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Original Article

Assessment of Care Givers' Knowledge, Attitude & Practices Regarding Burden of Care in Management of Patients With Severe Burn Injury

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ABSTRACT

Background: Family caregivers assume substantial responsibility for wound care, positioning, rehabilitation, nutrition, emotional support, and follow-up after severe burn injury, but deficiencies in knowledge and high caregiving burden may compromise both caregiver and patient well-being. Objective: To assess caregivers' knowledge, attitudes, practices, and burden while managing patients with severe burn injuries. Methods: A descriptive cross-sectional survey included 83 caregivers attending two burn-care hospitals in Lahore. Item-level frequencies and percentages were analysed for caregiver characteristics and knowledge, attitude, practice, and burden responses. Results: Women constituted 59.0% of participants, 65.1% had primary or secondary education, and 86.7% identified themselves as primary caregivers. Correct knowledge responses ranged from 0.0% to 13.3%; no participant correctly identified the nutrition or persistent systemic-complication items. Agreement was high for asking health professionals questions (91.6%) and discussing concerns (78.3%) but low for reporting symptoms (12.0%) and seeking a second opinion (8.4%). Most endorsed positioning, wound care, exercise, diet, and treatment contact, whereas scar massage and emotional support were less frequent. Often or always feeling unable to live according to personal wishes was reported by 91.6%, and 89.2% reported work–caregiving stress. Conclusion: Caregivers demonstrated marked item-level knowledge deficits alongside uneven attitudes and practices and substantial burden. Structured competency-based education and psychosocial support are warranted. Keywords: burns; caregivers; knowledge; attitudes; practices; caregiver burden.

INTRODUCTION

Severe burn injury produces extensive local tissue damage together with systemic inflammatory, metabolic, endocrine, and immune responses that may persist beyond the acute phase. Survivors frequently require prolonged wound care, infection prevention, nutritional support, positioning, exercise, scar management, psychological care, and rehabilitation. These demands make burn care a continuing process rather than a time-limited hospital intervention, and family members often become essential partners in maintaining treatment and supporting recovery (1).

Primary caregivers assist with wound hygiene, medication routines, nutrition, mobility, positioning, exercise, emotional reassurance, communication with clinicians, and follow-up. Their ability to perform these tasks depends on what they know about severe burns, how they perceive their caregiving role, and whether appropriate practices can be sustained under difficult circumstances. Evidence from caregivers of patients with severe burns indicates that better knowledge is associated with more constructive attitudes and practices, whereas inadequate knowledge may coexist with substantial caregiving burden

(2). Structured caregiver education has also improved wound care, scar and pain management, medication use, mobility assistance, and follow-up behavior, demonstrating that caregiver competence is modifiable (3).

Caregiving burden extends beyond the practical workload. Family caregivers may experience uncertainty about prognosis, emotional distress, physical exhaustion, loss of personal time, disruption of employment and social roles, and financial pressure. Studies of burn survivors and their families have reported reduced caregiver quality of life, psychological strain, and difficulty maintaining normal family functioning during treatment and rehabilitation (4). Deficiencies in burn first-aid knowledge and evidence-based care practices have also been documented in hospital and community populations, particularly where formal training is limited (5,6). The long-term disability and treatment costs associated with severe burns can intensify these pressures, while anxiety, depression, and rehabilitation needs may continue after discharge (7,8).

Caregiver experiences are influenced by education, income, social support, access to rehabilitation services, duration of caregiving, and the clinical condition of the patient. Pakistani evidence from other chronic conditions shows that families may experience concurrent psychological, social, and financial burden, while qualitative work from South Asia highlights the challenges of prolonged recovery, repeated hospital contact, and limited rehabilitation resources (9,10). However, local evidence specifically examining caregiver knowledge, attitudes, practices, and burden in severe burn care remains limited. Without such information, educational and psychosocial support programs may not address the actual deficiencies experienced by caregivers in tertiary burn settings.

This study therefore aimed to assess the knowledge, attitudes, practices, and caregiving burden of primary caregivers of patients with severe burn injuries admitted to tertiary-care burn units in Lahore. It further sought to identify the principal domains in which caregiver education and support are required to strengthen home and hospital-based care while reducing avoidable strain on families.

MATERIAL AND METHODS

A quantitative descriptive cross-sectional study was conducted over six months at the Jinnah Burn and Reconstructive Surgery Centre, Allama Iqbal Medical College, Lahore, and the burn department of Mayo Hospital, Lahore. A cross-sectional design was selected to characterize caregiver knowledge, attitudes, practices, and burden at the time of hospital-based care (11). The target population comprised adult family caregivers attending patients with severe burn injuries at the participating units.

