

## THE IMPACT OF RUMINATION ON POSTTRAUMATIC GROWTH AND EMOTIONAL REGULATION AMONG BURN SURVIVORS

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### **Abstract**

*This study aimed to examine the impact of rumination on posttraumatic growth (PTG) with emotional regulation among burn survivors. Traumatic experiences often lead to complex cognitive, emotional, and behavioral responses, where rumination plays a critical role in psychological adjustment. A quantitative correlational research design was employed, and data were collected from (N=50) burn survivors (male and female) aged 18–64 years at the Pak-Italian Burn Center, Multan, using purposive sampling. Standardized instruments including the Event-Related Rumination Inventory (ERRI), Posttraumatic Growth Inventory (PTGI), and Emotion Regulation Questionnaire (ERQ) were utilized. The findings revealed a significant positive relationship between PTG, emotional regulation, and deliberate rumination, suggesting that purposeful reflection on traumatic experiences facilitates psychological growth. In contrast, intrusive rumination demonstrated a negative association with PTG and emotional regulation, indicating its maladaptive nature. Regression analysis showed that intrusive rumination negatively predicted PTG, whereas deliberate rumination had a positive but non-significant effect. Demographic variables such as age, education level, and mode of burn injury showed no significant differences across study variables. Gender differences were observed only in emotional regulation, while PTG and rumination remained consistent across male and female participants. Overall, the findings emphasize the constructive role of deliberate rumination and highlight the need for targeted psychological interventions to promote adaptive coping and growth among burn survivors.*

**Keywords:** *posttraumatic growth, rumination, intrusive rumination, deliberate rumination, emotional regulation, burn survivors*

### **Introduction**

Highly stressful and traumatic events typically produce a variety of cognitive, emotional, behavioral, and social elements that influence the eventual outcome. A common theme in models that focus on the aftermath of these significant life events is the impact of rumination<sup>1</sup> that occurs. Although the ruminative thinking that goes on after a traumatic or stressful event has been often considered to be negative, depressogenic, and intrusive thinking that may dominate

the survivors' experience as they focus on the harm they have experienced, a broader and multidimensional view of rumination that can occur under these circumstances has been suggested theoretically and found empirically (Hoeksema, 2023).

Excessive and bothersome thoughts regarding unpleasant events and emotions are referred to as ruminating thoughts. For instance, a person with depression may consistently think negative, self-defeating ideas, but then individual with a past of disturbance may be incapable to stopover intellectual about the occasion (Villines, 2019). Rumination is linked to poor cognitive control, rigid attention, a number of unpleasant personality qualities, and a worsening of depressive symptoms (Cooney & Gotlib, 2010). Rumination's relationship to depression has been the subject of the most in-depth research (Mor & Winquist, 2002), and theory and research point to probable pathways by which rumination can influence posttraumatic stress disorder (PTSD) symptoms. For starters, recalling regrettable past experiences, which is undoubtedly what ruminating is, is linked to a slower fading of the regret that comes with the recollection (Ritchie et al., 2006).

Rumination is described as the thoughts and actions that make people focus on their emotional condition, including invasive and intentional rumination (Watkins, 2008) (Watkins, 2008). According to Nolen-Hoeksema and Davis (2004), intrusive rumination is a cognitive process in which people focus on the negative perception of traumatic events, allowing these events to uncontrollably invade people's cognitive worlds. Deliberate rumination, on the other hand, refers to people actively and repeatedly reexamining and contemplating the traumatic event.

A traumatic event occurs to almost 90% of people in the United States at some point in their lives, and some of these people go on to endure serious psychiatric issues like Posttraumatic Stress Disorder (Kilpatrick et al., 2013). The actions people take to control the emotions they experience, when they experience them, and how they express those emotions are referred to as emotion. Given this definition, it is obvious that people differ not only in the types and degrees of emotions they feel, but also in the ways in which they react to those emotions in terms of motivation. For instance, emotions can be perceived as sources of pressure or control, in which case a protective suppression may be used in response (Hodgins & Knee, 2002). Cognitive reappraisal entails altering one's beliefs about an emotion-evoking stimulus in order to change a person's subjective emotional reaction, for as by thinking positively about the benefits of a terrible experience (Cann et al., 2010). There has been a lot of interest in two specific tactics. Reappraisal is a behaviorally focused response approach, whereas expressive suppression is a cognitively focused antecedent-centered method (Gross, 2015).

