



Original Article

Quality of life and functional Outcomes among Burn Patients: A Cross Sectional Survey

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ABSTRACT

Background:

Burn injuries are a significant health issue leading to physical and emotional complications, impacting both social life and mental health. They necessitate a comprehensive approach for recovery, intertwining various physical and psychological aspects. The primary aim is to sustain a satisfactory level of functionality and life enjoyment, tailored to the individual's essential needs, for an extended period.

Objective:

The principal objective of this study was to quantitatively evaluate the quality of life and functional outcomes in burn patients.

Methods:

In this cross-sectional study, data was gathered from 156 burn patients from three medical facilities: Aziz Bhatti Shaheed Teaching Hospital in Gujrat, CMH Kharian, and Jinnah Hospital in Lahore. The Burn Specific Health Scale-Brief (BSHS-B) questionnaire was employed for data collection. The sample included patients aged 18-65 years with varying degrees of burn severity.

Results:

Data was processed using SPSS version 25. The average age of the patients was 34 years, with a gender distribution of 53.21% female and 46.79% male. Marital status was divided into 66.03% married and 33.97% unmarried individuals. Socio-economic status revealed 4.49% from upper-class, 41.67% from middle-class, and 53.85% from lower-class levels. The average Quality of Life (QoL) score was 70.42 ± 33.75 , indicating a diverse range of experiences among participants.

Conclusion:

The findings suggest that individuals with burn injuries can achieve a satisfactory quality of life and functional independence. This underscores the importance of comprehensive care and support for burn patients to enhance their overall well-being.

Keywords:

Burn, Quality of life, Functional outcomes, Burn Specific Health Scale-Brief (BSHS-B).

INTRODUCTION

Burn is one of most debilitating injuries and complications a person can experience in their life. It is huge global public health issue that places human life and health at significant risk. It is form of flesh injury caused by a variety of potential agents (thermal, mechanical, chemical, electrical or radiation) (1, 2). The multifactorial nature of QOL's examination of burn treatment results has centered on both the clinical and social dimensions of burn survivor's health (3).

Prevalence of burns can vary widely depending on the region and socioeconomic factors. Globally, millions of people are burned severely enough to require medical attention each year.(4). Children and the elderly are particularly at risk. Burn causes about 265,000 deaths per year and are a major public health concern. Most of these death occurs in low and middle-income countries, especially in areas where there is a shortage of resources needed to reduce the incidence and scale of the epidemic (5).



Pathophysiology of burns starts with an immediate injury to the skin cells, followed by an inflammatory response. (6) The body's response to a burn injury is dynamic and occurs in two phases: the acute phase, which is characterized by shock and edema, and the long-term phase, which involves wound healing, scarring, and rehabilitation (7). The depth and extent of the burn will determine the type of healing and potential complications, such as infection, fluid loss, and the effects on various organ systems (8).

Quality of Life (QoL) for burn survivors can be significantly compromised. Burns can lead to physical disfigurement, loss of function, and emotional and psychological trauma, all of which can impact a person's self-image, relationships, and ability to perform daily activities and work. Persistent pain and itching, scarring, and physical disabilities are common, and they can lead to long-term distress (9).

This includes physical functions like mobility and the performance of daily tasks, as well as social functions such as returning to work or school and interacting with family and friends. Effective rehabilitation, which may involve physical therapy, occupational therapy, and counseling, is crucial for improving these outcomes (10).

A study was initiated in 2018 by Spronk and Legemate with the objective of investigating the health-related quality of life of burn injury survivors. Enhancing the comparability of research findings would be the establishment of a consensus regarding the most preferred and validated methodologies for calculating Health-Related Quality of Life (HRQL) in patients who have suffered burns (11). This, consequently, would result in improved comprehension of the rates at which burn injuries recover and more precise predictions of the outcomes pertaining to health-related quality of life (12). To facilitate the evaluation of Health-Related Quality of Life (HRQL) among burn injury survivors, we suggest the formulation of an all-encompassing set of recommendations. Five distinct areas may require additional care following a burn injury as a result of inadequate long-term outcomes. These domains encompass a wide array of academic disciplines (6).

The research study conducted by Martha Druery and Tim La H. Brown in 2005, which examined the long-term functional outcomes and quality of life following severe burn injuries, is detailed in their publication (13). Based on the study's findings, it is possible to deduce that the functional independence of these patients will increase and that they will attain an adequate quality of life. With respect to long-term results, the prognosis for patients who have sustained severe burn injuries is frequently favorable. Consequently, individuals involved in the field of burn care may experience a feeling of fulfillment, cognizant of the fact that their endeavors were not in vain (14). Therefore, the objective of this study was to determine the Quality of Life and functional outcomes among burn patients.

