

## Posttraumatic Growth and Depreciation from University Students' Perspectives

Amin Mirzaee<sup>1,2</sup>, Azize Alizade<sup>1</sup>, Behnaz Dowran<sup>2\*</sup>, Akram Shafiezhadeh<sup>2</sup>

### Abstract

**Objective:** This study investigated whether a sample of Iranian university students considered posttraumatic depreciation (PTD) and posttraumatic growth (PTG) as negative or positive. Also, possible gender and religiosity differences in understanding of changes in PTD and PTG were evaluated.

**Method:** The present cross-sectional study was conducted during 2019-2020. The target sample Consisted of 298 students (mean age = 23.79) from 3 Universities in Esfahan and Tehran (Iran), recruited by convenience sampling. The sample answered to the scales, including Posttraumatic Growth Inventory and Posttraumatic Depreciation Inventory; and Iranian version of The Clark and Stark Religious questionnaire.

**Results:** Despite the overall support for the PTG and PTD constructs, the present study showed that there are cross-cultural differences that can affect people's perception of item evaluation positively or negatively. In this study, almost all items that were evaluated differently with operationally defined PTG and PTD belonged to "Relating to Others" factor. The result also displayed gender and religiosity differences in perceptions of growth and depreciation.

**Conclusion:** These results suggest that it is necessary to identify the concept of PTG and PTD in each culture and the individual differences that may affect the perception of PTG and PDT be considered.

**Key words:** *Culture; Gender Differences; Iran; Posttraumatic Growth*

1. Clinical Psychology Department, Faculty of Medicine, Baqiyatallah University of Medical Sciences, Tehran, Iran.

2. Behavioral Sciences Research Center, Life Style Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran.

### \*Corresponding Author:

Address: Behavioral Sciences Research Center, Life Style Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran,  
Postal Code: 14435916471.

Tel: 98-21 87555401, Fax: 98-21 88620843, Email: dowranb@bmsu.ac.ir

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Individuals have differences in reactions to highly stressful life events. They undergo positive or negative changes resulting from encountering traumatic experiences, which are called “posttraumatic growth” (PTG) and “posttraumatic depreciation” (PTD) respectively (1). PTG generally includes factors of new opportunities, positive changes in relating to others, personal strength, spiritual change, and appreciating of life (2). PTD construct is proposed by Baker et al (3). It referred to negative changes in the same areas with PTG, including changes to perceive of self, the relation with others, and the perception of life (4). Although these 2 concepts are distinct in linguistics, they have “self-realization” as a common core (1) and both of them are parts of the personal recovery process among survivors (5).

According to Tedeschi & Calhoun’ model, components such as personality traits, fundamental assumptions, rumination, and social relationships, are involved in overcoming trauma and coping with critical life experiences (1). Positive and negative changes may happen simultaneously in distinct sections (4) and posttraumatic growth (PTG), and posttraumatic stress symptoms (PTSS) might exist at the same time after a disturbing experience (6). Also, posttraumatic stress disorder (PTSD) and PTG are considered as typical negative and positive psychological responses, which can coexist in individuals who experience traumatic events (7). Some studies have reported positive correlations between PTG with PTSS (6). It has been proposed that deliberate rumination after a traumatic event and coping with social support are the prevalent reasons for PTSS and PTG (6) and rumination mediates the relationships of fear and guilt to PTSD and PTG (7). There are individual differences in responses to distressing experiences. The conceptualization and perception of a particular posttraumatic change as growth or depreciation could be affected by various factors, such as gender, religious beliefs, and culture.

Gender is a factor that could affect the understanding of PTG & PTD. According to a meta-analysis (8), women in comparison with men tend to report higher levels of growth. Jin, Xu & Liu’s (9) study on earthquake survivors showed significant differences between men and women in the total PTSD and in 3 of the main PTSD parts (re-experience, avoidance and numbness, and arousal). Also, women reported a higher PTG than men, especially in improved relationships with others and increased personal strength (9).

