

PREDICTING THE ROLE OF DEPRESSION AND ANXIETY IN INFLUENCING CONDUCT ISSUES IN WOMEN BURN VICTIMS

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Abstract

This study evaluated the role of anxiety and depression in influencing conduct problems in women with burn injuries. By administering standardized scales of Adjustment Problems for adults (including depression, anxiety, and conduct issues), combined with a demographic questionnaire, to all thirty-two participants on one occasion using a cross-sectional design, both depression and anxiety were shown to significantly predict conduct problems overall ($F [2, 197] = 65.49, p .001$). Anxiety and depression together accounted for 39.9% ($R^2 = .399$) of the variance in conduct problems, and higher levels of anxiety were found to be statistically significant predictors of increased rates of conduct problems ($\beta = .546, p \leq .001$) due to the mechanism of anxiety-related instability influencing the conduct behaviors. Conversely, depression was not found to independently predict rates of conduct problems ($\beta = .108, p = .214$), highlighting the importance of both anxiety and depression as critical variables when working to develop evidence-based approaches aiming at reducing conduct problems and enhancing behavior adjustment skills among women suffering from burn injuries.

INTRODUCTION

Burn injuries cause one of the world's highest rates of trauma both physically and psychologically, with over 11 million cases of burn injuries each year, of which 180,000 people will die worldwide (WHO, 2023). Many cases of burn injuries result in more than just a significant amount of physical damage; they can take the form of an extensive hospital stay, an extensive amount of rehabilitation and therapy, an extensive amount and duration of pain, and ultimately, result in the development of permanent scars. Survivors almost always face a long-term consequences/side effects of receiving

one or more burn injuries-due, most significantly, to the fact that their bodies have been disfigured or rendered disabled as a result of burn injury-which result in-the development of chronic pain and, thus, negatively affect functioning and, therefore, quality of life (Van Loey & Van Son, 2003). In addition to physical consequences, the psychological and emotional burdens of living after the gain of a burn injury can be extensive and can result in years of prolonged and unfulfilled suffering. After burns, psychological consequences such as fear, shame, guilt, and worry during the recovery phase are common

reactions; if left unaddressed, they can lead to serious long-term consequences (Fauerbach et al., 2007). Women who survive burns face a specific, intense psychosocial struggle, with the added complexity of experiencing psychosocial issues due to gendered social roles, beauty and identity-related cultural norms, and a higher risk of interpersonal violence or accidental household burns—which are disproportionately higher among women in low-and middle-income countries (Park et al., 2008). Evidence suggests that women with burns report more psychological distress, visible emotional disruptions, relationship issues, and difficulty remaining socially connected to others, compared to their male counterparts). Many female survivors' psychosocial injury is intensified when bodily injuries occur to the face, hands, or other areas that are visible to others, because they need to think about body image, self-image, and issues of stigma (Thombs et al., 2008). Distress related to body image can be long-lasting, emotional instability that affects recovery or the potential of posttraumatic adaptation (Rothman et al., 2016).

Depression is one of the most common mental health issues associated with burn injury and affects approximately one-third to half of individuals with burn injuries, significantly impacting their emotional functioning and motivation to recover, pain management, and social engagement (Roca et al., 1992). Symptoms such as hopelessness, lack of interest, excessive crying, irritability, and cognitive dysfunction can all make managing daily occupations and challenges that arise during rehabilitation, more difficult for people with burn injuries. Research supports the notion that an individual with a burn injury could be vulnerable to depressive symptoms due to the burden of disfigurement, surgery, decreased mobility, and dependence on caregivers (Thombs et al., 2008). Depression often persists long after the physical aspect of the injury heals and barriers to re-employment and long-term recovery, such as post-traumatic growth (Gilboa, 2001).

