

A Cross Sectional Study on The Effects of Burn-Related Factors on Anxiety, Depression, and Self-Esteem in patients with Burn Injuries

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Abstract

Burns are injuries that are difficult to recover from physically, psychologically, and financially, and many under-researched factors can cause them. The current study's objectives were to evaluate burn patients' levels of anxiety, low mood, and self-esteem as well as different burn-related variables that may have an impact on them. 100 patients with burn injuries were enrolled in this cross-sectional study from a govt tertiary care hospital. Using the Hamilton Anxiety Rating Scale, Hamilton Depression Rating Scale, and Rosenberg Self-Esteem Scale, respectively, the patients' levels of anxiety, depression, and self-esteem were evaluated. Upon medical stabilization and within 2 to 8 weeks of the injury, an assessment was conducted. Data was collected and statistical analysis was performed. The majority of the study's sample was male, married, and had an average age of 33 years. The majority of injuries were accidental burns. The majority had burns that covered 20–59% of their total body surface area (TBSA), and 55% had facial burns. TBSA and anxiety, despair, or low self-esteem did not appear to be significantly correlated with one another. The same was true for face burns. However, there was a strong correlation between deep burns and depression ($p=0.01$) and anxiety ($p=0.02$). Burn injuries and burn depth are linked to high incidence of anxiety and depression. Adjustment and recovery in these individuals depend on a number of additional elements, such as the patient's psychological state, the type and severity of the damage, and the subsequent medical treatment. To determine the extent and determinants of psychological issues in burn patients, more research is necessary.

Keywords: Depression, Anxiety, Burns, Self-esteem, Deep Burns, Facial Burns.

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Introduction

The term "burn injuries" refers to wounds brought on by the application of heat, chemicals, electrical current, or radiation

to a bodily surface that results in tissue destruction. Burns are a severe, unpredictable, type of trauma that have an impact on the victim's physical and mental

health. The long-term psychological repercussions of burns are complex and vary from patient to patient, but with better medical care, more patients are surviving the acute stage of recovery.[3] Pain, anxiety, distress, post-traumatic stress disorder, worry about physical deformity, social isolation, and financial strain due to the longer length of hospitalization and treatment necessary are the most prevalent psychological issues experienced by burn injury patients.[4] Burn damage patients' quality of life and wellbeing are improved to a greater extent when their psychological issues are resolved.[5] If these issues are not resolved while they are still in the acute stage, they could develop into chronic psychiatric morbidities.[6] Burn-related pain is known to be accompanied by anxiety throughout surgical operations and physical therapy, and studies have shown that procedural pain-related anxiety increases as therapy advances.[7] Pain, anxiety, and distress are known to be linked to post-traumatic stress disorder in burn victims, and patients who experience more anxiety during subjective assessments report more acute background pain. Post-burn depression has been linked to predisposing variables such as loss and bereavement, pain, social isolation during hospitalization, and pre-burn melancholy.[9] Burn scars frequently result in deformity, which may affect the patient's body image, ability to function in social situations, and overall quality of life.[10] Twelve months after the injury, subjective body image dissatisfaction is a significant predictor of post-burn psychological functioning.[11] A lengthier hospital stay has been linked to increased patient discomfort, socio-occupational functioning loss, economic dependency, social isolation, and a sense of loss of independence.[12] Burn patients still need psychological support, and there is a need for a psychiatric staff in the burns unit despite the overlap between burn injuries and psychiatric illness.[13]

Scarring from burn injuries to the face, neck, and head is common. One of the most frequent and challenging burn damage sequelae to treat is scarring and contractures. Contrary to visibility, scar severity was not linked to distress. Scars in visible places are linked to social anxiety, avoidance, and low quality of life.[14] Women who have suffered facial burns are more likely to experience sadness as a result, and evidence suggests that overall, women are more susceptible to the effects of disfigurement.[15] With burn patient survival rates rising, it is critical to address the psychological needs of burn survivors in order to help them return as closely as possible to their premorbid levels of functioning and quality of life, as well as to successfully reintegrate back into society with a healthy body and mind.[16] The current study's objective was to investigate the association between burn patients' levels of anxiety, sadness, and low self-esteem and the total body surface area affected by burn injuries. The burn site's association with respondents' levels of anxiety, despair, and self-esteem was also examined.