### **Literature Review**

The characteristics of the experience, a person's character, and cognitive processing are three key sorts of components that have been linked to post-traumatic growth in previous research. It appears that ruminating is essential for post-traumatic growth. Su and Chen (2021) found that purposeful ruminators frequently exhibit post-traumatic growth because they are better able to evaluate their positive reassessments of tough occurrences (such as cancer, burns, or other highly stressful conditions) when they revisit them. Lower levels of depression have been linked to deliberate or introspective thoughts.

Cohen (1998) noticed that youngsters were less inclined to encounter PTG following awful mishaps and were more compromised than grown-ups. They were likewise much of the time more restless. Age and PTG among young people had a great connection, and more established survivors had sufficient mental improvement to search for the importance of injury. The

instrument of PTG can be made sense of by an exhaustive model it features the significance of insight and fights that horrible circumstances put mental burden on individuals and test their underlying mental frameworks. Mental exercises are fundamental for the improvement of PTG to create equilibrium of the mental framework. Young people effectively finished PTG by reproducing their discernments and perspectives comparable to horrendous events. Numerous specialists have investigated rumination as one of the mental cycles in damaged individuals With respect to the connection among rumination and PTG, there was, in any case, no definitive finding accordingly, the motivation behind this study was to make sense of how they are connected.

As indicated by Gross (1998), "the cycles by which people influence which feelings they have, when they have them, and how they experience and express these feelings," feeling guideline is the capacity to control undesirable as well as troublesome feelings. A further point is that feeling guideline ought not to be viewed as a cycle where upsetting feelings are controlled, subdued, or obliterated yet rather as the ability to manage and answer fittingly to gloomy feelings. As per this hypothesis, versatile feeling guideline is a multi-faceted build that incorporates the following"(a) mindfulness, understanding, and acknowledgment of feelings; (b) ability to participate in objective coordinated ways of behaving and limit imprudent ways of behaving while encountering gloomy feelings; (c) versatile utilization of situational proper systems to weak the power as well as span of profound reactions, as opposed to kill feelings totally; and (d) readiness to encounter pessimistic feelings as an essential part of chasing after significant exercises throughout everyday life". Aspects of the care build are reflected in the past origination of feeling guideline (Roemer et al. 2015).

Roemer et al. (2015) observed that acknowledgment of feelings is a critical part of both feeling the board and care. Various examination have proposed that care based treatments can assist clinical populaces with bettering control their gloomy feelings. By a guessed meta-system called re-perceiving, which mirrors a development from a narcissistic viewpoint to an objective viewpoint, an expansion in careful mindfulness might change how individuals associate with inner encounters, like contemplations and feelings (Shapiro et al. 2006).

### **Rationale of the Study**

Previous research has revealed that problem-focused coping, adaptive coping, and religious coping all have an impact on post-traumatic growth. In addition to these elements, research has revealed that strong marital and interpersonal emotional support as well as personality traits like optimism can promote beneficial development. In spite of the fact that post-horrible advancement in consume survivors has not been all around examined These survivors go through post-horrendous development as they persevere through physical and close to home enduring all through their operations, embrace sound way of life decisions, conform to real changes, and go through psychosocial transformation that straightforwardly upgrades personal satisfaction. In spite of the fact that there have been reports areas of strength for of among rumination and PTG it has stayed hazy assuming the different assortments of rumination variedly affect PTG. By applying a piece of a current rumination scale to PTG, this study means to expand on the earlier discoveries.

### **Objectives of the Study**

1. To look at the impact of meddling, purposeful rumination on posttraumatic development in burn survivors

2. To survey the connection between close to home control and posttraumatic advancement in consume survivors and nosy, conscious rumination

### Hypotheses

H<sup>1</sup> There was negative Correlation between rumination, posttraumatic growth and emotional regulation.

H<sup>2</sup> There would be an impact of intrusive rumination on posttraumatic growth among burn survivors.

H<sup>3</sup> There would be an impact of deliberate rumination on posttraumatic growth among burn survivors.

H<sup>4</sup> There were significant differences between rumination and posttraumatic growth across gender.