Burn survivors display an extremely high incidence of anxiety disorder, which often

develops in conjunction with depression. It has been shown that anxiety in burn patients remains persistently high through the recuperative process of acute care, rehabilitation, and post-discharge (Zaboli Mahdiabadi et al., 2024). Symptoms of anxiety exhibited by burn survivors, such as excessive worry, panic, restlessness, hypervigilance, and fear of social rejection, may worsen in response to unpredictable medical interventions, visible scarring, and uncertainty about their future functioning (Zaboli Mahdiabadi et al., 2024). Burn survivors with high levels of anxiety may also avoid social interaction and have difficulty resuming occupational activities, a decreased motivation to engage in physical therapy, and emotional dysregulation that leads to barriers to recovery (Jain et al., 2017). A study by Jain et al. (2017), involving 100 adult burn patients (both males and females), examined the relationships between burn-related variables (e.g. total body surface area burned, visible location of scars) and anxiety, depression and self-esteem. They found that burn patients with facial or visible burns had significantly higher depression scores ($M = 23.4$) than patients without visible burns ($M = 17.2$), $t(98) = 2.86$, $p < .01$, and that greater burn depth was modestly correlated with anxiety ($r = .22$, $p = .01$).

In addition to emotional difficulties, behavioural and conduct problems are increasingly recognized as important outcomes post-burn that may act as barriers to rehabilitate and be part of social life. Some behaviors from conduct problems experienced by burn survivors can include irritability, aggression, impulsiveness, avoiding social contact, breaking rules, being verbally or physically confrontational, or failing to follow medical or therapeutic advice (Elameen et al., 2025). Interacting with caregivers, families, and medical personnel becomes more difficult when a woman struggling with emotional regulatory problems (emotional distress) experiences an emotional crisis during or immediately after a burn injury. Emotional distress, caused by trauma, can cause maladaptive behaviours, which may hinder social functioning and cause

problems in relationships (Williams and Griffiths, 1991).

Although the effects of trauma have been documented across many different types of populations, little research has been done specifically on the relationship between psychological distress and behaviours in women who are survivors of burns. Many studies have shown the link between behavioural dysfunction and emotional distress, with several studies identifying depression and anxiety as major contributors to externalising behavioural problems such as aggression and lack of rehabilitation (Daros et al., 2021). Furthermore, there is also evidence that individuals with high levels of emotional dysregulation are more likely to exhibit conduct problems due to ineffective coping strategies, unresolved traumatic experiences, and decreased tolerance for stress (Fauerbach et al., 2007). Within burns populations, research shows that emotional factors are strongly associated with engagement in rehabilitation, pain management, and return to social recovery, reinforcing the need to adequately address psychological factors in holistic burn care (Van Loey & Van Son, 2003).

Further, narrative review on the psychological complications related to burns and found that up to 54% of burn survivors had mild depressive symptoms and up to 45% met criteria for posttraumatic stress disorder (PTSD). They noted that behaviors such as social withdrawal, non-compliance with treatment and substance use are under-explored outcomes of these emotional states (Chokshi et al., 2022).

The cross-sectional study conducted in Pakistan finds that 31.9% had clinically significant depression and 45.6% had clinically significant anxiety symptoms at the 6-month post-injury follow-up; within the sample of female patients with facial/neck burns, the depression score mean ($M = 21.4$, $SD = 8.2$) was significantly higher than male patients ($M = 17.6$, $SD = 7.5$), $t(98) = 2.12$, $p = .037$, as well as low perceived social support ($MSPSS < 30$) was correlated with increased conduct-related complaints ($r = -.38$, $p < .01$). A multicenter cross-sectional study of women burn survivors in Pakistan (Ali & Pervaiz,

2019) examined adjustment, cognitive function and conduct disturbances in 200 women (mean age 24.3 yrs), indicating that higher PTSD scores were significantly associated with both cognitive problems ($\beta = -1.80$, $p < .01$) and adjustment/conduct problems ($\beta = 1.73$, $p < .01$) in approximately 38.1% of women meeting threshold for PTSD; authors report women experienced conduct disturbances (anger, noncompliance) in conjunction with depressive and anxiety symptoms.