Methodology

Study environment and Context

The current study was conducted at Stanley Medical College in India over the course of a year, from January 2020 to August 2020. The plastic surgery department's burns unit's outpatients and inpatients were both involved in the trial. The institutional ethics committee gave its approval to the project. 100 patients who met the inclusion criteria out of a total of 200 patients that were screened were enrolled in the study.

Inclusion Standards

Male and female burn injury patients between the ages of 18 and 65 who were admitted to or followed up on in the burns department, who consented to an interview, and who were between the duration of 2- and 8-weeks post-burn

injury met the inclusion criteria. Patients who had been previously diagnosed with a psychiatric condition (apart from nicotine dependence) were not included in the study.

The surgical team evaluated the characteristics linked to burns, including total body surface area burned, burn depth, and facial involvement, when the patient was admitted to the burns ward. We took note of these facts on a semi-structured proforma using information from the case file.

- Psychiatric morbidity: Using the specified scales, a clinical interview, a mental state examination, and clinical diagnostic assessment, two of the authors evaluated the patients' psychiatric morbidity.

Scales utilized in the evaluation

Hamilton Anxiety Rating Scale (HAM-A): This scale, which has 14 items, is used to gauge how anxious a patient is. There are multiple symptoms associated with each of the 14 things, and each group of symptoms is evaluated from 0 to 4, with 4 being the most severe. Upon completion of the examination, the clinician computes a final, composite score based upon the summing of each of the 14 separately assessed items, indicating the overall degree of the individual's anxiety. The result of this calculation will be a thorough score between 0 and 56. For mild anxiety, a score of 17 or less is required. Mild to severe anxiety is indicated by a score between 18 and 24. Anxiety that ranges from mild to severe is indicated by a score of 25 to 30. One of the earliest anxiety assessment instruments in use, the scale has strong clinical population's reliability and validity.[17]

- Hamilton Depression Rating Scale (HAM-D): For many years, this scale is the gold standard in identifying a patient's state of depression before to, during, and following treatment. It has 21 items and is administered by a

clinician, although the scoring is solely based on the first 17. The interview is typically completed, and the results scored in 15-20 minutes. The scores for eight things range from 0 (not present) to 4 (severe), and the scores for nine items range from 0 to 2. Scores between 8 and 13 denote mild depression, 14 and 18 denote moderate depression, and 19 and 22 denote severe depression.[18]

- Rosenberg Self-Esteem Scale (RSES): The RSES is fashioned after questionnaires used in social surveys. It is a 10-item, 4-point Likert-type scale with responses ranging from "strongly agree" to "strongly disagree" on each topic. There are five statements that are positively worded and five that are negatively worded for each item. The scale gauges respondents' current feelings by asking them to consider their self-esteem. A trustworthy and valid quantitative measure for evaluating self-esteem is the Rosenberg self-esteem scale.[19]

Four of the 100 patients who were enrolled in the study and later developed delirium were questioned eight weeks after the delirium had passed. Two patients were included in the study because they had suicidal burns but no prior or post-admission psychiatric diagnosis or treatment.

Analytical Statistics

Basic descriptive statistics including mean, standard deviation, and median were used in the analysis of the data with the assistance of the SPSS software version 26.0. Where necessary, the Chi square test was applied.

Results

The cases' sociodemographic profile

Out of the 100 patients included, 50 were men and 50 were women. The participants' ages ranged from 19 to 64 years, with a 33 average age. Hindus made up the majority

of the sample's patients, followed by Muslims, and then Christians. In addition, 30 of the subjects were single and 70 were married.

Factors associated to burns

The most frequent type of burn damage among both boys and females was discovered to be accidental burns. The majority of burn victims had burns that covered anything from 20 to 59% of their total body surface area. In addition, 50 of the individuals had superficial burns whereas 50 had extensive burns. In this study, we discovered that 60 subjects—30 men and 30 women—had face burns. The bulk of the participants suffered burns of Grades I and II. Grade I burn ranged from 20 to 39%, Grade II from 40 to 59%, and Grade III from 60 to 70%.