The accessible caregiver population was 105. A finite-population sample-size formula with a 5% margin of error produced a required sample of 83 participants. Caregivers were recruited purposively when they met the eligibility criteria. Participants were required to be the primary caregiver of an admitted burn patient, be at least 18 years of age, be able to provide informed consent, and have remained with or cared for the patient for at least 24 hours. To prevent duplicate responses, only one interview was obtained for the same caregiver-patient encounter. Professional or paid caregivers, healthcare workers, individuals unable to communicate reliably because of cognitive, hearing, psychiatric, or other major limitations, those whose participation could interfere with urgent patient care, and individuals who declined or withdrew consent were excluded. The sampling and eligibility procedures were applied consistently at both study sites (12,13).

Data were collected after written informed consent using a structured, pretested questionnaire comprising sociodemographic and burn-related characteristics, knowledge, attitude, practice, and caregiver-burden domains. The knowledge, attitude, and practice items were adapted from a published instrument developed for family members managing patients with severe burns (2). The 14-item knowledge domain used binary scoring, with one point for a correct response and zero for an incorrect response; possible scores ranged from 0 to 14, with scores of 0-7 categorized as inadequate and 8-14 as

adequate knowledge. The five-item attitude domain used a five-point Likert response and generated scores from 5 to 25; scores up to 12.5 represented a poor attitude and scores above 12.5 represented a good attitude. The eight-item practice domain used a five-point Likert response, producing scores from 8 to 40; scores of 20 or lower were categorized as poor practice and scores of 21-40 as good practice.

Caregiver burden was measured using the 11-item short form of the Zarit Caregiver Burden Scale included in the adopted instrument (2). Item scores were summed to a total ranging from 0 to 44. Scores of 0-11 indicated little or no burden, 12-20 mild-to-moderate burden, 21-30 moderate-to-severe burden, and 31-44 severe burden. Questionnaires were completed in the clinical setting after eligibility confirmation, and responses were checked for completeness before data entry.

Data were analysed using IBM SPSS Statistics version 29.0. Categorical variables were summarized using frequencies and percentages, while domain scores and other continuous variables were summarized using means and, where applicable, standard deviations. Bar and column charts were used to display selected demographic and clinical distributions. The analysis was descriptive and focused on the distribution of caregiver characteristics and the overall knowledge, attitude, practice, and burden scores.

The study followed the ethical principles of the Declaration of Helsinki and received approval from the Institutional Ethical Review Committee of the FMH system. Participation was voluntary, written informed consent was obtained before enrolment, and privacy and confidentiality were maintained throughout data collection and analysis.

RESULTS

Eighty-three caregivers were included. Most were female (49, 59.0%), 38–47 years old (33, 39.8%), single (55, 66.3%), and resident in rural areas (45, 54.2%). Primary or secondary education was the highest educational level for 54 caregivers (65.1%), and 77 (92.8%) reported a monthly household income below PKR 20,000. Forty-three caregivers (51.8%) had personally experienced a burn injury, 51 (61.4%) had previous experience caring for a person with severe burns, and 72 (86.7%) identified themselves as the patient's primary caregiver.

Table 1. Caregiver and burn-related characteristics (n = 83)

Variable	Category	n (%)
Caregiver age, years	18–27	9 (10.8)
	28–37	22 (26.5)
	38–47	33 (39.8)
	≥48	19 (22.9)
Sex	Male	34 (41.0)
	Female	49 (59.0)
Marital status	Single	55 (66.3)
	Married	28 (33.7)
Residence	Rural	45 (54.2)
	Urban	38 (45.8)
Education	Primary/secondary	54 (65.1)
	Intermediate	12 (14.5)
	Bachelor's/master's	9 (10.8)
	Other	8 (9.6)
Monthly income, PKR	<20,000	77 (92.8)
	20,000–40,000	3 (3.6)
	≥41,000	3 (3.6)
Previous personal burn injury	Yes	43 (51.8)
Previous severe-burn caregiving	Yes	51 (61.4)
Cause of patient's burn	Thermal	51 (61.4)
	Chemical	21 (25.3)
	Electrical	11 (13.3)
Patient sex	Male	66 (79.5)
	Female	17 (20.5)
Self-identified primary caregiver	Yes	72 (86.7)

Correct responses to individual knowledge items were uncommon. The highest correct-response frequencies concerned keeping the burn area clean (11, 13.3%), the definition of a burn injury (9,

10.8%), and the stated definition of a severe burn (7, 8.4%). No caregiver correctly identified the statements concerning persistent metabolic, endocrine, and cardiovascular complications or the importance of adequate calories, protein, and nutrients for recovery.