Although the emotional and behavioural consequences following burn injuries are common in global health and rehabilitation literature, research related to understanding depression and anxiety as predictors of conduct issues in female burn survivors is limited. Previous films have focused primarily on post-traumatic stress, self-esteem, management of pain, and quality of life, while behavioural adjustment could have received more attention, particularly for women with the added burdens of feeling emotional and social obligation and expectation. The understanding of predictive psychological mechanisms is vital to improving holistic care frameworks, enhancing rehabilitation outcomes, and optimizing long-term psychosocial adjustment in women recovering from burn trauma (Park et al., 2008).

Literature

Rationale of the Study

Burn survivors often continue to experience ongoing psychological distress well beyond their physical healing, with research indicating the connections between pain, anxiety, and depression. Survivors who identify as female are especially vulnerable to psychological factors focused on body awareness, judgment by others, and social norms. Emotional resilience and coping mechanisms appear to modulate the psychological adjustment process after a burn injury, and the levels of depressive and anxiety symptoms experience the most variance based on these constructs. Burn survivors with lower levels of resilience are more likely to continue being distressed over time, and the allostatic load of physiological distress is likely to increase

maladaptive behaviours (e.g. irritability, noncompliance with treatment, and social withdrawal) (Panayi et al., 2024). In addition, the psychological aspects of burn injuries are influenced by social/environmental factors. Low social support, extensive length of hospital stay, visible scarring and extensive surgeries are all experiences associated with increased emotional distress and behavioural problems. Early detection of mental health challenges, and early access to interventions targeting the individual's specific needs (e.g., cognitive-behavioural therapy, resilience-focused programs) will support the emotional recovery from burn injuries and create greater access to addressing behaviour problems (Zaman et al., 2023).

In conclusion, insights into the predictive value of depression and anxiety on behavioural outcomes in female burn survivors will improve holistic rehabilitation. Such understanding can inform treatment, guide mental health screening and trials, and improve patient outcomes by addressing emotional and behavioural aspects. This perspective notes that addressing psychosocial factors is beneficial for mental health, behavioural adaptation, and recovery (Loehr et al., 2022).

Objective

The main objective of the study was to study the predicting role of depression and anxiety on the conduct issues in women burn victims.

METHOD

The main objective of the research was to explore the depression and anxiety as the predictor of conduct problems in women burn victims.

Design

Data was collected using a cross-sectional research design so that inferences about the population of interest could be made at once. This has been characterized as snapshots of the populations from which the data was gathered.

Sample

A sample of 200 women burn victims was carefully selected based on inclusion criteria.

Research participants were women, adult aged above 19 years, who had contained incidental burn injury. The time from the burn must have been acquired after 6 months and before 2 years of the burn event. The exclusion criteria eliminate the children and adolescent age groups from the study. Moreover, women with intentional or self-harm burn injury were also excluded.

Sampling technique

The data was collected using a purposive sampling approach, which was a non-probability sampling technique. The purposive for selection was age, gender, and unintentional burn injury. Data were obtained from the community, hospital's burn center, and NGOs in Lahore, Islamabad, Gujrat and Rawalpindi.

Measures

The following instruments were utilized to collect data from the subjects. A sociodemographic data collection instrument was designed to collect information on age, education level, marriage status, family system, employment status, residence type, burn type, severity of burn, number of body part affected, first aid provided, time since burn, length of hospital stay, number of health problems, satisfaction with care, and who brought patient to burn center. The depression, anxiety, and conduct problems of women with burn injuries were assessed using the Adjustment Problem Scale for Adults (Naz et al., 2018). The scale has three subscales of depression, anxiety, and conduct issues with a total of 48 items. Each item has three response options ranging from 1 to 3 on a 3-point Likert scale. The total score ranges from 48 to 144. The scale has established excellent reliability and validity (Naz et al., 2022).

Procedure

For the collection of data, the current study used purposive sampling technique to recruit women burn victims aged 19 years and above that experience an accidental or unintentional burn injury. The time since the burn injury must be between 6 months to 2 years. The sample were

acquired from community, NGOs, and burn centers in Lahore, Gujrat, Islamabad, and Rawalpindi, Pakistan. Formally, written permission letters from authorities were obtained. The researcher approached participants at desired areas and collected data after oral as well as written consent. The researcher ensured confidentiality, privacy, and anonymity in the research process. Respondents were asked to "tick" the most appropriate response after reading the items in the scale booklet.

