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EFFECTS OF EDUCATIONAL INTERVENTION ON SELF CARE MANAGEMENT AMONG BURN PATIENTS

Sobia Zahra[*1], Attiya Sultana[2], Sumera Akhter[3], Amjad Ali[4]

[*1]*Instructor Govt School of Allied Health Sciences Bahawalpur Pakistan*
[2,3]*MSN Scholar University of Lahore, Pakistan*
[4]*Assistant Professor, Shalamar College of Nursing Lahore, Pakistan*

[*1]syedasobiazahra@gmail.com, [2]attiyazafar594@gmail.com, [3]sumeraakhter@gmail.com, [4]amjadkmu233@gmail.com

ABSTRACT

Background: *Burn injuries can be very dangerous and cause serious physical and emotional problems. People who are burned not only have to deal with their injuries but also with how they look after the burns. It's really tough for them. Especially if the burns are severe, they might feel really upset and suffer a lot, both in their body and mind. Having support from friends and family is super important to help them feel better about themselves. Family members should learn how to help, and the patients themselves need to take better care of their health. This study's results could be a helpful guide for others going through similar issues.*

Objective: *To investigate the effect of educational intervention on self care management among burn patients*

Method: *A quasi-experimental design was carried out at the Pak-Italian Modern Burn Center in Multan, involving 108 burn patients. Information was gathered using the Functional Assessment for Burns sheet. The collected data underwent analysis using methods like Chi-Square and paired t-tests, with significance indicated as $p<0.05$. The results were presented in the form of a frequency table.*

Result: *Most of the patients (60.2%) were men between 32 and 45 years old, living in cities (52.8%). About half of them were single (48.1%), and 56.6% had burns on their face that went down to their chest. Before the education, patients with burn injuries scored an average of 16.20+3.42 for self-care, but after the education, it went up to 32.13+5.41, and this change was very significant with a value of $p=0.000$.*

Conclusion: *This study revealed that teaching patients at the burn unit about taking care of themselves and coping with changes using exercises and rehabilitation methods was really helpful. By involving patients more in their own care, their ability to take care of themselves improved a lot. This made a big difference in how well burn patients managed their own care.*

Keyword: *Educational Intervention, Self-Care Management, Burn Patients*

INTRODUCTION

Burns are really terrible accidents that cause both serious physical injuries and emotional pain to the person affected (1). Every year, around the world, there are 2.4 million cases of burn injuries. This leads to 650,000 patients needing medical care, 75,000 of them being hospitalized, and 8,000 to 12,000 losing their lives. In the United States, burns are a major cause of death, causing 3,240 fatalities and 40,000 hospital stays annually (2).

Most of the deaths caused by fires (90%) happen in countries that don't have a lot of money. In these places, the poorest people are at higher risk of getting hurt or killed in fires (Yon et al., 2019). Many people in South Asian countries get hurt from burns a lot. In India, it's estimated that there are between 100,000 to 2,000,000 burn injuries every year, and about 50,000 of those result in death (3). Burn-related injuries result in 10,000 injuries and 100 fatalities in Sri Lanka each year, costing US$1 million (4). Burns are the 11th major cause of premature death and the second main cause of disability in Pakistan (5). About 7.1 cause suffer from million injuries, approximately 18 million lost years of life due to disability, and more than 265,000 deaths worldwide each year, accounting for 1% of the global burden of illnesses (6). Burns can cause a number of health problems, including loss of body mass, skin tone changes, deformities caused by scar contractures, and loss of body mass (7).. In addition to limiting a patient's ability to resume former activities, noticeable burn scars might make it difficult for them to interact with others, which can make them feel alone (8). The majority of burns (burns 112; 44.8%) were caused by burns. Water was the most frequent cause of burns in the subcategory of burns, accounting for 55 (22%) (9). Burn patients face many challenges. Short-term and long-term recovery from severe burns can be extremely distressing to patients with devastating physical and psychological consequences. Therefore, special care should be taken. A multidisciplinary team of surgeons, nurses, physiotherapists, occupational therapists, social workers, microbiologists, and psychologists is involved in care (10).

