

Effect of PTSD on Emotion Dysregulation among Burn Victims, A Moderating Role of Coping Mechanism



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Abstract: *This research analyzed the relationship between the post-traumatic stress disorder (PTSD), emotion dysregulation and coping mechanisms among the burn victims of the Pakistani community. This research is a correlational study and it enrolled a sample of 65 individuals between the age of 18-50 that has been affected by burn trauma. The hypotheses put forward shows that the PTSD and emotion dysregulation have a positive relationship, as well, the female burn victims with burn injuries have higher level of emotion-focused coping as compared to problem focused coping and also the coping mechanisms moderate and weakens the relationship between PTSD and the emotion dysregulation. This leads to the uncovering of very strong links (significant correlations) between PTSD, emotion dysregulation, and main coping mechanisms. Gender variance with regards to coping strategies can also be seen as women tend to adopt more a higher amount of the emotion-focused approach. Regression analysis and moderation analysis provide findings that consistence with hypotheses, underline the need of emotion regulation solving for those who are suffering from burn injuries. The research makes a significant contribution to burning trauma victims, both to the understanding of psychological effects and to guide the specific interventions for impacted individuals.*

Keywords: *Posttraumatic Stress Disorder, Emotion Dysregulation, Coping Mechanism, Burn Victim*

Introduction

Many studies are now looking at how often mental problems happen after burns and the damage they do to getting better (Weiss et al., 2019). People often know that burns can affect a person's mind and mental health. Studies show that one out of three people who got burned also have big mental problems like bad body image, being sad or worried. It's hard to sleep and they get shocked memories after what happened

(Chen et al., 2023). Posttraumatic stress disorder (PTSD) is a fear condition that starts after either being in or hearing about something scary. PTSD symptoms are things like being too aware and frightened, keeping away from reminders of the trauma, having unwanted thoughts or bad dreams about it again. Also, there can be problems with thinking and feeling wrongly (Baillie et al., 2018). Emotion dysregulation is one of major factors that have been found to be

related to PTSD in groups across the races or cultures. According to this definition, emotion dysregulation is a complex construct that consists of the following: (a) not feeling sadness deeply enough to accomplish important things in life; (b) not being able to control behavior when you're mad or bewildered; (c) there is no way to reduce the strength and length of longtime bad feelings quickly, and this leads to emotional instability.

PTSD and Emotion Dysregulation

Related research in clinical (Tull et al. 2018) and nonclinical trauma-exposed samples have discovered that individuals who exhibit more PTSD symptoms typically support higher levels of emotion dysregulation, with more severe PTSD symptoms being linked to higher deficiencies in the Clarity. Theoretically, a variety of mechanisms, including frequent and intense experiences of negative affect that minimize the perceived tolerability of such affect or the negative reinforcement of the use of maladaptive coping strategies in the context of negative affect (e.g., avoidance behaviour), might contribute to impairments in emotion regulation as a result of PTSD symptoms.

Moderating role of Coping Mechanism

The stress and coping theory say that coping is how a person tries to deal with emotionally or behaviorally difficult situations. (Lazarus & Folkman, 1984). Scientists think that how we react to stress finally decides our mental health (Kiani, Ahsan & Khattak, 2024). Moreover, folks make ways to handle things using their support system. Many scientific studies and

discussions have focused on identifying adaptive and maladaptive coping mechanisms that occur after stressful life events, including traumatic events. The literature has produced two main conceptualizations of adaptive and maladaptive coping. While coping strategies are conceptualized as approach-focused or avoidance-focused in the second, they are conceptualized as problem-focused or emotion-focused in the first (Zaman et al, 2021).

