

Original Research Article

Burned twice: the emotional toll of paediatric burns on caregivers

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ABSTRACT

Background: Paediatric burn injuries significantly impact both the patients and their caregivers, with caregivers shouldering immense psychological and emotional burdens. While extensive research exists on the clinical outcomes of paediatric burns, the long-term effects on caregiver mental health and quality of life (QoL) remain underexplored.

Methods: An observational study was conducted with 100 caregivers of paediatric burn patients treated at a tertiary burn care centre. Participants were assessed at day zero, three months, and six months post-injury. Burn severity and total body surface area (TBSA) affected were documented. Hospital anxiety and depression scale (HADS), Infant dermatitis QoL index (IDQOL) and children's dermatology life quality index (CDLQI) assessed the impact on caregiver and child QoL.

Results: At baseline, 52% of caregivers reported clinically significant anxiety and 47% reported depression. These levels decreased significantly by six months. QoL scores improved over time, with IDQOL scores decreasing from 17.5 ± 4.2 at baseline to 7.6 ± 3.2 at six months, and CDLQI scores declining from 18.3 ± 4.7 to 9.1 ± 3.8 . Burn severity, measured by TBSA, was positively correlated with caregiver anxiety ($r=0.62$, $p<0.01$), indicating greater psychological distress for caregivers of children with more extensive burns.

Conclusions: Caregivers of paediatric burn patients face significant psychological and QoL challenges. These findings underscore the need for early and sustained psychological interventions, tailored support for caregivers of children with severe burns, and holistic burn care approaches that address both the physical and emotional well-being of patients and their caregivers.

Keywords: Burns, Paediatrics, Anxiety, Caregiver, Depression

INTRODUCTION

Burn injuries in children are a major cause of morbidity, particularly in low- and middle-income countries. Paediatric burns require prolonged hospitalization, complex wound care, and extensive rehabilitation.¹ In the aftermath of a paediatric burn, caregivers become the primary providers of physical, emotional, and psychological support for the child.

As a result, they are exposed to immense stress, which can have lasting consequences on their QoL.²

While there is literature on the clinical outcomes of paediatric burn patients, less attention has been given to the psychological and emotional toll on caregivers.³ Caregivers often endure the stress of frequent hospital visits, painful dressing changes, and the psychological impact of seeing their child suffer from disfigurement and functional impairments.⁴

In some cases, caregivers may experience symptoms of post-traumatic stress disorder (PTSD) due to witnessing the initial injury and the subsequent treatment process.⁵

Previous studies have identified that psychological interventions aimed at reducing caregiver burden can improve emotional well-being and enhance QoL.⁶ However, there is limited research examining the long-term psychological impact on caregivers following a paediatric burn injury.

In this study, we seek to understand how caregiver anxiety, depression, and QoL evolve in the months following a paediatric burn injury. We aim to explore how their psychological status and QoL fluctuate over time, with a specific focus on the first six months following the injury.

METHODS

This study employed a longitudinal, observational design and was conducted in Department of Plastic Reconstructive and Burns Surgery in Bangalore Medical College and Research Institute from June 2024 to Jan 2025. Ethical approval was obtained from the institutional review board, and written informed consent was secured from all participants prior to their inclusion in the study.

Caregivers were assessed at three time points: Day zero, three months, and six months post-burn injury.

A total of 100 caregivers of paediatric burn patients were recruited for the study.

Inclusion criteria

Caregivers of paediatric burn patients aged 0-16 years who sustained second or third-degree burns covering 5% - 25% of the TBSA, willingness to participate in follow-up assessments at baseline, three months, and six months after the burn injury were included.

Exclusion criteria

Caregivers with pre-existing psychiatric disorders and caregivers who were unable or unwilling to complete the required questionnaires were excluded.



Figure 1: Ten-month-old child with scald burns.

The extent of TBSA affected was determined using the Lund-Browder chart. Three standardized tools were used to assess the psychological well-being and QoL of caregivers.

Hospital Anxiety and Depression Scale (HADS)

The HADS is a validated self-administered questionnaire comprising 14 items: 7 items assess anxiety (HADS-A), and 7 items assess depression (HADS-D). Each item is scored on a 4-point Likert scale, with a total possible score of 21 for each subscale. A score of 8 or higher on either subscale indicates clinically significant anxiety or depression.

Infant Dermatitis Quality of Life Index (IDQLI)

For caregivers of children under 5 years of age, the IDQOL was used. The IDQOL is a 10-item questionnaire that asks caregivers about how the child's skin condition affects various aspects of daily life, including sleep, emotional distress, and family activities. Each item is scored on a 4-point scale.

