



(RESEARCH ARTICLE)



## Evaluation of anxiety, depression, and quality of life in severely burned patients

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### Abstract

**Background:** Burn injuries are complex medical emergencies that go beyond physical trauma to include significant psychological effects. This study aimed to assess the prevalence and factors linked to anxiety, depression, and quality of life (QoL) in severely burned patients treated at the Burn Unit of the Military Hospital Mohammed V, Rabat, Morocco.

**Methods:** A descriptive-analytical cross-sectional study was conducted from September 2022 to August 2025 with 80 adult patients who had major burns (>20% of total body surface area). The Hospital Anxiety and Depression Scale (HADS), the Patient Health Questionnaire (PHQ-9), and the WHOQOL-BREF were administered along with a sociodemographic and clinical survey. Statistical analysis was performed using JAMOVI software. Ethical approval and informed consent were obtained from all participants.

**Results:** The average age was 36 years (range 17–65), with a male majority (70%). Most patients were married (81%), of middle socioeconomic status (66%), and residing in urban areas (72%). Anxiety was found in 43% of cases, and depressive symptoms in 43.2%. According to PHQ-9, 56.8% had minimal depression, 30.9% mild, and 12.3% moderate to severe. Quality of life was notably reduced in the physical (58%), social (33%), and psychological (25%) domains. Depression showed significant correlations with marital status ( $p=0.021$ ), socioeconomic level ( $p=0.007$ ), and ICU stay ( $p=0.014$ ), while anxiety was associated with low income ( $p=0.034$ ) and urban residence ( $p=0.004$ ).

**Conclusion:** Psychological distress after burn trauma is highly common and strongly linked to decreased quality of life. Routine psychiatric screening and psychological support are crucial parts of burn care, highlighting the importance of multidisciplinary rehabilitation programs.

**Keywords:** Burn Injury; Anxiety; Depression; Quality of Life; Psychiatry; Morocco

### 1. Introduction

Severe burn injuries represent one of the most devastating forms of trauma, with profound implications for survival, physical function, and mental health. Advances in modern resuscitation and surgical techniques have significantly improved survival rates; however, these achievements have not fully mitigated the enduring psychological and social burdens experienced by survivors. The pain, prolonged hospitalization, and visible disfigurement often result in persistent anxiety, depression, and social isolation.

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The prevalence of psychiatric morbidity in burn patients has been reported to range from 20% to 60%, depending on the assessment tools and follow-up duration. Depression and anxiety are the most frequently encountered disorders, influencing pain perception, wound healing, and treatment adherence. Moreover, these psychiatric symptoms adversely affect reintegration into family, professional, and social life. Understanding the interaction between psychological distress and quality of life is thus essential to improve post-burn rehabilitation outcomes.

This study sought to evaluate the prevalence and determinants of anxiety, depression, and quality of life among severely burned patients in Morocco, a context where psychosocial support resources remain limited. Identifying the key factors influencing these dimensions could help integrate mental health care more effectively into multidisciplinary burn treatment programs.

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## 2. Materials and Methods

A descriptive and analytical cross-sectional study was conducted at the Department of Plastic, Reconstructive, and Burn Surgery of the Military Hospital Mohammed V in Rabat between September 2022 and August 2025. Eighty patients aged 17 to 65 years were included based on the following criteria: hospitalization for severe burns involving more than 20% of total body surface area, absence of prior psychiatric disorders, and consent to participate. Exclusion criteria included minor burns, pediatric age, death during hospitalization, or incomplete medical files.

Data collection was performed using structured interviews by trained psychiatrists. The survey included sociodemographic variables (age, sex, marital status, education, socioeconomic level, and residence), clinical variables (burn cause, severity, surgical interventions, ICU stay, and hospital duration), and psychometric measures. Anxiety and depression were assessed using the Hospital Anxiety and Depression Scale (HADS), while the PHQ-9 was used to quantify depressive symptom severity. The WHOQOL-BREF questionnaire evaluated quality of life across four domains: physical, psychological, social, and environmental.