Data Analysis

Descriptive statistics and multiple regression were conducted to assess the statistical data using SPSS (v-24).

Table 1 Multiple Regression Analysis Predicting Conduct Problems

Predictor	B	SE B	β	t	p
Constant	5.327	1.568	—	3.397	.001
Anxiety Problems	0.326	0.052	.546	6.320	.000***
Depression Problems	0.081	0.065	.108	1.246	.214

Note. $R = .632$, $R^2 = .399$, Adjusted $R^2 = .393$, $F(2, 197) = 65.488$, $p < .001$.

Dependent Variable: Conduct Problems. A multiple regression analysis was executed to measure whether anxiety and depression predict the conduct problems in women burn victims. The model indicated statistically significant ($F(2, 197) = 65.49$, $p < .001$) prediction. The 39.9% of the variation in conduct problems ($R^2 = .399$), was due to anxiety and depression. Individually anxiety was a statistically significant predictor of conduct related problems ($\beta = .546$, $p < .001$). Whereas depression was not statistically significant predictor conduct problems ($\beta = .108$, $p = .214$).

Discussion

This study looked the predictive role of anxiety and depression on conduct problems among women burn survivors. The key findings suggest that anxiety is a predictor, but depression is not. Anxiety may be experienced by women after burn injury meaning that those with higher anxiety may experience trouble with conduct such as

Results

Most of the women who experienced a burn injury had a bachelor's degree and were not engaged in any kind of employment. Most of the women were in the 19 to 35 age range. Most of the women who were married with 1-3 children. Mostly burn victims lived in an urban area with 3-5 siblings. Most burn victims of burns had a family income of 15,000 to 35,000. Mostly the victim's 1-3 body parts were affected with burn incident. The burn was from scald/hot fluid. Mostly the victims were satisfied with treatment and had 2-3 health problems. Most of the victims had short hospital stay and their parents took them to the hospital.

irritability, aggression, and noncompliance during rehabilitation. This extends previous research that documented that anxiety can result in externalizing behaviors of trauma survivors and that dysregulation of emotions may be observed in maladaptive conduct (Panayi et al., 2024; Zaman et al., 2023).

Although it is common for burn survivors to experience depressive symptoms, depression did not significantly predict conduct problems in this study. This is consistent with research finding that depressive symptoms often manifests as internalizing problems (e.g. sadness, withdrawal, decreased motivation), instead of conduct issues. This again reinforces the need to separate internalizing from externalizing symptoms when evaluating psychological outcomes after burn trauma (Kedadra & Fatima, 2024).

The sociodemographic characteristics of the participants provide further context for these results. Most women were young, urban-dwelling, married, moderately educated, and middle-income. These characteristics all have potential implications for psychological adjustment

because social support and family resources can serve to buffer or increase risk for anxiety-related conduct problems (Gilboa, 2001). For instance, parental participation during a hospital stay may have helped alleviate some of the patients' behavioral issues compared to being out of work creates more chances for anxiety and stress than working with their families, or generally speaking; also, it's about acknowledging the way these two factors may be connected with each other. Therefore, the studies show that mental health treatments should begin on reunification with the patient and how this will integrate into rehabilitation treatment after they get discharged from the burn centre. Treatment options for anxiety in this regard, to mitigate the conduct-related problems (for example) should include cognitive-behavioral therapy, mindfulness techniques, as well as developing resiliency skills in order to improve their psychosocial adjustment to these conditions. In order to continue this study moving forward, psychological predictors of PTSD, changes in emotional and behavioral functioning, and body-image issues amongst female burn survivors has to be assessed using other research studies conducted by Panayi et al. (2024) and Zaman et al. (2023).

Conclusion

Anxiety is a significant predictor of the conduct problem, while depression does not appear to be a significant predictor of conduct problems. Anxiety has been identified as a significant contributing factor to conduct problems.

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