Children's Dermatology Life Quality Index (CDLQI)

For caregivers of children aged 5-16 years, the CDLQI was used. The CDLQI consists of 10 items that cover a variety of domains, including school performance, personal relationships, leisure activities, and emotional well-being. Each item is scored on a 4-point scale.



Figure 2: Child with burns being taken care by her mother.

At each assessment point (day zero, three months, and six months), caregivers were asked to complete the HADS, IDQOL and CDLQI.

On day zero, data was collected during the child's hospital admission, after the caregiver had been informed of the child's treatment plan and prognosis. This time point was selected to capture the acute psychological reaction to the burn injury.

At three-and six-month follow-up appointments, caregivers were invited back to the burn centre for reassessment.

Statistical analysis

All data were entered into a secured database and analysed using SPSS software. Descriptive statistics were used to summarize demographic characteristics, burn severity, and questionnaire scores.

To analyse the changes in caregiver psychological status and QoL, ANOVA test was conducted for the HADS-A, HADS-D, IDQOL, and CDLQI scores at baseline, three months, and six months. A $p < 0.05$ was considered statistically significant.



Figure 3: A child with 24% TBSA.

RESULTS

A total of 100 caregivers participated in the study, with a response rate of 100%. The majority of caregivers were mothers ($n=78$, 78%), fathers ($n=22$, 22%). The mean age of caregivers was 35 ± 7 years. The paediatric burn patients ranged in age from 1 month to 16 years (mean age = 6.2 ± 4.3 years). In terms of burn severity, 65% children suffered second-degree burns, 35% had third-degree burns. The mean TBSA affected by burns was $15 \pm 5\%$. Mode of burns was scald burns in 65 patients and thermal burns in 35 patients.

Table 1: Demographic details.

Variables	N
Caregivers	100
Mean age of caregivers (in years)	35 ± 7
Age of patients (in years)	1 month to 16
Mean age of patients (in years)	6.2 years
Mean TBSA	$15 \pm 5\%$

Anxiety (HADS-A) scores

Baseline (day zero)

At the time of the child's admission or first outpatient visit, 52% of caregivers ($n=52$) had clinically significant anxiety, with a mean HADS-A score of 10.3 ± 2.9 .

Three months

By the three-month follow-up, the percentage of caregivers with clinically significant anxiety dropped to 35% ($n=35$), with a mean HADS-A score of 7.6 ± 2.4 .

Six months

At the six-month follow-up, 20% of caregivers ($n=20$) still exhibited clinically significant anxiety, with a further reduced mean HADS-A score of 5.8 ± 2.1 .

There is a statistically significant reduction in anxiety scores over time. Shows significant differences between baseline and three months ($p < 0.001$) as well as between baseline and six months ($p < 0.001$), indicating that caregiver anxiety decreased steadily throughout the follow-up period.

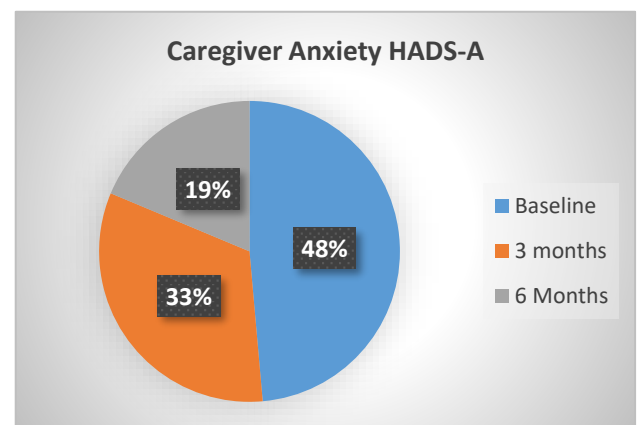


Figure 4: HADS-A score.

Depression (HADS-D) scores

Baseline (day zero)

At baseline, 47% of caregivers ($n=47$) showed clinically significant depression, with a mean HADS-D score of 9.8 ± 2.6 .

Three months

By 3-month follow-up, the proportion of caregivers with clinically significant depression had decreased to 30% (n=30), with a mean HADS-D score of 7.0 ± 2.5 .

Six months

At the six-month mark, 18% of caregivers (n=18) continued to experience significant depression, with a mean HADS-D score of 5.5 ± 1.9 .

There are significant improvements between baseline and three months ($p < 0.001$), and between baseline and six months ($p < 0.001$), showing a gradual recovery in caregivers' depression levels over time.

