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Effect of an Educational Program on Self-efficacy and Body Image among Patients with Burn

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Abstract:
Background: Burn is the fourth most common type of trauma around the world, however it remains the leading source of fatalities and permanent disabilities. It is considered a major health complication of body image dissatisfaction and low self-efficacy. **Aim of the study:** to evaluate the effect of an educational program on self-efficacy and body image among patients with burn. **Research Design:** A pre/posttest quasi experimental design was used. **Subjects**: A purposive sample of 90 patients with burn. **Setting:** This study was conducted at outpatient burn clinics in Hahia Central Hospital, Egypt. **Tools of data collection:** Patient Interviewing Questionnaire, General Self-Efficacy Scale, and Body Image Scale. **Results:** The study results showed that about two-thirds of participating patients their burn caused by hot liquids, more than two-thirds of them had superficial and deep burn, the majority of them had hand burn, and less than half of them had burn in 10% of Total Body Surface Area, and they had second and third degree of burn. There was a statistically significant improvement in patients' self-efficacy regarding nutrition, physical activity, and treatment after the educational program, with a statistically significant difference (P<0.001), and there was a statistically significant improvement in patient's body image after the educational program compared to before program (P<0.001). **Conclusion:** It can be concluded that the educational program had a positive result in enhancing patient's self-efficacy and body image. **Recommendations**: A teaching brochure for burn patients to enhance self-efficacy and body image should be accessible in burn units.

Keywords: Body Image, Burn, Educational Program, & Self-efficacy.

Introduction:
A burn is an injury to the skin or other tissue organs caused by heat or friction, radiation, chemicals, electricity, or radioactivity **(Opriessnig, et al., 2023)**. According to the World Health Organization (WHO), burns are a global public health risk issue, accounting for an estimated 120.000-180.000 deaths each year. The majority of burn deaths occur in low- and middle-income populations, with an estimated two-thirds occurring in Southeast Asia regions and Africa **(Jacobs, et al., 2021)**. Major burns are common causes of morbidity, including prolonged hospital stays, disability, and disfigurement, often resulting in stigma and rejection by the public **(Seow, et al., 2020)**.

Self-efficacy is defined as a person's judgment of their ability to plan and carry out the sequence of actions required to achieve predefined performance categories. It is more concerned with estimating what one can achieve with the talents one presently possesses than it is with the skills one currently possesses. **(Kuang, et al., 2021)**. In other terms self-efficacy is a positive feeling that people generally look for chances to show "self-efficacious behavior" **(De Lorenzo, et al., 2021)**.

Self-efficacy is a significant component of identity. It may be more forceful than other aspects such as self-concept and self-esteem, because it decides action or inaction more than others. It also affects how much work they put into handling obstacles and their ability in the aspect of hardship. Furthermore, it affects the levels of anxiety and stress that person experience when performing tasks **(Ozamiz-Etxebarria, et al., 2020)**.

Self-efficacy is an essential factor that determines people's behaviors, actions, and functions in their social lives. It is also associated with life fulfillment, which is closely related to quality of life **(Mortada, et al., 2020)**. It is regarded as a significant variable because it plays an important role in the adaptation to illness. Furthermore, self-efficacy enables persons to use their abilities while facing obstacles to accomplishment. Additionally, perceived self-efficacy is an essential factor in effectively acting and applying the essential abilities for achievement **(Peters, et al., 2019)**.

A person's body image is made up of all of their past attitudes and insights into their own body, as well as their self-conscious and unconscious attitudes toward it. It also includes how they feel about their functions, appearance, and physical capabilities. It refers to people's thoughts, feelings, and opinions regarding the way their bodies look. **(Kumar, 2021)**. The persons' feelings about their bodies and appearances have essential inferences for the assessment and handling of the patients as a total, and the importance

of persons' feelings towards their appearances and bodies is highlighted in the care and handling of those patients **(Seyedoshohadae, et al., 2019)**.