Anxiety relating to burns

Every member of the group displayed anxiety symptoms that ranged from mild to moderate. Men tended to experience anxious symptoms more frequently. In comparison to 10 % of Grade II and 15 % of Grade III cases, 20 % of Grade I cases showed severe anxiety, but the difference was not statistically significant. In contrast

to 10 % of those with superficial burns ($p=0.01$), 30 % of those with profound burns experienced serious anxiety.

Depression and burn injuries

Almost all of the sample ($n=98$) displayed depressed symptoms. Most of them had symptoms that ranged from mild to really severe. Female individuals exhibited very severe symptoms somewhat more frequently than male subjects. Compared to 60% of Grade II cases and 40% of Grade III cases, 60% of Grade I cases experienced severe to very severe depression, although the difference was not statistically significant. In 70% of patients with facial burns, depression ranged from very severe to severe. Compared to 20% of cases with superficial burns, 55% of cases with extensive burns ($p=0.01$) reported very severe depression.

Compared to 65 % of Grade II and 60 % of Grade III cases, 75 % of Grade I cases overall showed normal self-esteem, although the difference was not statistically significant. In contrast to 90 % of individuals with superficial burns, 40% of those with profound burns showed normal self-esteem. (Table 1).

Table 1: Variables and its case related influence

Variable	Severity influencing case variable	P value
Anxiety	Positive	0.01
Depression	Positive	0.01
Self esteem	Positive	0.22

Discussion

The primary goals of the current study were to evaluate the prevalence of common psychiatric issues in burn injury victims and to comprehend the various burn variables that influence patients' psychological outcomes. The socio-demographic traits of the participants were consistent with the epidemiological data on burns found in Indian studies.[20-22] The most frequent type of damage was accidental burns, which is consistent with findings in

International literature on the causes that cause burn injuries.[23]

Our investigation revealed an unexpected result: male patients had a higher prevalence of anxiousness. The majority of research have noted a comparable incidence in both sexes.[24] Males may have had a higher prevalence of anxiety due to a variety of variables, including the higher expense for treatment, worries about the future and returning to work, and fear of disfigurement. The majority of the study's male participants were employed

and married, however differences based on marital status and place of employment were not investigated because they did not further the study's objectives.

The amount of total body surface area (TBSA) affected had no effect on the patients' level of depression, according to an analysis of the association between burn grade and depression. This was consistent with research results that had been published.[25] Similar findings applied to anxiousness. The research, on the other hand, indicated a strong correlation between the total body surface area implicated and the degree of anxiety.[12]

According to prior studies, there is a strong correlation between facial burns and depression severity, demonstrating that facial deformity increases the chance of developing post-burn melancholy.[17] Differences between our study and published studies regarding some of the findings could be attributed to different methodology and rating systems. The period following the burn assessment is also very important.

The statistically significant correlation between deep burns and anxiety, despair, and low self-esteem was another intriguing finding in this study. Full-thickness burns have been shown to have an impact on self-image. Patients who had full thickness burns covering more than 20% of their total body surface area worried more about their health and were more anxious.[21]

This might have been caused by the longer treatment time and more procedures they might have experienced, in addition to the higher treatment expenditures. The medications these patients were taking, including any painkillers, and the bandages they were wearing also had an impact, although these factors were not thoroughly examined in the study.

The sample used in the study may not be typical of the overall burns population because it was a single centre cross-sectional study. As there was no long-term

follow-up, the assessment of mental comorbidity may under-report the occurrence of psychiatric sequelae occurring later in the disease course. Studies may utilize different rating systems, which further muddies the findings. We also neglected to include a number of individual, societal, and environmental elements that might have influenced the patients' psychological issues.

Conclusion

Psychiatric issues are highly prevalent in burn victims. These patients may have a variety of psychological issues, including anxiety, low mood, low self-esteem, and trauma-related disorders. The degree of burns, the total body surface area affected, the location of the burns, and the depth of the burns are all factors in the emergence of psychiatric issues. Environmental and social variables may also contribute to the development of psychiatric consequences. The demands of burn survivors on a psychological level are little understood. Every burn patient must undergo routine screening for psychiatric morbidity, and every case must be examined by a psychiatrist at least once while they are inpatients. Equally crucial is educating the burns ward staff on the patient's psychosocial needs. To further understand the links and causes at the intersection of psychiatric issues in burn injuries, future research must concentrate on long-term studies in different population groups.

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