Although some factors like tendency to ruminate on constructive issues or using more emotion-focused coping strategies might lead to gender differences (9), difference in value systems and gender role expectations across different cultures can cause various interpretations of psychological changes stated in both PTG and PTD. Oshiro et al (1) found understanding of

positive or negative changes is influenced by culture and gender.

In addition to gender, differences in religious beliefs can lead to different interpretations of posttraumatic changes. Religious beliefs act as a lens through which people filter interpretations (10). Studies showed that posttraumatic growth correlated with religious beliefs positively (11) and religious coping acted as a moderator of psychological responses to stressful events (12). Positive religious coping (including methods such as the attempt to finding spiritual support, kind religious reassessments, and religious forgiving) was associated with PTG (10,13,14,15) and negative religious coping (including demonic religious reassessments, spiritual dissatisfaction, and punitive religious reassessments) were more strongly related to PTSD (10) and associated with psychological distress (13).

Although spiritual changes are often considered as a positive growth, the results of a recent study showed disagreement about religious beliefs and positive change in the study group (1). This result has been attributed to the Japanese culture, lifestyle, and traditions (1).

Some studies have displayed cross-cultural differences in posttraumatic growth (16) and recognized some differences between how people define PTG among American and Japanese samples and definitions of PTG (17). Oshiro et al (1) investigated the perceptual accordance between defined PTG and PTD via understanding of positive and negative changes within a sample of Japanese students. Although overall the study supported the construct of post-traumatic growth, and partly for post-traumatic depreciation, in Japanese students, the results showed some differences for a few PTG items and more variability for PTD items.

Given that past studies have shown the existence of cultural differences, in the context of Iranian culture, which is known as a religious society (18), what composes negative or positive changes post trauma may be different from those beheld in American or Japanese culture. The study of individuals’ perceptions of negative and positive changes is necessary because how the conditions and changes are interpreted by individuals plays a role in the occurrence of PTG or PTD (1).

According to the authors, PTD has not been studied in Iran so far, but several studies have studied PTG in different groups (for example, cancer, hemodialysis, or heart patients) and have evaluated its relationship to factors such as social support and religiosity. However, there is not any study about people’s perception of the operational definition of PTG or PTD .

Therefore, the authors of this study, inspired by the study by Oshiro et al (1), aimed to evaluate agreement between perceptions of negative-positive changes and defined PTD and PTG as a function of culture. Since perceptions may differ based on gender and religious beliefs, religiosity and gender are considered for evaluation too. Therefore, the present study addresses the following questions: (1) is there a consensus between

Iranian university students' perceptions of positive and negative changes with the operational definition of PTG & PTD? (2) Is there any gender differences in evaluating of PTG/PTD items? (3) Is there any religiosity differences in evaluating of PTG/PTD items?

## Materials and Methods

### Study Design and Participants

A cross-sectional study was performed using the anonymous self-report questionnaire. Convenience sampling method was used to select the participants. University students were selected from 2 universities in Tehran and a university in Esfahan (Iran). A total of 302 students completed questionnaires; data from 4 participants were omitted because of incomplete and invalid responses, and 298 questionnaires reminded for analysis .

The selection of a sample group of university students made it possible to compare the results with a similar study conducted in Japan (1).

### Procedures

The aim of the study was explained to participants. Students who provided informed consent responded to the questionnaire. No incentives were considered for participation .

### Measures

In addition to assessing demographic information, participants also responded to the expanded versions of the PTGI and PTDI and the Persian version of the Clark and Stark Religious questionnaire.