Ethical approval was obtained from the institutional review board of the Faculty of Medicine, Mohammed V University. Informed consent was obtained from all patients, with respect to confidentiality and anonymity. Data were analyzed using JAMOVI software with descriptive statistics and chi-square tests for associations. A  $p$ -value  $<0.05$  was considered statistically significant.

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## 3. Results

The study population included 56 men (70%) and 24 women (30%), with a mean age of 36 years. Most patients were married (81%), lived in urban areas (72%), and belonged to a middle-income group (66%). Burns caused mainly by thermal injury, with 68.8% involving the face or hands and 47% having total body surface burns exceeding 20%. Nearly 85% underwent one or more surgical grafting procedures, and 69% were admitted to the ICU.

Psychiatric assessment showed that 43% of patients had clinically significant anxiety, and 43.2% exhibited depressive symptoms according to the HADS. The PHQ-9 indicated minimal depression in 56.8%, mild in 30.9%, and moderate to severe in 12.3%. Over 80% reported disturbances in sleep and appetite. Emotional irritability and episodes of anger affected about a third of the patients.

WHOQOL-BREF scores revealed that physical health was the most affected domain (58% altered), followed by social relations (33%), psychological health (25%), and environment (20%). Factors significantly linked to depression included marital status ( $p=0.021$ ), socioeconomic level ( $p=0.007$ ), and ICU stay ( $p=0.014$ ). Anxiety was associated with lower income ( $p=0.034$ ), urban living ( $p=0.004$ ), and extent of burn injury ( $p=0.015$ ). Longer hospital stays correlated with lower quality of life scores across all domains.

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## 4. Discussion

This study highlights a high rate of anxiety and depression among patients with severe burns, consistent with international studies. The prevalence rates (43% for both conditions) align with those reported by Perry et al. (2023), who found similar figures among long-term burn survivors. These findings support the idea that burn trauma can have a lasting psychological impact well beyond the initial healing period.

The emotional impact of burn injuries is influenced by multiple factors. Patients face ongoing pain, multiple surgeries, and visible disfigurement, which can affect body image and self-esteem. Loss of physical integrity often leads to identity

issues, social withdrawal, and fear of stigma. In Morocco, cultural values placed on appearance and community ties deepen these feelings, leading to ongoing psychological distress.

The link between low socioeconomic status and worsening mental health highlights the effects of financial stress and limited access to mental health services. Extended ICU stays and longer hospitalizations also predict depression, underscoring the role of environmental and procedural stressors in emotional outcomes. These findings echo those of Ding et al. (2024), who identified intensive care as a factor in post-traumatic stress and depression among burn survivors.

Quality of life, measured by WHOQOL-BREF, was notably reduced across all areas, especially in physical and social domains. Persistent pain, limited mobility, and aesthetic consequences impair physical functioning, while dependency and social role changes hinder relationships. Similar patterns are reported globally, indicating that recovery in quality of life often lags behind physical healing. Integrating mental health professionals into burn care teams is crucial for comprehensive rehabilitation.

Psychological treatments like cognitive-behavioral therapy, support groups, and family counseling have proven effective in reducing anxiety and depression after burns. Early screening with tools like HADS and PHQ-9 can identify high-risk patients who need targeted therapy. Addressing modifiable factors such as social reintegration programs and financial assistance can also enhance long-term psychological well-being.

Limitations of this study include its single-center design and moderate sample size, which may limit the broad applicability of the results. Nonetheless, it offers valuable insights into the mental health challenges faced by Moroccan burn patients and highlights the need to include psychiatric care in standard burn treatment protocols.

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## 5. Conclusion

Severe burns have significant psychological effects that greatly diminish the quality of life. Anxiety and depression are common in patients hospitalized for major burns at the Military Hospital Mohammed V, with strong connections to socioeconomic challenges, prolonged hospital stays, and surgical procedures. Mental health evaluations should be a routine part of burn care from admission through recovery. Creating multidisciplinary teams that include surgeons, psychiatrists, and psychologists is crucial. Future research should focus on long-term follow-up studies and interventions to assess the impact of early psychological support on recovery and social reintegration.

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## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The authors declare no conflict of interest.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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