauma recovery in Pakistan.

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Annexure A

Table 1 ***Expert rating, no of acceptance and item- CVI for Posttraumatic Growth and Depreciation Scale (PTGDS)***

Serial No.	Expert No. 1	Expert No. 2	Expert No. 3	Expert No. 4	Expert No. 5	Expert No. 6	No. of acceptances	Item CVI
1	4	4	3	4	4	4	6	**1**
2	4	4	4	2	3	2	4	.66
3	4	4	3	2	4	4	5	**.83**
4	4	3	2	4	4	3	5	**.83**
5	4	3	3	3	4	2	5	**.83**
6	4	4	4	3	4	3	6	**1**
7	3	3	4	4	4	3	6	**1**
8	1	3	2	3	3	2	3	.50
9	4	3	3	4	4	4	5	**.83**
10	4	4	4	4	4	4	6	**1**
11	2	4	1	1	4	2	2	.33
12	3	3	4	3	2	4	5	**.83**
13	3	3	2	2	4	3	4	.66

Serial No.	Expert No. 1	Expert No. 2	Expert No. 3	Expert No. 4	Expert No. 5	Expert No. 6	No. of acceptances	Item CVI
14	3	4	4	1	4	4	5	**.83**
15	4	3	3	2	4	4	5	**.83**
16	4	3	4	4	4	4	6	**1**
17	4	4	3	4	4	4	6	**1**
18	4	4	3	1	4	1	4	.66
19	4	3	3	4	4	4	6	**1**
20	4	3	4	4	4	4	6	**1**
21	4	4	4	4	4	3	6	**1**
22	4	4	4	4	4	4	6	**1**
23	4	4	3	4	4	4	6	**1**
24	3	4	3	4	3	4	6	**1**
25	1	2	4	4	4	2	3	.50
26	3	3	4	4	4	3	6	**1**
27	4	3	4	4	4	2	5	**.83**
28	4	3	4	4	4	2	5	**.83**
29	4	3	2	2	4	4	4	.66
30	3	4	4	3	4	1	5	**.83**
31	4	3	4	4	4	2	5	**.83**
32	3	3	2	4	4	3	5	**.83**
33	4	3	3	2	3	1	4	.66
34	1	2	4	3	2	2	2	.33
35	4	3	3	4	3	4	6	**1**
36	3	3	2	4	3	1	4	.66
37	4	4	3	4	4	4	6	**1**
38	1	4	3	4	4	2	4	.66
39	3	3	4	4	4	4	6	**1**
40	3	4	3	4	4	4	6	**1**
41	3	3	4	4	3	4	6	**1**
42	3	2	3	3	2	4	4	.66
43	3	3	2	4	3	3	5	**.83**
44	3	3	4	4	3	4	6	**1**
45	3	3	2	4	4	3	5	**.83**
46	3	3	1	4	4	2	4	.66
47	3	4	2	4	4	2	4	.66
48	3	4	2	4	4	3	5	**.83**
49	3	4	1	4	4	2	4	.66
50	3	4	1	4	4	2	4	.66
51	3	3	3	4	1	4	5	**.83**
52	3	4	1	3	4	4	5	**.83**
53	3	4	1	3	4	3	5	**.83**

Note. I-CVI above .78 has been boldfaced.

Table 2 ***Factor Structure of Posttraumatic Growth and Depreciation Scale (N = 175)***

Sr. No.	Item. No.	Loadings			
		1	2	3	4
1	PTGD13	**.719**			
2	PTGD1	**.691**			
3	PTGD16	**.632**			.392
4	PTGD4	**.592**			

Sr. No.	Item. No.	Loadings			
		1	2	3	4
5	PTGD14	**.557**	.315		
6	PTGD19	**.533**	.532		
7	PTGD31	**.528**	.406		
8	PTGD15	**.515**			.467
9	PTGD2	**.474**			
10	PTGD17	**.429**	.419		.366
11	PTGD35	**.413**			
12	PTGD28		**.744**		
13	PTGD27		**.715**		
14	PTGD6		**.691**		
15	PTGD5		**.580**	.304	
16	PTGD11		**.546**		.406
17	PTGD29		**.482**		.348
18	PTGD21		**.436**		
19	PTGD20	.399	**.430**	.328	
20	PTGD30		**.356**		
21	PTGD34				
22	PTGD3			**.599**	
23	PTGD8			**.569**	
24	PTGD10			**.485**	
25	PTGD24			**.478**	
26	PTGD18	.331		**.453**	
27	PTGD22			**.418**	
28	PTGD7			**.414**	.377
29	PTGD26				
30	PTGD32				
31	PTGD25				
32	PTGD9				**.600**
33	PTGD33				**.574**
34	PTGD12	.425			**.464**
35	PTGD23		.335		**.436**
Eigen Value		4.60	4.45	2.68	2.60
% of Variance		13.14	12.65	7.66	7.43
Cumulative % of Variance		13.14	25.82	33.48	40.91
Cronbach's Alpha		.84	.75	.73	.71

Note. Factor Loadings ≥ .30.

Table 6 ***Psychometric Evaluation of Confirmatory Factor Analysis of Posttraumatic Growth and Depreciation Scale (N=205).***

Factors	***CR***	***AVE***	***MSV***	**Λ**
Self and Spiritual Metamorphosis	0.931	0.553	0.289	
PTGDSQ1				.783
PTGDSQ2				.770
PTGDSQ4				.743
PTGDSQ13				.765
PTGDSQ14				.698
PTGDSQ15				.784
PTGDSQ16				.746

Factors	***CR***	***AVE***	***MSV***	**Λ**
PTGDSQ17				.717
PTGDSQ19				.706
PTGDSQ31				.696
PTGDSQ35				.762
Exploration and Autonomy	0.922	0.569	0.350	
PTGDSQ5				.728
PTGDSQ6				.743
PTGDSQ11				.715
PTGDSQ20				.810
PTGDSQ21				.784
PTGDSQ27				.772
PTGDSQ28				.810
PTGDSQ29				.736
PTGDSQ30				.682
Resilience and Emotional Wellness	0.895	0.551	0.160	
PRGDSQ3				.610
PTGDSQ7				.742
PTGDSQ8				.763
PTGDSQ10				.754
PTGDSQ18				.825
PTGDSQ22				.721
PTGDSQ24				.765
Emotional Intelligence and Healthy Boundaries	0.780	0.470	0.350	
PTGDSQ9				.675
PTGDSQ12				.647
PTGDSQ23				.650
PTGDSQ33				.765

Note. CR = Composite reliability, AVE = Average variance extracted, MSV = maximum shared variance λ (lambda) = standardized factor loading