A dual component of the coping process (problem- and emotion-focused coping) was proposed by Lazarus and Folkman (1984). In contrast, there are three ways that Pearlin and his associates (such as Pearlin & Schooler, 1978) perceived the role of coping. (a) By eliminating or changing the circumstances that give rise to the issue (this is comparable to solving a problem). (b) By managing the stressful experience's meaning in a way that deactivates the troubling emotion (such as cognitive restructuring); and (c) by handling the experience's emotional fallout (such as emotion regulation and seeking emotional support) (Li et al., 2023; Suleman, Khattak & Husain, 2021). Many scientific studies and discussions have focused on identifying adaptive and maladaptive coping mechanisms that occur after stressful life events, including traumatic events. The literature has produced two main conceptualizations of adaptive and maladaptive coping. While coping strategies are conceptualized as approach-focused or avoidance-focused in the second, they are conceptualized as problem-focused or emotion-focused in the first.

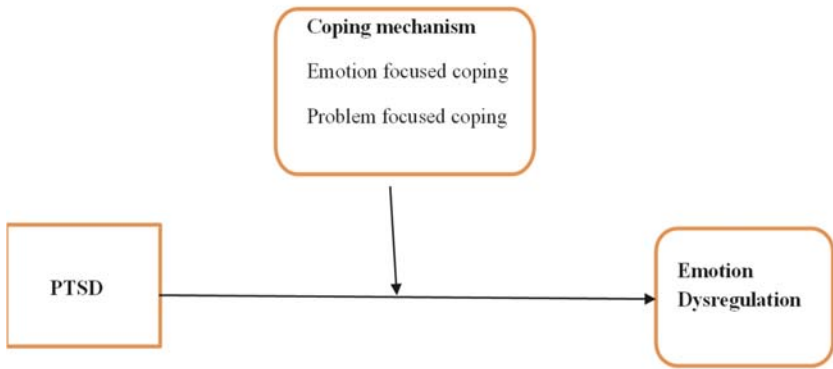


Figure 1. Conceptual framework of study

Hypotheses

H1. There will be a positive relationship between PTSD and emotion dysregulation among burn victims.

H2. There will be a higher level of emotion focused coping in females than males burn victims.

H3. Coping mechanisms will moderate and weakens the relationship between PTSD and emotion dysregulation among burn victims.

Sample

Based on the previous research (Idrees et al., 2017) and (Waqas et al., 2019), A sample of 65 burn victim participants with age range (18-50) included in this study.

Instruments

Demographic Information Sheet contained details about the participants' demographics, including age, gender, family structure, and socioeconomic status.

The PTSD Checklist for DSM-5 (PCL-5) was developed by researchers affiliated with the National Center for PTSD, including (Frank et al., 2013). The reliability of this scale is 0.94 in the study by (Bovin et al. 2016). The PTSD checklist 5 is a test with 20 questions that people use by themselves. It tells the signs of Post-Traumatic Stress Disorder (PTSD) based on DSM-5 rules. This scale has four domains which are according to the criterion of PTSD which is in DSM-5: Experiencing again (criterion B), Stay away from it (rule C) and Abnormal thoughts or feelings (rule D). Feeling

too anxious all the time which is bad for your health. (Rule E.)

Problems with the 16-point Emotion Control Scale (DERS-16) by Bjureberg and others in 2016. The 16 items that make up the DERS-16 evaluate the following aspects of difficulty regulating emotions: (1) not accepting bad feelings (three things, called NOTACCEPT); 2) can't do actions to reach goals when feeling sad emotions (Three items are labelled GOALS).

The 28-item COPE scale (Carver et al., 1989), which was theoretically established on bases on several models of coping, was reduced to the Brief-Cope. Reliability of this scale is 0.71. The items are graded 5 point Likert scales ranging from strongly agree to strongly disagree (Matsumoto et al., 2020). The means and standard deviations for each subscale are listed below.

1. Problem focused – 2.47 (0.63)
2. motional focused – 2.23 (0.49)
3. voidant coping – 1.64 (0.45)

Procedure

In the beginning, the study area's burn centers, hospitals were identified. A list of burn victims was compiled from these sources. The purpose of the study and the importance of confidentiality were communicated to the researchers. Participants who decided to participate in the study have filled out the consent forms. At any time during the process, participants may withdraw.