Body image encompasses several elements. These elements are categorized as insights (how the person imagines the size and shape of his/her body), attitudes (what the person thinks about his or her body emotionally and cognitively and how closely his or her body resembles the ideal body image), and behaviors (restricted or overeating, dieting, and exercising). These three elements play an important role in the body image improvement of an individual **(Saylan & Soyyigit, 2022).**

Patients who receive educational programs are better equipped to manage their performance and have greater control over their daily lives. However, in educational programs, patients will instruct and obtain adequate knowledge and abilities that help in decision- making and resolving related problems **(Ouyang, et al., 2020 & De Figueiredo, et al., 2020)**.

Burn care nurses specialize in the care of patients who suffer from burn injuries and other types of trauma. Burn care nurses treat and monitor burn injuries and play a crucial role in the evaluation of emotional and mental trauma that often accompanies burn injuries **(Abd Elalem, et al., 2018)**. Optimal care of patients with burns necessitates a unique multi-disciplinary approach. Optimistic patient results are reliant on the composition of the burn care team and close cooperation among its participants. At the center of this team is the burn nurse, the coordinator of all patient care actions **(Mohammed et al., 2021**).

Significance of the study:

Burn injuries denote an important illness load for global residents **(Murray, 2020)**. It accounts for up to eighteen percent of permanent incapacities in Bangladesh, Colombia, Egypt, and Pakistan. In Addition, deformities cause important emotional and physical distress, which further ostracizes burn survivors. Moreover, burn injuries impose heavy healthcare budgets; by one estimation, the lifetime well-being costs of a serious burn are five times those of either HIV or stroke (**Price, et al., 2021)**.

Burns are the fourth most common type of trauma around the world, and their related damages are still the most important cause of mortality and incapacity worldwide causing bodily, mental, and financial damage in various societies; consequently, it is considered one of the major health problems of body image dissatisfaction and low self-efficacy **(Khadem-Rezaiyan, et al., 2020).** The statistical and medical records department at specialized central of burn in Hahia hospital, Sharkia government revealed that the number of patients who diagnosed with burn injury was increased about 200 patients in the following three years 2020, 2021, 2022. Therefore, the current study was conducted to evaluate the effect of an educational program on self-efficacy and body image among patients with burn.

Aim of the study:

This study aimed to evaluate the effect of an educational program on self- efficacy and body image among patients with burn.

Objectives:

- Assess self-efficacy and body image in patients with burn.
- Design, implement, and evaluate the effect of an educational program on self-efficacy and body image in patients with burn

Research Hypotheses:

H1: Self-efficacy will improve after the educational program than before.

H2: Body image will improve after the educational program than before.

Research design:

Pre⁄ post-test quasi- experimental design was used in this study. A quasi-experimental design is a beneficial instrument in conditions where actual experiments cannot be used for ethical or applied reasons, because it uses a non-randomized technique to assign subjects to groups **(Thomas, 2020).**

Setting:

The study was conducted at outpatient burn clinics in Hahia Central Hospital, Egypt, which composed of two rooms: an examination room, a dressing room containing one bed for examination, a water pool, and wound care equipment.

Subjects:

A purposive sample of 90 patients with burn in the pre-test and the same sample in the post-test was as follows:

Inclusion criteria: Male and female sex, adult patients 20-60 years old, second degree of burn extent 15%-25% of TBSA, less than ten percent for 3rd degree, patients after 48 hours from burn injury, and able to communicate in the study.

Patients with inhalation injury, chronic illness, or associated trauma were excluded.

The sample was randomly selected. The sample size was calculated using a power and sample size estimate program to provide a power of 80% at a confidence level of 95%. The sample size was valued using the following formula:

$$n = \frac{N \cdot Z^2 \cdot p \cdot (1-p)}{(N-1) \cdot e^2 + Z^2 \cdot p \cdot (1-p)}$$

Tools for Data Collection:

Tool (I): Patient Interviewing Questionnaire: Adopted from **(Utsunomiya, et al., 2020),** modified by the researchers, included the following two parts:

Part (1): Demographic characteristics of studied patients: Six items about age, gender, education, job, residence, and marital status.