### Posttraumatic Growth Inventory and Posttraumatic Depreciation Inventory

The scales contain 25 items measuring PTG (19) and 25 items measuring PTD (3). PTGI and PTDI factors are I: Relating to Others, II: New Possibilities, III: Personal Strength, IV: Spiritual-Existential Change, and V: Appreciation of Life. For these scales, responses are routinely prepared on a 6-point scale. Because this study aimed in evaluating negative changes, positive changes, or neither, we used the modified format with 3 responses: positive, negative, and neither (1). Students answered PTG and PTD items alternately (1a, 1b, 2a, 2b, 3a...). The students did not know which item belonged to PTG or PTD .

Heydar Zadeh et al's study revealed that the Persian version of PTGI (21-item) has acceptable validity and reliability (20). In the present study, the forward-backward procedure was applied to translate PTGI and PTDI from English into Persian. Cronbach's alpha was 0.86 for the PTG subscale and 0.87 for the PTD subscale.

### 1. The Persian Version of the Glock and Stark Religious Questionnaire

In this study, the Persian version of the Glock and Stark questionnaire was used. The present questionnaire is a 5-dimensional scale that includes belief, emotional, consequential, ritual, and intellectual dimension. The

measurement scale used in this questionnaire is the Likert scale, which contains 5 items of value (strongly agree, agree, intermediate, disagree, and strongly disagree), and the values of each statement range from 0 to 4. The result of the numerical summation shows the value of each item in the total score of the subject, which ranges from 0 to 104. Therefore, the scores of 0 to 26 indicate weak religiosity, 27 to 77 indicate moderate religiosity, and 78 to 104 high religiosity (21). The validity of this questionnaire in different studies has been determined on different samples, which indicate its high validity in different dimensions. In this study, Cronbach's alpha was 0.93.

### Analysis

Calculations were carried out using IBM SPSS software, version 19. Frequency and percentages were determined for "positive change, negative change, and neither" for each question. Chi-square tests and one-way ANOVA were used to evaluate gender and religiosity differences in responses.

## Results

### Evaluation of PTG items

Of the participants, 51.3% to 79.2 % evaluated 14 items (3,4,5,6,8,9,12,13,14,15,18,19,20,22), and 41.6% to 49.3% of the participants evaluated 7 items (1, 11, 16, 17, 21, 24, 25) of PTGI-X as positive changes. Items 2 (I have a greater sense of harmony with the world), 7(I more clearly see that I can count on people in times of trouble), 10 (I have a greater sense of closeness with others), and 23 (I learned a great deal about how wonderful people are) were evaluated by 40.3% to 60.1% as negative changes (Table 1).

### Evaluation of PTD items

Of the participants, 50.3% to 75.8% evaluated 18 items (1, 3, 4, 5, 6, 8, 9, 11, 12, 13, 14, 15, 17, 18, 19, 20, 21, 22) and 37.6% to 46.3% of the participants evaluated 5 (2, 10, 16, 24, 25) PTDI-X items as negative changes. Items 23 (I learned a great deal about how disappointing people are) and 7 (I more clearly see that I cannot count on people in times of trouble) were evaluated by 40.3% to 52.3% as positive changes (Table 2).

### Gender Differences in PTG evaluation

The PTGI-X item that showed significant gender differences was just item 1(I change my priorities about what is important in life) ( $\chi^2 = 15.81$ ;  $p = 00$ ). Also, 55.4% of women and 44.6% of men rated the first item as a positive change. So women were more probable to evaluate this item as a positive change .

### Gender Differences in PTD evaluation

The PTDI-X item that showed significant gender differences was just item 1(I find it difficult to clarify priorities about what is important in life) ( $\chi^2 = 14.83$ ;  $p = 0.001$ ). Men were more likely to evaluate this item as negative changes (women: 37.7%; men: 62.3%) .

### Religiosity Differences in PTG evaluation

The PTGI-X items that showed significant religiosity differences were items 1 (I change my priorities about what is important in life) (F=3.46; p=0.0003); 6 (I have a better understanding of spiritual matters)(F = 17.92; p = 0.000); 13 (I am able to do better things with my life) (F=4.68; p = 0.010); 15 (I can better appreciate each day)(F= 5.51; p = 0.004); 21 (I have a stronger religious faith)(F = 34.02; P = 0.000); 24 (I feel better able to face items about life and death) (F = 4.37 ;P = 0.013); 25 (I better accept needing people) (F = 3.841; P = 0.023).