### Methodology

A correlation research design was used. In this study survey method was conducted as a method by using questionnaire. Burn Survivors from the Pak-Italian Burn Center in Multan were included as a research sample N=50 male and female burn survivors with the age 18 to 64 years burn patients including Males and Females from indoor with purposive sampling technique and outdoor department were included in this study.

### Instrument/Tool

**1. The Event Related Rumination Inventory:** The modified Event-Related Rumination Inventory was used to measure intrusive and deliberate rumination (Zhou et al., 2014b). The items were rated on a 6-point scale that ranged from 0 (*not at all*) to 5 (*always*). The internal consistencies were good and were 0.90 for intrusive rumination soon after the earthquake and 0.88 and 0.89 for recent intrusive and deliberate rumination, respectively.

**2. The Posttraumatic Growth Inventory:** Posttraumatic Growth was measure using a modified version of the Posttraumatic Growth Inventory (Zhou et al., 2014a). The original Posttraumatic Growth Inventory was developed by Tedeschi and Calhoun (1996) and consists of the following five subscales: personal strength, new possibilities, relating to others, appreciation of life, and spiritual change. Each of the 21 items is scored on a 6-point scale that ranges from 0 (no change) to 5 (very great degree of change). The PTGI has good internal consistency and good construct, convergent, and discriminate validities. The modified inventory exhibited good reliability and construct validity for a sample of adolescent survivors of the Wenchuan earthquake (Zhou et al., 2015a).

**3. Emotion regulations questionnaire:** Emotion regulation was measured with the 10-item ERQ (Gross and John, 2003). It measures the habitual use of cognitive reappraisal (6 items, e.g., “When I want to feel more positive emotion, I change the way I'm thinking about the situation”) and expressive suppression (4 items, e.g., “I keep my emotions to myself”) on a 5-point scale ranging from strongly disagree (1) to strongly agree (5), with separate scores for each subscale. Cronbach's  $\alpha$  of .73 and .75 for cognitive reappraisal and expressive suppression, respectively (Chukwuorji et al., 2017). In the current sample, Cronbach's  $\alpha$  of .78 (cognitive reappraisal) and .81 (expressive suppression) were obtained.

### Statistical Analysis

After data collection data was examined with the statistical programmed SPSS version 27. The demographic data of the participants is analyzed using descriptive statistics on Demographic variables. Descriptive statistics is a statistical technique that provides a brief summary of raw data acquired from a sample or population (Kaur et al., 2018). The mean and standard deviation

of the participants' demographic data was calculated. The mean differences in continuous variables were compared using independent samples t- tests. Pearson Product Correlation analysis was used to evaluate the association between the study variable.

**Results**

**Table 1**

*Demographic Variables of Study Variables (N=50)*

Demographics	Variables	F	%	M	SD
Gender	Female	25	50		
	Male	25	50		
Education	Middle	4	10		
	Secondary	11	27.5		
	Intermediate	15	37.5		
	Graduated	10	22.5		
	Post graduated	10	2.5		
Age				31.6	12.6
Burned body surface area	<10%	21	42		
	<50%	29	58		
Mode of burn injury	Fire	10	20		
	Chemical	9	18		
	Electrical	10	20		
	Ultraviolet Radiation	11	22		
	Liquid	10	20		

Note: Table 1 shows all variables, categories, frequencies, mean and standard deviation.

**Table 2**

*Number of items and alpha reliabilities (N=50)*

**Reliability Statistics**

Scale	N of items	Cronbach's Alpha
PTGI	21	0.762
ERRI	20	0.784
ERQ	10	0.644

Note: PTGI= Posttraumatic Growth Inventory, ERRI= Event Related Rumination Inventory, ERQ= Emotional Regulation Questionnaire

The results shows that all of the present study are internally consistent as alpha coefficients of all scales are above .07 except for emotional regulation questionnaire i.e., 0.64

**Table 3**

*Pearson Correlations Matrix shows the relationship between Intrusive Rumination, Deliberate Rumination, Posttraumatic Growth and Emotional Regulation (N=50)*

	Intrusive Rumination	Deliberate Rumination	Posttraumatic Growth	Emotional Regulation
Intrusive Rumination	1	.101**	-.173*	-.051*
Deliberate Rumination		1	.104**	.029***

Posttraumatic Growth	1	.173*
Emotional Regulation		1

**Table 3** shows there is a noteworthy inverse significant relationship between Deliberate Rumination and Posttraumatic Growth suggesting that lower levels of deliberate rumination are linked to more posttraumatic growth. On the other hand, a significant positive correlation has been observed between Emotional Regulation and Deliberate Rumination. Result shows that there is a significant Positive Correlation between Posttraumatic Growth, Emotional Regulation and Deliberate Rumination.