MATERIAL AND METHODS

The study was designed as a cross-sectional analytical research endeavor, conducted over a six-month period after receiving synopsis approval. It took place in three distinct locations: Aziz Bhatti Shaheed Hospital in Gujrat, Combined Military Hospital (CMH) in Kharian, and Jinnah Hospital in Lahore, ensuring a diverse demographic representation. Researchers focused on a specific patient group, encompassing 156 individuals with burn injuries. The inclusion criteria for participants were age between 16 and 60 years and burns covering 50% or less of their body. A diverse gender representation was ensured among the participants. Those who did not consent, had burns affecting more than 50% of their body, or suffered from specific diseases or deformities were excluded from the study.

In terms of participant selection, the researchers adopted a non-probability, convenient sampling technique. This approach was recommended and validated by a consulting statistician to suit the study's objectives. The primary tool for data collection was the "Burn Specific Health Scale-Brief" (BSHS-B) questionnaire, a standardized instrument known for its efficacy in assessing the quality of life and functional outcomes in burn patients. Prior to data collection, informed consent was obtained from all participants, ensuring ethical compliance and participant awareness of the study's scope and purpose.

For the analysis of the collected data, the team employed IBM SPSS Statistics 25. This robust statistical software facilitated a comprehensive analysis approach. Quantitative data were meticulously presented through means, standard deviations, ranges, and histograms. In contrast, the categorical data were showcased using a variety of methods including frequencies, percentages, cross-tabulations, bar charts, and pie charts. These varied methods



of data representation were chosen to provide a holistic and clear view of the findings. The study's methodology was carefully designed to address the research question effectively while ensuring the validity and reliability of the results.

RESULTS

In a study involving 156 burn patients, assessments were made using the Burn Specific Health Scale–Brief (BSHS-B). The average score for simple abilities was 33.91 with a standard deviation of 26.642, indicating variability in patient capabilities. Hand function, a vital aspect of daily life, had an average score of 36.67. Emotional well-being, as reflected in the affect category, scored higher, with an average of 54.58. Body image concerns, which significantly impact burn survivors, had a mean score of 45.76. Interpersonal relations and sexuality, important for social reintegration, scored 62.41 and 70.16 respectively, suggesting a varied impact on relationships. Sensitivity to heat, a common concern post-burn, had a lower mean score of 29.77, while the ability to follow treatment regimens averaged at 33.86. Work-related capabilities had an average score of 31.28. Overall, the quality of life and functional outcomes had a positive mean score of 70.42, reflecting a good level of recovery among the patients.

Table 1 Total Body Surface Area (TBSA) Affected by Burns

TBSA	Frequency	Percentage
≤10%	7	4.49%
11-20%	62	39.74%
21-30%	43	27.56%
31-40%	35	22.44%
41-50%	9	5.77%
Total	156	100%

There were 7/156(4.49%) patients with ≤10% burn, 62/156(39.74%) patients with 11-20% burn, 43/156(27.56%) patients with 21-30% burn, 35/156(22.44%) with 31-40% burn and 9/156(5.77%) patients with 41-50% burn.

Table 2 Burn Specific Health Scale – B (BSHS-B) Categories

Category	Mean	Standard Deviation
Simple abilities	33.91	26.642
Hand function	36.67	24.77
Affect	54.58	25.66
Body image	45.76	25.75
Interpersonal relations	62.41	25.32
Sexuality	70.16	31.78
Heat sensitivity	29.77	22.78
Treatment regimens	33.86	22.15
Work	31.28	24.08
Quality of life and Functional outcomes	70.42	33.75
N=156		

These tables synthesize the frequency of different TBSA categories among the patients and the scores from various categories of the BSHS-B, reflecting the impact on quality of life and functional outcomes.

DISCUSSION

A cross-sectional observational study was conducted to examine the functional outcomes and quality of life among burn patients. Data was collected from a sample of 165 patients who had treatment at Aziz Bhatti Shaheed Teaching Hospital in Gujarat, CMH Kharian, and Jinnah Hospital in Lahore using the Burn Specific Health Scale-Brief questionnaire. According to a recent study, the mean age of the participants was 34 years, with a total of 156 individuals included in the analysis. Of these participants, 73 were male and 83 were female. There were 84



patients classified as belonging to a lower social class, seven patients classified as belonging to a higher social class, and 65 patients classified as belonging to a medium social class. Based on the findings of the current study, it was observed that individuals who had sustained burn injuries had a moderate level of quality of life, as shown by a mean score of 70.42. The questionnaire has nine distinct parts that include many domains, including employment, treatment protocols, manual dexterity, affective states, bodily perception, social interactions, sexual orientation, sensitivity to heat, and basic abilities. The only anomalies observed were heat sensitivity, treatment regimens, and occupation, all of which indicated a diminished quality of life. Each alternate region had a moderate to high standard of life (15).