A person suffering from a burn injury risks losing their health as well as their physical, financial, social, mental, and emotional well-being (11). Being an essential element of the healthcare team, nurses play a significant role in patient care, self-care education, rehabilitation, and greater self-care management of the burn patients (12). Education about patient self-care promotes the growth of healthcare initiatives and lowers the likelihood of relapse and the frequency of outpatient visits (13). The burn survivors discussed a number of factors that aided their posttraumatic development. (14). Almost all burn survivors placed a high value on becoming useful and resourceful. Everyone who has returned to work has stated that their lives have significantly improved since their burn injury, which improves quality of life and gives survivors a sense of accomplishment (15). Burns are not only a serious illness with potentially fatal complications, but also a serious traumatic event with high potential for complications. Additionally, burn patients must adapt to a new body image. The burden of these incidents is high for individual patients, families, communities, and healthcare providers. Working with such patients requires encouraging medical professionals, doctors, and nurses to come to terms with their lifestyle and normal circumstances. Furthermore, the findings of this study may aid in the development of counteractive counselling approaches and processes for health care practitioners working with burn victims. Such findings are also valuable for people with persistent burn injuries who require rehabilitation treatments.

Material and Methods:

The chosen research design for this study was a quasi-experimental approach. The study was conducted at the Pak-Italian Modern Burn Center in Multan and included 108 burn patients. A purposive sampling technique was utilized to select participants. The study included both male and female patients between the ages of 18 to 60 years who had suffered recent burn injuries lasting less than a month. The patients needed to be conscious and capable of communication. Additionally, patients with 1st and 2nd degree burns covering less than 10% of their body, non-infected burns, and burns on visible parts like the face, head, neck, and hands were included. Patients with 3rd and 4th-degree burns, those with psychiatric disorders, and those with burns on areas like the abdomen, back, groin, and legs that aren't easily visible were excluded. The study focused on assessing self-care management, which includes activities such as eating, washing, toileting, moving, dressing, walking, and climbing stairs. Patients were ranked based on their ability to perform these activities independently or with minimal assistance. The Burn Functional Rating (FAB) system was used, assigning scores ranging from fully dependent to independent completion of activities. The highest achievable score was 35, with self-care management categorized as follows: scores below 18 were considered low self-care management, scores between 18 and 26.25 were categorized as moderate self-care management, and scores exceeding 26.25 indicated high self-care management. To ensure the

reliability and validity of the study tools, the Cronbach's alpha coefficient was computed, yielding a value above 0.7. The content validity index was 0.86 for the Rosenberg questionnaire and 0.89 for the functional health sheet. An educational intervention's impact on burn patients' self-care management was assessed using a questionnaire. The sample size of 108 patients was based on those meeting inclusion criteria and agreeing to participate. Participants were divided into nine groups of 12 patients each. Sessions were conducted over four days per week, lasting an hour each, for a total of eight sessions. These sessions took place over 4.5 to 5 months. After discharge, patients maintained communication through platforms like WhatsApp or home visits to ensure continuity of care and program implementation. The collected data were analyzed using SPSS version 21.0. Descriptive statistics, including percentages and frequency distribution tables, were used. The differences between pre- and post-intervention data were assessed using dependent paired t-tests. Categorical variables were analyzed using the chi-square test. If the data were not normally distributed, the non-parametric Wilcoxon Rank test was employed. Results were presented using means, standard deviations, numbers, and percentages. A significance level of $p < 0.05$ was used to determine statistical significance.

Results

Table 1: Demographic Variable of the Burn patients

Demographic Variables		Frequency(n)	Percent (%)
Age in year	18-31	38	35.3
	32-45	40	37.0
	46-60	30	27.7
Sex	Male	65	60.2
	Female	43	39.8
Residence	Urban	57	52.8
	Rural	51	47.2
Marital status	Single	45	41.7
	Married	52	48.1
	Widow	2	1.9
	Divorce	9	8.3
Education Level	Illiterate	30	27.8
	Literate	21	19.4
	Primary	23	21.3
	Secondary	16	14.8
	High school	18	16.7
Occupation	Work	74	68.5
	Not work	20	18.5
	House wife	14	13.0
Income	Enough	68	63.0
	Not Enough	40	37.0

Analyzed by frequency (n) and percentage (%) CI: 95%, d: 5%

According to the findings majority of the patients were males (60.2%), aged 32 to 45, lived in cities (52.8%), were single on the basis of marital status (48.1%), were illiterate (27.8%), and worked (68.5%), as shown in table 1.

Table 2: Patents Burn injury Information

		Frequency (n)	Percent (%)
Place of burn	In house	72	66.7
	Out the house	36	33.3
Type of burn	First degree	67	62.0
	Second degree	41	38.0
Cause of burn	Flam	43	39.8
	Hot Fluid	25	23.1
	Chemical	21	19.4

	Electrical	13	12.0
	Other specific	6	5.6
Site of burn	Face	61	56.5
	Head	19	17.6
	Neck	14	13.0
	Hand	14	13.0
\Extent of burn to other part	Chest	56	51.9
	Abdomen	21	19.4
	Back	16	14.8
	Groin	10	9.3
	Legs	2	1.9
	other specific	3	2.8

Analyzed by frequency (n) and percentage (%) CI:95%, d:5%

Table 2 illustrates that a significant portion of patients experienced burn injuries at home, accounting for 66.7% of cases. Among these cases, first-degree burns were prevalent 62% of the time. The primary cause of burn injuries was open flames, constituting 39.8% of instances. In terms of the location of burns, the majority (56.5%) occurred in various areas. Particularly noteworthy, burns extended from the face to the chest in 51.9% of cases.