Part (2): Burn characteristics of studied patients: included eight items about dressing duration cause of burn, depth of burn, burn site in the body, burn percentage (Total Body Surface Area) (TBSA), degree of burn, burn motives, and place of burn.

Tool (II): General Self-Efficacy Scale (GSE): is a self-report measure of self-efficacy. It was adopted by **Van Diemen (2020)** and consisted of 13 items divided into the following three parts:

Part (1): Self-efficacy regarding nutrition consisted of five items regarding a health dietary plan, best foods for promoting wound healing, and adherence to a healthy diet most of the time.

Part (2): Self-efficacy regarding physical activity included four items regarding ideal body weight, sufficient physical activity such as walking, and avoidance of smoking.

Part (3): Self-efficacy regarding treatment included four items regarding wound care, taking medication regularly, and follow- up to monitor wound healing.

Scoring System:

Scale points four Scored as; 1= Not at all true, 2= Hardly true, 3= moderately true, 4= exactly true, Total converted to percent as; Low (< 60%), Fair (60%-≤75%), High (≥75%)

Tool (III): Body Image Scale:

It was developed by **Al Sulaimi, Hutaglung, & Bin Syed Ali (2022),** and consisted of 27 items, divided into two measurements; the person's perception of his body, which is positive or negative, and the person's awareness of his body through other opinions such as family, friends, and classmates.

Scoring System:

Each positive item has 3 responses: (3) for "Yes", (2) for "Sometimes" and (1) for "Not". While in negative items they reversed in scoring (1) for "Yes", (2) for "Sometimes" and (3) for "Not". The whole score was designed by adding all declarations, which ranged from 27 to 81. The value of that medium was calculated to measure the body image is 67, so the higher scores of 67 indicate a positive body image and a real and clear perception of the body's image and satisfaction. The lower scores indicate a negative body image and the wrong person's perception of his body image and dissatisfaction.

Content Validity and Reliability:

Content validity was used to modify the tools and the educational program to conclude whether the tools covered the study's goal. It was evaluated by five experts: three nursing staff and two medical staff members. It was found that Cronbach's alpha reliability coefficient was "0.88, 0.89 and 0.87" respectively for "Patients interviewing questionnaire, general self-efficacy scale, and body image scale.

Field Work:

The study lasted six months, from the beginning of April 2023 to the end of September 2023.

Assessment phase:

Once the tools were completed and relevant formal approvals were obtained, the researchers started to recruit members according to the eligibility criteria. They started by introducing themselves, giving the patients a brief explanation of the study objective, and inviting them to participate. Every patient met separately and verbal consent for contribution was obtained. The researchers clarified the tool items to the patients and then asked them to complete the questionnaire. The time necessary to answer all questions and measures ranged from 20 to 25 minutes.

Planning phase: Based on the outcomes obtained from the assessment phase and given of related literature, the researchers designed the educational sessions. The aims and contents were based on patients' requests, which were covered in an Arabic booklet. The booklet contained two main parts.

First, the theoretical part included basic information about burns, skin anatomy, skin function, definition, causes, classifications and degrees of burn and symptoms for each degree, factors affecting the risk of burn, complications, prevention, and effects of burn on physical and psychological health. Determining weaknesses and strengths of body image/finding self. Moreover, it included the definition of self-efficacy, types, dimensions, sources of self-efficacy, and measuring self-efficacy. However, it included the definition of body image, types, components, dimensions, the effect of body image on mental health, and factors affecting body image.

Second, Practical part about estimation of the Total Body Surface Area (TBSA) of burn, degree of burn, first-aid measures for each degree, wound care of burn, and prevention of wound infection. In addition to improving self-efficacy, coping mechanisms included techniques such as spirituality, coping with physical problems, physiotherapy for burn contractures, body image coping, and social support. Psychological immunity that protects the individual from developing a negative body image and how to improve body image which includes cognitive behavioral therapy, and body image education: activating (what special event, condition, thought or sentiment moves you?); beliefs (What opinions, insights and alterations come to your mind?); consequences (How do you respond emotionally? How do you respond behaviorally?) and removal of distress through regular desensitization.