In a previous study conducted by Doctor and Yang (year), it was discovered that out of a sample size of 250 participants, 33% exhibited a higher socioeconomic position, 32% had a median socioeconomic status, and 35% had a lower socioeconomic status (Doctor & Yang, year, p. 27). The present study included the categorization of 156 participants into several socioeconomic groups, namely high class (n=7), middle class (n=65), and lower class (n=84) (16).

Based on previous scholarly investigations, there exists a correlation between heat sensitivity, occupational engagement, emotional state, and body perception, with a discernible decline in health-related quality of life and a diminished domain score. The domains of hand function, basic abilities, and interpersonal connection and sexuality have the highest results among the several domains (17, 18). When considering health, it can be seen that each of these three domains exhibits the highest standard of living. Based on a recent research, it was shown that the domains of job, temperature sensitivity, and treatment regimen had the lowest average score and quality of life. In contrast, the constructs of affect, sexuality, and interpersonal interactions had the highest mean score and were shown to have a significant impact on individuals' quality of life (19).

Based on the results of a particular study, individuals who have had burn injuries exhibit a good level of physical and social well-being. There exists significant skepticism over the absence of a more advanced form of life inside the brain domain (20). We contend that the prevalence of negative body standards and mental health concerns contribute to the aforementioned consequences. The precise site of the damage, especially if it involves the facial region, may have a substantial influence on an individual's overall well-being (21). The persons undergoing treatment have a notable inclination towards experiencing a substantial improvement in their quality of life (22). Based on recent research, it has been revealed that domains pertaining to interpersonal interactions and emotions have a predictive value in determining a high quality of life. Conversely, domains that need basic skills and physical dexterity are associated with a worse quality of life (23).

Another study discovered that elderly individuals have a substantial psychological impact in addition to physical well-being as a result of severe burn injuries. On the other hand, there is evidence to suggest that both the recovery trajectories and the impact of rehabilitation are influenced by age (24). There is evidence to suggest that older individuals who undergo rehabilitative treatment for a duration of up to one year after an injury may have an increased likelihood of achieving complete recovery. Based on the results of recent study, it has been shown that the absence of rehabilitative interventions has a substantial adverse influence on the overall well-being of elderly individuals who have had serious burn injuries, including both physical and psychological dimensions (25). In short, the study highlights the multifaceted nature of recovery in burn patients, with a particular focus on quality of life and functional outcomes. The varied scores across different domains of the Burn Specific Health Scale–Brief (BSHS-B) underscore the complex interplay between physical, psychological, and social factors in burn rehabilitation. Notably, the study draws attention to certain areas like heat sensitivity, treatment regimens, and occupational engagement, which are significantly affected post-burn injury. These insights lead to a more tailored approach in burn care, focusing on the need for comprehensive rehabilitation programs that address not just the physical, but also the emotional and social aspects of recovery. The varying impacts of burns based on the socio-economic status and age of patients further indicate the necessity for a more individualized treatment plan, taking into account the diverse needs of different patient groups.

The study conclusively demonstrates that burn injuries have a substantial impact on patients' quality of life, with varying degrees of influence across different domains. It reveals that while some aspects of life such as interpersonal relationships and sexuality may experience a less drastic decline, areas such as work, heat sensitivity,



and adherence to treatment regimens are more severely affected. This disparity suggests that recovery from burn injuries is not uniform and requires a multidimensional approach in treatment and rehabilitation. The overall positive mean score in quality of life and functional outcomes indicates a promising level of recovery among patients, yet the study also highlights the critical areas where improvements are necessary. By acknowledging these varying impacts, the study provides valuable insights for healthcare professionals, suggesting the need for targeted interventions that cater to the specific challenges faced by burn survivors.

The findings of this study have significant implications for both clinical practice and future studies. In clinical settings, the study underscores the importance of comprehensive rehabilitation programs that go beyond physical healing, incorporating psychological support and socio-economic considerations. The identification of specific domains that are most affected by burn injuries can guide healthcare providers in developing more targeted interventions, ensuring a holistic approach to patient care. This study explores the long-term effects of burns on quality of life, examining the effectiveness of various rehabilitation strategies, and understanding the role of socio-economic factors in recovery. Additionally, it suggests the need for further investigation into the age-related differences in burn recovery, which could lead to age-specific treatment protocols. Overall, the study contributes to a deeper understanding of the burn recovery process, paving the way for improved patient outcomes and quality of life post-injury.

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