**Table 4**

*Mean, Standard Deviation, t-value and scores of Rumination, Posttraumatic Growth and Emotional Regulation between male and female patients (N=50).*

Variable	(Female) N=25		(Male) N=25		t	sig	95% Interval	
	M	SD	M	SD			LL	UL
Posttraumatic Growth	2.6119	0.9794	2.8500	0.91522	-0.794	.619	-.8449	.3687
Rumination	2.0325	.4749	2.0250	0.0813	0.056	.142	-.2632	.2782
Emotional Regulation	3.955	.6684	4.1350	1.2179	0.579	.001	-.8089	.4489

Table 4.5 the results indicate that there is a significant inference ( $p < .01$ ) between Posttraumatic Growth in Female and male. While it is found that there is significant difference in scores Posttraumatic Growth in male and female. Indicate that emotional regulation shows a significant difference among female and male patients while posttraumatic growth and rumination shows no significant difference. Results also indicate that there is a significant difference ( $p < .01$ ) between Rumination male and female. It is also indicating that there is a significant difference ( $p < .01$ ) Emotional Regulation in male and female. While it is found that there is significant difference in scores of Emotional Regulation and Rumination in male and female.

**Discussion**

The aim of study was to investigate the impact of posttraumatic growth on rumination with emotional regulation among burn survivors. This study was accomplished through quantitative research method and correlation research design was used with purposive sampling technique for data collection. Data was collected through survey method and instrument used for this purpose was questionnaire. Correlations among all variables and according to proposed hypothesis, it was assessed that there is a significant positive correlation between posttraumatic growth, emotional regulation and deliberate rumination. It also shows results that intrusive rumination has a negative correlation with posttraumatic growth and emotional regulation (Richard et al., 2004). The correlation results showed that intrusive rumination was not associated with PTG, which was inconsistent with the previous study. Intrusive rumination compelled individuals to recall catastrophic events and the negative aspects of traumatic events unconsciously, which is disadvantageous to the development of PTG. (Taku et al., 2009). Mean differences shows in terms of rumination, posttraumatic growth and emotional regulation. The results, however,

indicate that emotional regulation shows a significant difference among female and male patients while posttraumatic growth and rumination shows no significant difference (Oliver & John, 2003).

### **Conclusion**

This study investigated the relation between rumination (including intrusive rumination and deliberate rumination) and PTG, to better understand this association by investigating the moderating role of emotional regulation. Intrusive rumination was negatively correlated to posttraumatic growth in burn survivors. Results showed that deliberate rumination was associated with PTG, but intrusive rumination was not, indicating that rethinking the traumatic events from a meaningful perspective could help individuals achieve PTG. In addition, First, it is worthwhile to increase appropriate emotional regulation techniques and provide psychological counseling, which may meet their needs of being cared for and loved. In turn, this helps them reflect on their value and fosters the development of PTG. Second, deliberate rumination is associated with adolescent's PTG, clinical social workers and counselors can help adolescents focus on rethinking the positive side of the traumatic events and rebuilding the new meaning of the adverse experiences

### **Recommendations**

Future research should be planned with general trauma survivors. Design and implement interventions specifically aimed at addressing rumination and promoting posttraumatic growth among burn survivors. These interventions can include cognitive-behavioral therapy, mindfulness-based approaches, or narrative therapy that target rumination and facilitate the growth process. Provide information about the potential negative effects of rumination and the benefits of emotional regulation in enhancing resilience and fostering positive outcomes after trauma. Enhance emotional regulation skills: Incorporate training programs or workshops that focus on developing effective emotional regulation skills among burn survivors. Encourage burn survivors to seek and engage in social support networks such as support groups or peer mentoring programs. Foster an environment where individuals can share experiences, exchange coping strategies, and provide validation and encouragement to one another.

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