Implementation phase:
The program was actualized in the form of sessions. Fifteen sessions, each session, possessed of a title and aim. The length of each session was characteristic according to the patients' integration of content, which differed in accordance with their educational level, response, time availability, and content of each session. Time of theoretical session was 30-35 minutes and practical session 35-40 minutes. To provide education and support, a lecture and discussion method was used as the teaching method. At the termination of the session, the Arabic booklet was distributed for further remembering, enhancement of knowledge, and understanding of burn.

Evaluation phase: The post-test was conducted immediately after the educational program by comparing self-efficacy and body image scores using the same tools as the pre-test.

Pilot study:
Nine patients (10% of the study sample) were randomly selected in a pilot study to check the accuracy and understanding of the items as existing and to estimate the required time to fill in the tools. The data obtained were included in this study because there were no modifications required.

Administrative design:
Before conducting the study, formal approval from the Research Ethics Committee of the Faculty of Nursing and General Director of Hahia Central Hospital was obtained Prior to conducting the study. Meetings and discussions were held between the researcher and the nursing directorial workers to make them alert about the goals and objectives of the study, as well as, to get better collaboration during the implementation phase the study, also patients' approvals were obtained before beginning data collection. The responses of directorial workers were very helpful of the study.

Ethical consideration:
During the interview, each patient was knowledgeable about the purpose and welfare of the study, that their involvement was voluntary, and that they had the right to withdraw from the study at any time without any cause. Furthermore, the privacy and anonymity of the subjects were confident through the coding of all data. No harm was expected from study implementation; conversely, the educational program had a positive effect on body image, reflected in the improvement of patient's self-efficacy.

Statistical analysis:
The collected data were coded, calculated, and statistically analyzed using SPSS version 22. Qualitative data was presented as frequency and percentage using Chi square (χ^2) for comparison of variables and Fisher's exact test (FET). Quantitative data was presented as mean ± SD, Paired t-test was used to compare the means of quantitative variables. Differences were considered statistically significant at $P \leq 0.05$ and highly statistically significant at $P \leq 0.01$. Pearson's correlation test (r) was used to test the correlations between the studied variables.

Results:

Table (1): Demographic Characteristics of the Studied Patients (n = 90)

Demographic Characteristics	Items	n.	%
Age (years)	<50	75	83.3
	≥ 50	15	16.7
Mean ± SD= 32.83 ± 12.96			
Gender	Males	42	46.7
	Females	48	53.3
Residence	Rural	27	30.0
	Urban	63	70.0
Education	Educated	75	83.3
	Not educated	15	16.7
Job	Working	51	56.7
	Not working	39	43.3
Marital Status	Married	78	86.7
	Not married	12	13.3

Table (2): Burn Characteristics of the Studied Patients (n =90)

Burn Characteristics	Items	n.	%
Dressing duration	15 min	69	76.7
	20 min	21	23.3
	Mean ± SD= 16.16 ± 2.12		
Cause of burn	Flame	27	30.0
	Hot liquids	54	60.0
	Electric	6	6.7
	Chemical	3	3.3
Depth of burn	Superficial	9	10.0
	Superficial & deep	63	70.0
	Deep	18	20.0
Burn site	One site	21	33.3
	More than one site	69	76.7
	Face	24	26.7
	Neck	3	3.3
	Chest	24	26.7
	Abdomen	6	6.7
	Hand	72	80.0
	Upper limb	30	33.3
	Thigh	3	3.3
	Lower Limb	9	10.0
Burn percentage (TBSA)	10	39	43.3
	15	36	40.0
	20	3	3.3
	25	12	13.3
Degree of burn	First	6	6.7
	Second	39	43.3
	First + Second	6	6.7
	Third	39	43.3
Burn motives	Accident	72	80.0
	Suicidal	0	0.0
	Fire	18	20.0
Place	Home	75	83.3
	At workplace	15	16.7

Table (3): Average Score of Patients' Self-Efficacy Before and After Educational Program (n =90)