Result

Table 1

Demographic Characteristics of the Sample (N = 65)

	Description	Frequency	Percent
Gender	Male	26	40
	Female	39	60
Age	18-25	10	15.4
	26-39	32	49.2
	40-50	23	35.4
Education	uneducated	17	26.2
	primary level	19	29.2
	graduation	12	18.5
	post graduate	7	10.8
	other	10	15.4
Marital status	unmarried	25	38.5
	married	40	61.5
Family system	Nuclear	36	55.4
	Joint	29	44.6
Degree of burn	first degree	18	27.7
	second degree	26	40.0
	third degree	21	32.3

Table 01 highlights the number of participants in each category along with percentage value.

Table 2

Psychometric properties for all the Study Variables (N = 65)

Scales	N	α
PTSD	20	.95
EDS	16	.95
CMS	28	.87

Note. PTSD = Posttraumatic Stress Disorder; EDS = Emotional Dysregulation Scale; CMS = Coping Mechanism scale

Result in table 2 shows the reliability significantly high Alpha Reliability Coefficient of PTSD ranging from .95 which is good

enough. Same is evident for the EDS as it ranges from .95 which also comes under good reliability. Alpha Reliability Coefficient of CMS range from .87 which is highly reliable. Results in tables shows that all scales are highly reliable measures for the assessment.

Table 3

Descriptive statistics of the sample (N=65)

	N	Minimum	Maximum	Mean	SD
PTSD	65	29.00	89.00	62.0	17.98
EDS	65	22.00	74.00	52.7	14.67
CMS	65	46.00	88.00	64.96	12.47

Note. PTSD = Posttraumatic Stress Disorder; EDS = Emotional Dysregulation Scale; CMS = Coping Mechanism scale

Table 3 shows the descriptive statistics of the sample. The mean of Posttraumatic Stress Disorder is 62.01 and SD is 17.9. The maximum value for this is 89 and minimum is 29. The

mean of Emotional Dysregulation Scale is 52.7 while the standard deviation is 14.6. The maximum value for EDS is 74 and minimum is 22. The mean of Coping Mechanism scale is 64.9 and standard deviation is 12.4. The maximum value for this scale is 88 and 46 for minimum.

Table 4

Correlations between PTSD, EDS and CMS of the Study

Variables	PTSD	EDS	CMS
1. PTSD	1	.919**	.693**
2. EDS		1	.678**
3. CMS			1

Note. PTSD = Posttraumatic Stress Disorder; EDS = Emotional Dysregulation Scale; CMS = Coping Mechanism scale

The above table 4 shows the result of Pearson Product Correlation which indicates the strength and direction of the relationship among study

variables. The results illustrated that there is a positive significant relationship (0.919**) between PTSD and EDS. There is a significant positive relationship (0.693**) between parental PTSD and CMS. There is a significant positive relationship (0.678**) between EDS and perceived CMS.

Table 5

Means, Standard Deviations and t-values of gender among Study Variables (N =65)

Scales	Male (n = 26)		Female (n = 39)		T(63)	P	95% CI		Cohen's d
	M	SD	M	SD			LL	UL	
PCOPE	16.73	4.66	19.76	5.75	-2.24	.02	-5.74	-.33	0.57
ECOPE	29.50	5.16	29.53	6.003	-0.27	.97	-2.91	2.83	-

Note. PCOPE=problem focused coping, ECOPE= Emotion Focused Coping

Table 05 reveals the significant mean difference on gender of participants, findings show that Emotion Focused Coping scored higher on (M= 29.53, SD= 6.003), as compared to Problem

Focused Coping (M= 19.76, SD= 5.75). The Cohen's d value of Problem Focused Coping was 0.57, which indicate average effect size, p value of Problem Focused Coping was .02 while Emotion focused coping was 0.97 and t value of Problem Focused Coping was -2.24 and for emotion focused coping was -0.27 respectively.