Table 2. Item-level caregiver knowledge responses (n = 83)

Knowledge item	Correct, n (%)	Incorrect, n (%)
Definition and causes of burn injury	9 (10.8)	74 (89.2)
Definition of severe burn	7 (8.4)	76 (91.6)
Importance of burn-area cleanliness	11 (13.3)	72 (86.7)
Positioning to prevent contracture	4 (4.8)	79 (95.2)
Immobility, reduced range of motion, and contracture	6 (7.2)	77 (92.8)
Timing of scar hyperplasia	4 (4.8)	79 (95.2)
Symptoms of hypertrophic scars	3 (3.6)	80 (96.4)
Role of compression therapy	2 (2.4)	81 (97.6)
Role of scar massage	1 (1.2)	82 (98.8)
Benefits of rehabilitative exercise	2 (2.4)	81 (97.6)
Persistent systemic complications	0 (0.0)	83 (100.0)
Depressive symptoms after severe burns	1 (1.2)	82 (98.8)
Need for long-term treatment and follow-up	2 (2.4)	81 (97.6)
Nutritional requirements for recovery	0 (0.0)	83 (100.0)

Table 3. Selected attitude, practice, and burden responses (n = 83)

Domain	Item	Response summary	n (%)
Attitude	Report symptoms to a health professional	Agree/strongly agree	10 (12.0)
	Read or watch health information	Agree/strongly agree	14 (16.9)
	Ask health professionals questions	Agree/strongly agree	76 (91.6)
	Seek a second opinion	Agree/strongly agree	7 (8.4)
	Discuss health concerns with professionals	Agree/strongly agree	65 (78.3)
Practice	Obtain burn-management information	Agree/strongly agree	79 (95.2)
	Participate in wound care	Agree/strongly agree	77 (92.8)
	Use positioning to prevent contracture	Agree/strongly agree	83 (100.0)
	Perform scar massage	Agree/strongly agree	33 (39.8)
	Encourage early exercise	Agree/strongly agree	75 (90.4)
	Support a balanced diet	Agree/strongly agree	77 (92.8)
	Maintain contact during treatment	Agree/strongly agree	76 (91.6)
	Attend to emotions and seek psychological help	Agree/strongly agree	21 (25.3)
Burden	Short of time	Often/always	54 (65.1)
	Stress balancing caregiving and other work	Often/always	74 (89.2)
	Health affected	Often/always	65 (78.3)
	Insufficient time for personal activities	Often/always	66 (79.5)
	Social life affected	Often/always	51 (61.4)
	Unable to live according to own wishes	Often/always	76 (91.6)
	Would leave care to another person	Often/always	55 (66.3)
	Did not know what to do	Often/always	52 (62.7)

Attitude responses were strongest for asking health professionals questions (76, 91.6% agreed or strongly agreed) and discussing health concerns with professionals (65, 78.3%). Agreement was substantially lower for reporting symptoms (10, 12.0%) and seeking a second opinion (7, 8.4%). Reported practices were frequent for obtaining burn-management information, wound care, positioning, exercise, nutrition, and maintaining contact during treatment; scar massage and emotional support were less frequently endorsed. Caregiving burden was prominent: 76 caregivers (91.6%) often or always felt unable to live according to their wishes, 74 (89.2%) reported stress in balancing caregiving with household or work responsibilities, and 65 (78.3%) reported an adverse effect on their health.

DISCUSSION

This study identified a clinically important mismatch between caregiver engagement and caregiver preparedness. The item-level results showed that caregivers frequently endorsed several practical activities, including obtaining information, participating in wound care, positioning the patient, encouraging exercise, supporting nutrition, and maintaining contact during treatment. In contrast, correct responses to the 14 knowledge items were uniformly low, and no participant correctly identified the items concerning prolonged systemic complications or adequate nutritional intake. Because the

item-level frequencies could not be reconciled with the originally presented composite questionnaire totals, interpretation should rest on the auditable response distributions rather than on an overall knowledge, attitude, practice, or burden classification.