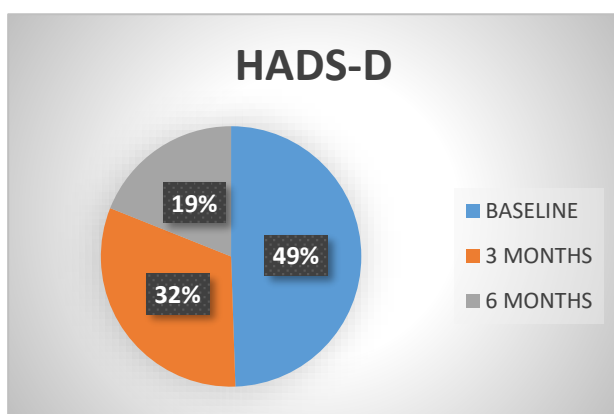


Figure 5: HADS-D score.

IDQOL, (n=40)

Baseline (day zero)

For caregivers of infants under 5 years, the mean IDQOL score was 17.5 ± 4.2 , indicating a substantial impact on QoL. The high scores reflected difficulties in daily routines, such as disrupted sleep, emotional distress, as well as the caregiving challenges related to the child's burn care.

Three months

By 3-month follow-up, mean IDQOL score had decreased to 12.1 ± 3.9 , reflecting a reduction in negative impact on caregivers' lives as child's recovery progressed and caregiving routines became more manageable.

Six months

At six months, mean IDQOL score was further reduced to 7.6 ± 3.2 , indicating continued improvement in caregiver QoL ($p < 0.001$). The high scores in first three months reflected difficulties in daily routines, such as disrupted sleep, emotional distress, and the caregiving challenges related to the child's burn care.

By the three-month follow-up, the mean IDQOL score had decreased reflecting a reduction in the negative impact on caregivers' lives and caregiving routines became more manageable.

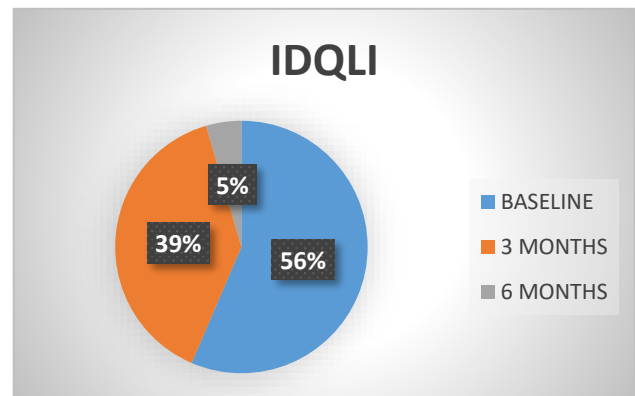


Figure 6: IDQOL score.

CDLQI, (n=60)

Baseline (day zero)

For caregivers of children aged 5-16 years, the mean CDLQI score at baseline was 18.3 ± 4.7 , suggesting a significant impact on the child's QoL, as reported by their caregivers. Children experienced difficulties in school, play, and social interactions due to effects of burn injury.

Three months

At 3-month follow-up, the mean CDLQI score had decreased to 13.2 ± 4.4 , reflecting improvement in child's condition and positive shift in their daily functioning.

Six months

By six months, the mean CDLQI score had further reduced to 9.1 ± 3.8 , indicating a substantial recovery in the child's QoL as reported by their caregivers ($p < 0.001$).

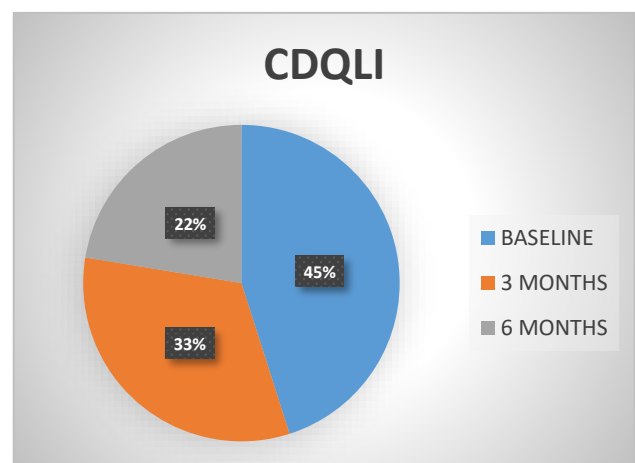


Figure 7: CDLQI score.

DISCUSSION

Research highlights the profound emotional toll associated with witnessing a child's pain and managing the uncertainty surrounding recovery outcomes. Parrish et al emphasized that caregivers frequently report high levels of anxiety and depression in the early stages, with symptoms often persisting beyond the acute recovery phase.⁷ Similarly, Woolard et al noted that caregiver distress is exacerbated by the sudden, traumatic nature of burn injuries and the extensive care demands involved in treatment and rehabilitation.⁸

The initial psychological burden can be attributed to several factors, including fear regarding the child's survival, uncertainty about long-term functional and cosmetic outcomes, financial concerns, disruption of family life, and the demands of prolonged hospitalization and repeated painful procedures.