Table 6

Simple linear Regression analysis of Posttraumatic stress and Emotion Dysregulation (N=65)

Variables	EDS		β	<i>T</i>
	B	<i>S. E</i>		
Constant	6.297	2.61		2.4
<i>PTSD</i>	.75	.04	.919	18.4
<i>R</i> ²	.844			
Adjusted <i>R</i> ²	.842			

Note. PTSD=Post traumatic stress disorder, EDS= Emotion Dysregulation scale, β =standardized coefficient, B=regression coefficient, SE= standard error

This table shows the regression analysis as direct effect of PTSD on EDS. Regression coefficient (B) for PTSD is 0.75, showing that for every unit increase in PTSD, the EDS score increases by 0.75 units. PTSD has a considerable positive

effect on EDS, as seen by its standardized coefficient (β) of 0.919. Given that the t-value for PTSD is 18.4, which is highly significant ($p < 0.05$), it may be concluded that there is statistical support for a relationship between PTSD and EDS. With an R^2 of 0.844, PTSD tends to 84.4% of the variation in EDS. The adjusted R^2 value of 0.842 shows that this model with PTSD as the predictor explains a significant percentage of the variance in EDS.

Table 7

Moderation analysis

Predictor Variables	Coefficients	SE	<i>T</i>	<i>p</i>	95% CI	
					LLCI	ULCI
Constant	-48.9108	16.5717	-2.9515	0.0045	-82.0480	-15.7735
PTSD	1.4701	0.2439	6.0266	0.0000	0.9823	1.9579
COPE	1.0524	0.3082	3.4146	0.0011	0.4361	1.6686
Int_1	-0.0138	0.0043	-3.2114	0.0021	-0.0224	-0.0052
<i>R</i> ²	.86					
<i>R</i>	.93					

Note. PTSD=Post traumatic stress disorder, COPE= Coping Orientation to Problems Experienced Inventory, SE= standard error, LL=lower limit, UL=upper limit, CI= confidence interval

The result of the moderation analysis shows a significant relationship between emotion dysregulation (DERS), coping mechanisms (COPE), and post-traumatic stress disorder (PTSD). Increased emotion dysregulation was shown to be independently correlated with higher PTSD symptoms and coping strategies, with values of 1.47 ($p < 0.001$) and 1.05 ($p = 0.0011$), respectively. Furthermore, a significant effect ($p = 0.0021$) was shown by the interaction term (Int_1), suggesting that coping techniques

moderated the relationship between emotion dysregulation and PTSD symptoms. The R^2 value, which stands at 0.86, is high, indicating that a significant amount of the variance in the dependent variable can be explained by the model. In addition, a strong linear relationship between the predictors and the dependent variable is indicated by the high correlation coefficient (R), which is at 0.93.

Discussion

The American Psychiatric Association emphasizes that people who have been in stressful conditions can legally develop PTSD, which is more than a compelling mental condition (APA, 2013). The psychological consequences can last long time especially after

burn injuries which is severe injury that is very difficult to deal with (Thombs, Murphy & Shepard, 2018). Emotional dysregulation by which emotion cannot be controlled has been found to be one characteristic of PTSD, which is diagnosed as the condition where problems in regulating emotional reactions come along (Tull et al., 2017). The psychology of burn victim's sort one of medical problems that should be treated well requires attention to mental health accordingly. At last, we need to accept the fact that PTSD is not just a physical disease, but a condition involving emotion regulation as well.

The aim of the study being considered here was to check the correlation between PTSD and dysregulation of emotions among the burn victims, with Pakistani community being taken into account. Researching the available literature on the constructs led to the generation of a hypothesis that (1) PTSD among burn victims and emotion dysregulation has a positive correlation. (2) Women are likely to rely more on emotional coping strategies such as emotional coping instead of problem-focused coping as compared to men. (3) Moderation of the association between PTSD and emotion dysregulation will be done using coping strategies among burn survivors. Following discussion, of the hypotheses.