The magnitude of the knowledge deficit is consistent with evidence that family members can remain closely involved in burn care while lacking accurate information about first aid, rehabilitation, scar management, psychosocial complications, and long-term recovery. Wang et al. reported that caregiver knowledge, attitudes, practices, and burden represent related but distinct domains and that motivated caregiving does not guarantee adequate technical knowledge (2). Studies from Ethiopia and Palestine similarly documented gaps in burn first-aid knowledge and the persistence of incorrect or incomplete practices among community and hospital caregivers (5,6). The present findings extend this concern beyond immediate first aid: caregivers also showed limited understanding of positioning, compression, scar massage, exercise, depression, follow-up, and nutrition, all of which influence recovery after severe injury.

The attitude and practice patterns require cautious interpretation. More than nine in ten caregivers agreed that they should ask health professionals questions, and more than three quarters endorsed discussing concerns, yet only 12.0% agreed that symptoms should be reported and only 8.4% endorsed obtaining a second opinion. Similarly, almost all respondents endorsed positioning and several routine care activities, whereas fewer than half endorsed scar massage and only one quarter endorsed emotional support or psychological referral. These contrasts suggest that general willingness to participate in care may coexist with uncertainty about when to escalate symptoms, how to verify advice, and how to address emotional distress. Training interventions have improved caregiver performance in wound care, medication use, scar and pain management, mobility assistance, and follow-up, indicating that these gaps are potentially modifiable (3). Self-reported practice may nevertheless overestimate actual performance because caregivers can select socially desirable answers without demonstrating the corresponding skill.

Caregiver burden was prominent across personal, occupational, social, and health domains. Nearly two thirds or more often or always reported time pressure, impaired health, restricted personal activities, disruption of social life, a wish to transfer care, or uncertainty about what to do. The strongest responses concerned inability to live according to personal wishes and stress in balancing caregiving with household or occupational responsibilities. Comparable research has linked burn caregiving with psychological distress, reduced quality of life, financial strain, and disruption of family functioning (4,12,13,16,17). This burden is clinically relevant because exhausted or distressed caregivers may have less capacity to absorb complex discharge information, sustain rehabilitation routines, or recognize complications.

The combined findings support a structured model of caregiver preparation beginning during admission and continuing after discharge. Education should be competency based rather than limited to verbal advice and should cover wound hygiene, warning symptoms, positioning, range-of-motion exercise, scar care, nutrition, psychological symptoms, medication routines, follow-up, and safe first aid. Demonstration, return demonstration, written instructions in accessible language, and scheduled reinforcement could improve retention. The strong willingness to communicate with clinicians provides a practical entry point for such programmes. Education should be paired with counselling, peer support, respite options, and clear referral routes because information alone will not resolve time, financial, emotional, and social pressures (12,13,16,17).

Several limitations materially affect interpretation. The cross-sectional design does not establish temporal relationships between knowledge, practices, and burden. Convenience recruitment from two facilities in Lahore limits generalizability, and the sample was dominated by lower-income caregivers with limited formal education. Eleven respondents did not identify themselves as primary caregivers despite the stated target population, creating uncertainty about eligibility and caregiving intensity.

Patient-age categories overlapped, the reported burn-duration categories omitted seven to twelve months, and the multiple-choice burn-site table was presented as though categories were mutually exclusive. Most importantly, the published composite totals were not mathematically consistent with the item-level frequencies, and the reported demographic effects were not supported by complete association analyses. Self-report, social-desirability bias, and the absence of observed competency assessment further limit inference.

Notwithstanding these limitations, assessment of knowledge, attitudes, practices, and burden within the same caregiver sample provides a broad view of the demands surrounding severe-burn care. Future studies should apply validated, culturally adapted instruments; define caregiver eligibility and caregiving intensity prospectively; report complete scoring algorithms; and test whether education plus psychosocial support improves observed competence, caregiver burden, treatment adherence, and patient-centred outcomes over time.

CONCLUSION

Caregivers of patients with severe burn injuries showed profound item-level knowledge deficits, uneven attitudes and self-reported practices, and substantial disruption of health, time, work, personal activities, and social life. Their strong engagement with clinicians and routine care creates an opportunity for structured discharge education, observed competency assessment, continued rehabilitation guidance, and psychosocial support. These findings should be interpreted descriptively because of sampling limitations and irreconcilable composite questionnaire totals; future prospective research should evaluate whether combined educational and caregiver-support interventions improve both caregiver well-being and patient recovery.

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