Table 3: The effect of educational intervention on self-Care of burn patients

	Pre-Intervention			Post-Intervention			
Self-Care Management	n	%	Mean	n	%	Mean	P-Value
Low <18	74	68.5		0	0		
Moderate =18-26.25	34	31.5	16.20	14	13	32.13	0.000
High >26.25	0	0		94	87		

Analyzed by paired T test with P<0.05

Before the intervention, 74 patients (68.5%) exhibited low self-care scores (<18), while 34 patients (31.5%) had moderate scores (18-26.25), and none scored higher than 25.25. Post-intervention, the distribution changed to 14 patients (13%) with moderate scores and 94 patients (87%) achieving high scores (>26.25) for self-care. The initial mean score was 16.20, which significantly rose to 32.13 after intervention (p=0.000). This indicates a substantial enhancement in patients' self-care management due to the intervention, as evident in Table 3.

Table 4: self-Care of burn patients of the patient before and after intervention

Adherence of Self care	Pre-Intervention			Post-Intervention		P-Value
	Mean	SD		Mean	SD	
Bath Independently?	2.17	1.219		3.60	0.937	0.000
Dressing by Yourself?	2.18	1.214		3.52	0.952	0.028
Getting in and out of a chair?	1.47	0.618		3.58	0.968	0.004
Signing You name?	2.23	1.220		3.58	0.968	0.001
Eating with Utensils?	1.35	0.480		3.58	0.968	0.000
Tying Shoelaces / Bows etc?	1.50	0.663		3.60	0.937	0.023
Picking up coins from a flat Surface?	2.31	1.18		3.49	0.815	0.058
Unlocking a Door?	1.40	0.563		3.58	0.939	0.034
Working in your job performing your Duties?	1.59	0.798		3.59	0.948	0.000

Analyzed by paired T test with P<0.05

According to table 4 post-intervention, the study group demonstrated improved adherence to self-care tasks, indicated by statistically significant p-values: Bathing Independently (p=0.000), dressing themselves independently (p=0.028), moving a chair unassisted (p=0.004), signing independently (p=0.001), using eating utensils (p=0.000), tying shoelaces and bows without aid (p=0.023), and unlocking doors unassisted (p=0.034). However, no significant impact was observed regarding the ability to pick up coins from a flat surface (p=0.058). Notably, a significant mean difference emerged in all sub-category questions before and after intervention, signifying improvement ($p<0.05$). This underscores that before intervention, patients faced challenges in tasks such as independent bathing, dressing, chair movement, signing, utensil use, tying laces, and door unlocking.

Table 5: The association of demographic variable with self-care of the burn patients

Demographic Variables		Self-Care		
		Low <18	Moderate 18-26.25	P-Value
Age in year	18-31	23	11	0.952
	32-45	27	13	
	46-60	24	10	
Sex	Male	46	19	0.536
	Female	28	15	
Site of burn	Face	38	23	0.429
	Head	15	4	
	Neck	10	4	
	Hand	11	3	

Analyzed by chi-square test with a significance<0.05

This analysis basically indicated that there was no significant relationship between the patients' age and self-care p is equal to (0.952). Those in young age and old age reported having a poorer or lower self- care. Similarly, no difference on the base of gender (0.536). In terms of burn site, those with facial, head, neck and hand burn have a same lower self-care with a no statistical significance (0.429). It means that the there was no significant correlation between the age, gender and site of burn with self-care with $p>0.05$ as shown in the table no 5.