The socioeconomic characteristics that are portrayed in Table 1 offer information specifying the sample of this study. There was a significant difference in the sample between the female participants' representatives that accounted for about 60% and the male participants' 40%. This gender distribution could simply be a result of job situations and accidents at their homes, which have been proven by the body of research to affect women more than men. This is supported by Peck et al. (2019).

The reliability analysis demonstrated in Table 2 reveals that the study uses a consistent set of measuring scales. The high alpha reliability coefficients for the Emotional Dysregulation Scale (EDS) ($\alpha = 0.95$), Coping Mechanism Scale (CMS) ($\alpha = 0.87$), and PTSD ($\alpha = 0.95$), respectively, attest to a good internal consistency and reliability. The results of the

study reveal that the relation between EDS and PTSD may be on the high side thus, this supports the first hypothesis. This positive relationship was strong as demonstrated by a high Pearson Product Correlation coefficient, which was of 0.919. Thus, the conclusion of the table 4 coincides with my hypothesis number 1. The outcome of the study aligns with that of other researchers which demonstrate that the people with PTSD often find it tougher to manage their emotions (Johnson et al., 2019). The most affected people here may be those with burn injuries of a specific nature. They might have greater difficulties in coping with the consequences of their trauma and might display increased emotional dysregulation (Garcia & Martinez, 2021).

Empirical studies suggest moderately and highly correlated impacts of emotion dysregulation with PTSD across different trauma types and study populations. The science-backed testing shows that the PTSD victims usually have a trait of enhanced emotional reactivity, problems in recognizing emotions and right coping mechanisms (Tull et al., 2017). Also, the emotional dysregulation has been proven to be an important part of the symptoms continuation and worsening of PTSD symptoms over time (Cloitre et al., 2019). Researches have provided evidence that there is a correlation between PTSD and impaired regulation of emotions among patients experiencing trauma. Indeed, Cloitre et al. (2019) state that there are three core components of emotion dysregulation, namely, that PTSD patients are often characterized by an enhanced emotional sensitivity, difficulties in emotionally modulating, and impaired emotional processing. In summary, the data points to the conclusion symptoms of PTSD such as intrusive memories, avoidance behaviors, and hyperarousal cause emotional regulation that has to be achieved in an effective way.

The research findings are in consistent to the second hypothesis as they proved that there is significant difference between coping mechanisms among the burn survivors. The result was table 5 showed the female participants had a higher score on the Emotion Focused

Coping whereas lower than the Problem Focused Coping scale. Such result as it correlates with other works that show women can deal with stress or trauma by building emotional-oriented coping strategies such as obtaining emotional support and expressing feelings (Lee & Kim, 2019). While the outcome is lessened with a moderate effect size (Cohen's $d = 0.57$), there is evidence of a gender difference in different coping strategies. The study stands out, stressing the protective function of critical life skills and the responsibility of their role in moderating PTSD and emotional dysfunction relationship. As such, the third hypothesis is strongly confirmed. Besides, the fact that the substantial interaction term (int_1) is displaying because coping strategies were found to outweigh the relationship between emotion dysregulation and the presence of PTSD. This would mean that compared to people who would use less effective coping methods, even in situations of feeling of upset, the individuals who would adopt effective coping methods may have less severe symptoms of post-traumatic stress disorder (PTSD).

Conclusion

The result of the research demonstrated the familiar trend that burn victims who had PTSD also had difficulties with regulating their emotions, which had been documented in previous PTSD research. This study demonstrated the moderating effect between PTSD and emotion dysregulation of coping methods and shed light on new ways of potential intervention. The study provided evidence that coping behavior, when appropriately used, could moderate the effects of emotion dysregulation on PTSD symptom severity. Thus, the development of adaptive coping strategies should be considered a main priority for support programs for burn survivors. Interventions will focus on ways of adapting the coping skills. Such approaches will enable resilience development and may facilitate posttraumatic growth among burn patients, which eventually will improve the long-term mental health performance.

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