The results of follow-up tests showed that participants who evaluated items 6, 15, 21, 24 and 25 as positive changes were more religious than those who evaluated them as negative. Although participants who evaluated item 1 as negative changes were more religious than those who evaluated it as positive.

**Religiosity Differences in PTD evaluation**

The PTDI-X items that showed significant religiosity differences items 1(I find it difficult to clarify priorities about what is important in life) (F = 5.22; P = 0.00); 6 (I have a poorer understanding of spiritual matters)(F = 10.30; P = 0.00); 12 (I am less certain that I can handle difficulties) (F=3.23; P = 0.04); 13 (I am less capable of doing better things with my life) (F = 3.23; P = 0.04); 16 (I feel less connected with all of existence)(F = 3.13; P = 0.04); 21(I have a weaker religious faith) (F = 17.49; P = 0.04); 22 (I discovered that I'm weaker than I thought I was) (F = 3.79; P = 0.02).

The results of follow-up tests showed that participants, who evaluated items 1, 6, and 21 as negative changes were more religious than those who evaluated them as positive.

**Table1. Rating of Positive and Negative Judgment in Posttraumatic Growth Items**

PTG Items	All participants (N = 298)					
	Positive		Negative		Neither	
	N	%	n	%	n	%
1a I change my priorities about what is important in life. (V)	130	43.6	88	29.5	80	26.8
2a I have a greater sense of harmony with the world. (IV)	100	33.6	120	40.3	78	26.2
3a I have a greater appreciation for the value of my own life. (V)	192	64.4	53	17.8	53	17.8
4a I developed new interests. (II)	157	52.7	68	22.8	73	24.5
5a I have a great feeling of self-reliance. (III)	173	58.1	69	23.2	56	18.8
6a I have a better understanding of spiritual matters. (IV)	171	57.4	65	21.8	62	20.8
7a I more clearly see that I can count on people in times of trouble. (I)	62	20.8	179	60.1	57	19.1
8a I established a new path for my life. (II)	189	63.4	57	19.1	52	17.4
9a I have greater clarity about life's meaning. (IV)	165	55.4	62	20.8	71	23.8
10a I have a greater sense of closeness with others. (I)	101	33.9	127	42.6	70	23.5
11a I am more willing to express my emotions. (I)	143	48.0	99	33.2	56	18.8
12a I know better that I can handle difficulties. (III)	174	58.4	65	21.8	59	19.8
13a I am able to do better things with my life. (II)	167	56.0	62	20.8	69	23.2
14a I am better able to accept the way things work out. (III)	226	75.8	44	14.8	28	9.4
15a I can better appreciate each day. (V)	186	62.4	65	21.8	47	15.8
16a I feel more connected with all of existence. (IV)	124	41.6	84	28.2	90	30.2
17a New opportunities are available which wouldn't have been otherwise. (II)	147	49.3	74	24.8	77	25.8
18a I have more compassion for others. (I)	153	51.3	86	28.9	59	19.8
19a I put more effort into my relationships. (I)	186	62.4	64	21.5	48	16.1
20a I am more likely to try to change things that need changing. (II)	236	79.2	29	9.7	33	11.1
21a I have a stronger religious faith. (IV)	145	48.7	83	27.9	70	23.5
22a I discovered that I'm stronger than I thought I was. (III)	180	60.4	60	20.1	58	19.5
23a I learned a great deal about how wonderful people are. (I)	62	20.8	147	49.3	89	29.9
24a I feel better able to face questions about life and death. (IV)	134	45.0	62	20.8	102	34.2
25a I better accept needing people. (I)	135	45.3	93	31.2	70	23.5