Discussions:

Burns represent one of the most tragic experiences for individuals. After a patient's burns have reduced to less than 20% of their total body surface and they regain some self-sufficiency, the rehabilitation phase commences as the third stage of treatment. It becomes crucial to engage the patient in devising a daily care plan encompassing factors such as dietary preferences, treatment schedules, rest intervals, therapy, and social interaction. This research primarily aims to evaluate the impact of an educational intervention on the management of self-care in individuals recovering from burns. The study's outcomes reveal that the majority of participants (60.2%) were male, falling within the age range of 32 to 45 years. A significant portion of these individuals resided in urban areas (52.8%). In terms of marital status, nearly half of the patients (48.1%) were single. Furthermore, a notable percentage of participants (27.8%) had not received formal education, while a majority (68.5%) were employed. The majority of burn incidents occurred within the confines of the home (66.7%), involving first-degree burns (62%). The predominant cause of these injuries was open flames (39.8%). Regarding the affected area, a majority (56.6%) experienced burns on various parts, with the most common site being the face extending to the chest (51.9%). These results are supported by the research of Faisal and Mehrabi, which found that 53% of the men studied, with 30% falling in the age range of 36 to 45. Looking at education, 95% were married, 38% didn't have a job, and 64% finished their high school studies. Additionally, 64% of the injuries were linked to work in industries. (16), Mehrabi, Falakdami (17). However,

the research conducted by Abd Elalem and colleagues revealed a different picture. The majority of patients in their study were female, originating from rural areas (58.8%), and had an average age of 40 years. More than one third of the patients (41.2%) had completed their secondary education, and half of them were married. Half of the patients were either homemakers or unemployed. About 44.1% of the patients suffered burns from flames, while a significant majority (73.5%) experienced burns at home. A notable percentage (58.8%) had burns on areas other than the face. Burns spanning 10% to 20% of their body were observed in over half of the patients (61.8%) (2).

Intervention helps burn injury patients manage their own care better according to our study finding; because, prior to the intervention, about 68.5% of patients had low self-care, 31.5% had moderate self-care, and no one had high self-care. However, following the education intervention, no one reported having low self-care, followed by 13% who had moderate self-care, and 87% had high self-care. Similarly, a study by Rizk and Hassan in 2018 revealed that after receiving multimedia health education, patients in the experimental group demonstrated notably significant differences in different aspects of the burn-specific health scale results when compared to the control group. This reflects a substantial difference between the two groups, with a high level of significance ($P < 0.05$) (18).

In our study after intervention patients adhered to self-care requirements such like they able to take bath without any support and help from other individual, they dress up independently, were able to drag a chair, able to sign, eat independently, tied shoelaces and bows without assistance and were able to unlock a door without assistance. However the study participants were not able to pick up the coins from a flat surface in those with a limb extension.

Likewise, as shown in a study conducted by Mamashli in 2019, the intervention led to an enhancement in patients' physical abilities afterward. This improvement also boosted their self-confidence in tasks such as bathing, dressing, self-care, and receiving treatment for their burns. (8). The research carried out by Keshavarz and his team demonstrated that burn patients positively embraced self-care nursing. The self-care interventions enabled patients to actively engage in their own care (19). According to the study by Dolatabed in 2021, the average total self-care score was lower before the intervention compared to the average score after the intervention (4). Furthermore, based on Shahid and his colleagues' discoveries, burns are recognized as enduring conditions that bring about substantial physical, psychological, and societal effects, which can greatly impact self-esteem, self-care, and overall life quality. These effects encompass changes in appearance, limitations in abilities, challenges in fulfilling work and family duties, as well as a range of physical, psychological, and social outcomes. Additionally, the study highlights that burn victims' diminished quality of life leads to decreased independence and heightened reliance on others (9).

Moreover, the results from Eller and his team's investigation in 2018 demonstrated that the educational intervention positively impacted various aspects such as adaptability, decision-making, stress reduction, and overall self-care scale ($p=0.001$) (20). Magbool and colleagues also emphasized that enhancing self-care practices could lead to an improved quality of life. A marked and significant statistical difference was observed in patients' quality of life and body image after receiving self-care education. Therefore, it's advisable to develop educational manuals tailored for burned patients, accessible within burn units, to support their improved quality of life (13).

Ultimately, consider the investigation regarding the impact of educational interventions on burn patients' self-care. It's important to highlight that education proves highly effective for patients dealing with ongoing illnesses. Educational interventions are not only simpler and more cost-effective but also more accessible to patients who willingly seek information that aligns with their specific needs. These interventions can be utilized repeatedly until patients achieve the required level of understanding without requiring external help, ensuring their learning needs are met swiftly and easily.

Conclusion:

The study's findings indicated that most of the participants were men aged between 32 and 45, residing in urban areas. Around half of the patients were unmarried, lacked formal education, and were employed. A significant number sustained burn injuries at home, primarily as first-degree burns caused by flames. The

affected area often extended from the face down to the chest. The intervention significantly enhanced burn patients' self-care, with moderate self-care at 31.5% prior to intervention, rising to 87% achieving high self-care afterwards. This study demonstrated the effectiveness of educational intervention within the burn unit, encompassing aspects like diet, medication use, pain management, wound care, temperature adjustments, exercise, self-image adaptation, coping strategies, and overall resilience enhancement. By fostering active patient engagement, burn patients' self-care remarkably improved. To enhance quality of life, it's recommended that burn departments provide a dedicated instructional booklet for home care, featuring illustrations and images.