Parrish et al found that caregivers of children with larger burns experienced heightened anxiety due to increased care demands, longer hospitalizations, and more complex treatment protocols.⁹ Hawkins et al suggested that depression may be associated with pre-existing mental health conditions, lack of social support, or financial pressures rather than burn severity alone.¹⁰ This distinction emphasizes the need for tailored psychological interventions addressing both immediate caregiving stressors and long-term psychosocial factors.

Studies have also examined the gradual improvement in QoL over time as the child recovers. During the early post-burn period, caregivers frequently reported sleep disturbances, emotional stress, disruption of family routines, and limitations in social and occupational activities. As wound healing progressed and the child's physical condition improved, caregivers gradually adapted to new routines, resulting in better quality of life. Woolard et al. reported that caregivers adapt to their roles as wound care routines become less demanding and the child regains physical functioning.¹¹

The age of the child has been identified as a critical factor influencing caregiver burden. Caregivers of younger children face greater challenges due to the higher physical and emotional dependency of younger patients. In contrast, caregivers of older children report slightly lower QoL impairment, as older children are often better able to participate in their own care and adapt to physical limitations more independently.

The present study demonstrates that caregivers of paediatric burn patients experience substantial psychological distress immediately following their child's injury, with anxiety and depression being particularly prominent during the acute phase. Although significant improvements were observed over the six-month follow-up period, a considerable proportion of caregivers continued to experience emotional difficulties,

highlighting that the psychological consequences of paediatric burns extend well beyond the initial hospitalization. These findings reinforce the concept that burn injuries affect not only the child but also the entire family, emphasizing the importance of adopting a family-centred approach to burn care.

CONCLUSION

Paediatric burn injuries significantly affect the psychological well-being and quality of life of caregivers. Although anxiety, depression, and distress improve over time, a substantial proportion of caregivers remain affected at six months. Greater burn severity is associated with increased caregiver anxiety.

Recommendations

Routine psychological screening of caregivers should be incorporated into paediatric burn care. Early counselling and stress-management interventions should be provided to caregivers at high risk of psychological distress. Caregiver education and peer-support programmes should be included as part of burn rehabilitation. Psychological follow-up should continue beyond the acute treatment phase, particularly for caregivers of children with extensive burns. A multidisciplinary, family-centred approach involving burn surgeons, nurses, psychologists, and rehabilitation professionals should be encouraged. Further research should evaluate structured psychological interventions to improve long-term caregiver well-being.

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REFERENCES

1. Jordan KC, Di Gennaro JL, von Saint André-von Arnim A, Stewart BT. Global trends in pediatric burn injuries and care capacity from the World Health Organization Global Burn Registry. *Front Pediatr.* 2022;10:954995.
2. Cioga E, Cruz D, Laranjeira C. Parental adjustment to a burn-injured child: how to support their needs in the aftermath of the injury. *Front Psychol.* 2024;15:1456671.
3. Cioga E, Cruz D, Laranjeira C. Parental adjustment to a burn-injured child: how to support their needs in the aftermath of the injury. *Front Psychol.* 2024;15:1456671.
4. Cioga E, Cruz D, Laranjeira C. Parental adjustment to a burn-injured child: how to support their needs in the aftermath of the injury. *Front Psychol.* 2024;15:1456671.
5. Cioga E, Cruz D, Laranjeira C. Parental adjustment to a burn-injured child: how to support their needs in

- the aftermath of the injury. *Front Psychol.* 2024;15:1456671.
6. Williams HM, Hunter K, Clapham K, Ryder C, Kimble R, Griffin B. Efficacy and cultural appropriateness of psychosocial interventions for paediatric burn patients and caregivers: a systematic review. *BMC Public Health.* 2020;20(1):284.
 7. Parrish C, Shields A, Morris A, George A, Reynolds E, Borden L, et al. Parent Distress Following Pediatric Burn Injuries. *J Burn Care Res.* 2019;40(1):79-84.
 8. Woolard A, Hill NTM, McQueen M, Martin L, Milroy H, Wood FM, et al. The psychological impact of paediatric burn injuries: a systematic review. *BMC Public Health.* 2021;21(1):2281.
 9. Parrish C, Shields A, Morris A, George A, Reynolds E, Borden L, et al. Parent Distress Following Pediatric Burn Injuries. *J Burn Care Res.* 2019;40(1):79-84.
 10. Hawkins L, Centifanti LCM, Holman N, Taylor P. Parental Adjustment following Pediatric Burn Injury: The Role of Guilt, Shame, and Self-Compassion. *J Pediatr Psychol.* 2019;44(2):229-37.
 11. Woolard A, Hill NTM, McQueen M, Martin L, Milroy H, Wood FM, et al. The psychological impact of paediatric burn injuries: a systematic review. *BMC Public Health.* 2021;21(1):2281.

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