**Table2. Rating of Positive and Negative Judgment in Posttraumatic Depreciation Items**

PTD Items		All participants (N = 298)					
		Positive		Negative		Neither	
		n	%	n	%	n	%
1b	I find it difficult to clarify priorities about what is important in life. (V)	80	26.8	154	51.7	64	21.5
2b	I have less sense of harmony with the world. (IV)	102	34.2	115	38.6	80	26.8
3b	I have less of an appreciation for the value of my own life. (V)	51	17.1	172	57.7	75	25.2
4b	I have fewer interests than before. (II)	67	22.5	154	51.7	77	25.8
5b	I have a diminished feeling of self-reliance. (III)	55	18.5	170	57.0	73	24.5
6b	I have a poorer understanding of spiritual matters. (IV)	50	16.8	177	59.4	71	23.8
7b	I more clearly see that I cannot count on people in times of trouble. (I)	156	52.3	76	25.5	66	22.1
8b	I have a less clear path for my life. (II)	55	18.5	183	61.4	60	20.1
9b	I have less clarity about life's meaning. (IV)	53	17.8	170	57.0	75	25.2
10b	I have a greater sense of distance from others.(I)	109	36.6	112	37.6	77	25.8
11b	I am less willing to express my emotions. (I)	89	29.9	150	50.3	59	19.8
12b	I am less certain that I can handle difficulties. (III)	65	21.8	178	59.7	55	18.5
13b	I am less capable of doing better things with my life. (II)	58	19.5	178	59.7	62	20.8
14b	I am less able to accept the way things work out. (III)	50	16.8	210	70.5	38	12.8
15b	I appreciate each day less than I did before. (V)	37	12.4	186	62.4	75	25.2
16b	I feel less connected with all of existence. (IV)	66	22.1	137	46.0	95	31.9
17b	Fewer opportunities are available than would have been there. (II)	57	19.1	153	51.3	88	29.5
18b	I have less compassion for others. (I)	74	24.8	157	52.7	67	22.5
19b	I put less effort into my relationships. (I)	57	19.1	184	61.7	57	19.1
20b	I am less likely to try to change things that need changing. (II)	26	8.7	226	75.8	46	15.4
21b	I have a weaker religious faith. (IV)	56	18.8	165	55.4	77	25.8
22b	I discovered that I'm weaker than I thought I was. (III)	56	18.8	177	59.4	65	21.8
23b	I learned a great deal about how disappointing people are. (I)	120	40.3	82	27.5	96	32.2
24b	I feel less able to face questions about life and death. (IV)	49	16.4	138	46.3	111	37.2
25b	I find it harder to accept needing others. (I)	80	26.8	135	45.3	83	27.9

**Discussion**

This study investigated the perceptions of PTG and PTD and gender and religiosity differences in perceptions of them among Iranian university students.

The greater number of the sample group judged most PTGI-X items as positive and PTDI-X items as negative changes, so that more than 50% of participants evaluated 14 items of PTG and 18 items of PTD as positive and negative, respectively. In items 14 (to able to accept the way things work out) and 20 (to try to change things that need changing), participants' agreement was above 70%. These results show the high consistency of participants' perceptions with the operational definitions of PTG and PTD.

A few PTGI-X items were considered as negative and a few PTDI-X items were considered as positive. Almost all items that were evaluated differently with operationally defined PTG and PTD belonged to "Relating to Others" factor. Although research has shown that social interactions affect psychological well-

being, reactions of individuals in the support network vary. Support dependent on the source may perceive to be helpful or not (22). Also, there are cultural differences in the perception of social support (23) and the effectiveness of social support in moderating the impact of stressful life events experience varies across cultural and ethnic groups (24). For example, Triandis and Gelfand (25) revealed if members of Asian American cultural groups turn to their social contacts for help, they have greater concerns about obligation and indebtedness (24). Therefore, different evaluation of items that belonged to "Relating to Others" factor can be due to cultural differences. Another possible explanation may be related to different perceptions or definitions of "Relating to Others" as a component of PTG or PTD in the sample group. Finally, the research participants may not tend to report their dependence on others for cultural reasons .