REFERENCES

1. Jeschke MG, van Baar ME, Choudhry MA, Chung KK, Gibran NS, Logsetty S. Burn injury. Nature reviews Disease primers. 2020;6(1):11.
2. Abd Elalem SM, Shehata O, Shattla SI. The effect of self-care nursing intervention model on self-esteem and quality of life among burn patients. Clin Nurs Stud. 2018;6(2):79-90.
3. Banerjee S, Shumba C. A systematic review of epidemiological patterns and proposed interventions to address pediatric burns in Nigeria. African health sciences. 2020;20(2):991-9.
4. Dolatabad FR, Hashemi F, Yektatalab S, Ayaz M, Zare N, Mansouri P. Effect of Orem Self-Care Program on Self-Efficacy of Burn Patients Referred to Ghotb-Al-Din-E-Shirazi Burn Center, Shiraz, Iran. International Journal of Medical Investigation. 2021;10(2):135-46.
5. Bajwa MS, Sohail M, Ali H, Nazir U, Bashir MM. Predicting Thermal Injury Patient Outcomes in a Tertiary-Care Burn Center, Pakistan. Journal of Surgical Research. 2022;279:575-85.
6. Bailey ME, Sagiraju HKR, Mashreky SR, Alamgir H. Epidemiology and outcomes of burn injuries at a tertiary burn care center in Bangladesh. Burns : journal of the International Society for Burn Injuries. 2019;45(4):957-63.
7. Al-Byti AM, Chakmakchy SA, Waheeb AA, Alazzawy MA. Study of Isolated Bacteria from Burn Wound of Patients Attended Plastic Surgery and Burns Unit. Indian Journal of Forensic Medicine & Toxicology. 2019;13(4):1462-6.
8. Mamashli L, Ardebili FM, Bozorgnejad M, Ghezeljeh TN, Manafi F. The effect of self-care compact disk-based instruction program on physical performance and quality of life of patients with burn at-dismissal. World journal of plastic surgery. 2019;8(1):25.
9. Shahid F, Ismail M, Khan S. Assessment of quality of life in post burn survivors: a cross-sectional single-center first validation study from Pakistan. Burns open. 2018;2(1):35-42.
10. Barrett LW, Fear VS, Waithman JC, Wood FM, Fear MW. Understanding acute burn injury as a chronic disease. Burns & Trauma. 2019;7(1):23.
11. Bozorg-Nejad M, Azizkhani H, Mohaddes Ardebili F, Mousavi SK, Manafi F, Hosseini AF. The Effect of Rhythmic Breathing on Pain of Dressing Change in Patients with Burns Referred to Ayatollah Mousavi Hospital. World J Plast Surg. 2018;7(1):51-7.
12. Rezaei M, Jalali R, Heydarikhayat N, Salari N. Effect of telenursing and face-to-face training techniques on quality of life in burn patients: a clinical trial. Archives of physical medicine and rehabilitation. 2020;101(4):667-73.
13. Magbool FR, Ali GAE-N, Hussein AH. Effect of Self Care Education on Quality of Life and Body Image among Burned Patients. Assiut Scientific Nursing Journal. 2021;9(24):208-17.
14. Habib Z, Saddul R, Kamran F. Perceptions and experiences of female burn survivors with facial disfigurement. Chinese Journal of Traumatology. 2021;24(01):53-6.
15. Rasset P, Mange J, Montalan B, Stutterheim SE. Towards a better understanding of the social stigma of facial difference. Body Image. 2022;43:450-62.
16. Faisal A, Amjad A, Zehra N. Impact of facial burn injury on self esteem of burn patients: a hospital based study from Karachi. Journal of the Dow University of Health Sciences (JDUHS). 2016;10(1):25-30.
17. Mehrabi A, Falakdami A, Mollaei A, Takasi P, Vajargah PG, Jafari H, et al. A systematic review of self-esteem and related factors among burns patients. Annals of Medicine and Surgery. 2022:104811.

18. Rizk SMA, Hassan BGAE. The Effect of Pre-Discharge Multimedia Self-Care Education on Burn Specific Health among Patients with Burn. American Journal of Nursing. 2018;6(6):608-15.
19. Keshavarz M, Javanmardi F, Mohammdi AA. A decade epidemiological study of pediatric burns in south west of Iran. World journal of plastic surgery. 2020;9(1):67.