In a similar study conducted in Japan (1), more than 80% of Japanese participants evaluated almost all items

of PTG as positive changes, which is higher than the agreement of the Iranian participants in the present study. Only for 1 item of PTG, having a stronger religious faith, 40% of Japanese participants considered it a positive change, which was almost similar to the status of that item in the present study. Also, in evaluating 2 items of the PTD's items, there is a noticeable difference between the Iranian participants in the present study and the Japanese participants in Oshiro et al (1) study. Contrary to the Iranian participants, "Difficulties with prioritizing what is important in life" and "discovering they are weaker than they initially thought" were not considered negative changes by Japanese participants. These differences may be explained by cultural differences that have affected PTG and PTD perceptions.

This study also displayed gender differences in the understanding of growth and depreciation only in 1 item. Women were more probable to consider "Changing the Priorities" as a positive change and less likely to evaluate "Clarifying Priorities about What is Important in Life" as a negative change. These items can reveal flexibility, which is more associated with women, while rigidity is considered a manly trait in a traditional stereotype (1). Also, some studies have shown that acute stress can impair cognitive flexibility in men, not in women (26).

Religiosity differences in the perceptions of growth and depreciation were observed in some items. Almost all of these items belonged to "Spiritual-Existential Change" and "Appreciation of Life" factors. More religious participants evaluated the following items as positive changes: 'better understanding of spiritual matters', 'having a stronger religious faith', 'better able to face items about life and death' and 'better appreciate each day', and evaluated items 'changing the priorities about what is important in life', 'difficult to clarify priorities about what is important in life', 'poorer understanding of spiritual matters' and 'having a weaker religious faith' as negative changes. In all of these items except 1 (changing the priorities about what is important in life), participants' perceptions of positive-negative changes were along with operationally defined PTG and PTD. Previous researches have shown positive associations between meaning in life and religiosity, and spiritual and religious beliefs and experiences have been considered as important sources for life meaning (27). Also, life meaning is a critical element that is used by people to cope with life's challenges. It helps to interpret and organize experiences, achieve goals, and prioritize what is important in life (28). So it seems that since religion plays a role in setting priorities, and longitudinal analyses showed that religious affiliation predicted a decline in self-direction (independent thought and action) (29), shifting priorities to more religious ones may be viewed as a negative change.

### Limitation

This is the first study that evaluated the perceptions of posttraumatic growth and posttraumatic depreciation among Iranian students. There are a few study limitations. First, the generalizability of the findings is limited because data were collected only from university students from Tehran and Esfahan (Iran) by convenience method. Second, this was a cross-sectional study, which does not explain the cause-effect relationship between the studied variables. Last, participants were not asked if they had any experience with a distressing incident, as perceptions may vary based on it.

### Conclusion

This study evaluated whether psychological changes after disturbing experiences, defined in Western studies as PTG or PTD, were also considered as positive or negative within an Iranian sample. Despite the overall support of the present study for the PTG and PTD constructs, the results showed that there are cultural differences that can affect people's perception of item evaluation positively or negatively. Almost all items that were evaluated differently belonged to "Relating to Others" factor. It is suggested that PTG may be defined differently by people from different cultures. Therefore, it is necessary to identify the concept of PTG and PTD in each culture and then modify the questionnaire for each of the items that need to be changed or, if necessary, create a native questionnaire.

Gender and religion are also 2 factors that must be considered in interpreting the findings of PTG and PTD studies. Based on traditional stereotypes, assessments of changes can vary between men and women. Also, spiritual-existential changes may be viewed differently among individuals depending on whether they are religious or not. Therefore, in the study of PTG and PTD, those individual differences that may affect individual perception should be considered.

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### Conflict of Interest

None.

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