Self-efficacy	Before	After	Significance test
	Mean ± SD	Mean ± SD	
Nutrition	6.17 ± 0.79	16.83 ± 0.37	t=143.9, P<0.001
Physical activity	5.06 ± 0.85	13.33 ± 0.47	t=109.2, P<0.001
Treatment	5.01 ± 0.53	14.17 ± 0.37	t=161.3, P<0.001
Total Self efficacy score	16.23 ± 1.32	44.33 ± 0.47	t=437.5, P<0.001

P ≤ 0.05 (significant)

Table (4): Frequency and Mean Scores of Patients' Body Image Before and After Educational Program (n = 90)

Body Image	Before				After				Significance test
	Negative		Positive		Negative		Positive		
	n.	%	n.	%	n.	%	n.	%	
	90	100.0	0	0.0	60	66.7	30	33.3	t=61.586, P<0.001
Mean ± SD	35.50 ± 2.71				70.33 ± 2.94				

P ≤ 0.05 (significant)

Table (5): Relation between Patients' Self-Efficacy, Body Image, and Demographic Characteristics Before Educational Program (n = 90)

Demographic Characteristics	Items	n.	General Self-efficacy	Body Image
			Mean ± SD	Mean ± SD
Age (years)	<50	75	49.15±3.89	106.60±7.15
	≥50	15	16.53 ± 1.24	35.40 ± 2.32
Significance test			F=5.325, P0.002	F=0.026, P0.994
Gender	Males	42	16.21 ± 1.33	36.43 ± 2.44
	Females	48	16.25 ± 1.26	34.69 ± 2.69
Significance test			t=0.128, P0.891	t=3.197, P0.002
Residence	Rural	27	16.37 ± 1.33	36.67 ± 2.25
	Urban	63	16.17 ± 1.31	35.00 ± 2.75
Significance test			t=0.792, P0.521	t=2.775, P0.007
Education	Educated	75	16.29 ± 1.32	35.80 ± 2.51
	Not educated	15	15.93 ± 1.28	34.00 ± 3.21
Significance test			t=0.967, P0.326	t=2.413, P0.018
Job	Working	51	16.33 ± 1.35	36.35 ± 2.37
	Not working	39	16.10 ± 1.27	34.038± 2.74
Significance test			t=0.823, P0.413	t=3.646, P<0.001
Marital Status	Married	78	16.29 ± 1.31	35.27 ± 2.67
	Not married	12	15.83 ± 1.34	37.00 ± 2.56
Significance test			t=1.133, P0.260	t=2.101, P0.039

P ≤ 0.05 (significant)

Table (6): Relation between Patients' Self-Efficacy, Body Image, and Demographic Characteristics After Educational Program (n = 90)

Demographic Characteristics	Items	n.	General Self-efficacy	Body Image
			Mean ± SD	Mean ± SD
Age (years)	<50	75	133.31±1.44	213.55±8.11
	≥50	15	44.40 ± 0.51	69.40 ± 2.32
Significance test			F=2.533, P0.062	F=3.375, P0.022
Gender	Males	42	44.21 ± 0.41	69.64 ± 2.85
	Females	48	44.44 ± 0.50	70.94 ± 2.91
Significance test			t=2.281, P0.025	t=2.124, P0.036
Residence	Rural	27	44.33 ± 0.48	69.78 ± 3.14
	Urban	63	44.33 ± 0.47	70.57 ± 2.84
Significance test			t=0.000, P 1.000	t=1.176, P0.243
Education	Educated	75	44.36 ± 0.48	70.20 ± 2.83
	Not educated	15	44.20 ± 0.41	71.00 ± 3.46
Significance test			t=1.196, P0.235	t=0.961, P0.339
Job	Working	51	44.23 ± 0.43	70.18 ± 2.78
	Not working	39	44.46 ± 0.51	70.54 ± 3.17
Significance test			t=2.297, P0.024	t=0.576, P 0.566
Marital Status	Married	78	44.35 ± 0.48	70.42 ± 2.87
	Not married	12	44.25 ± 0.45	69.75 ± 3.41
Significance test			t=0.652, P0.516	t=0.736, P0.465

P ≤ 0.05 (significant)

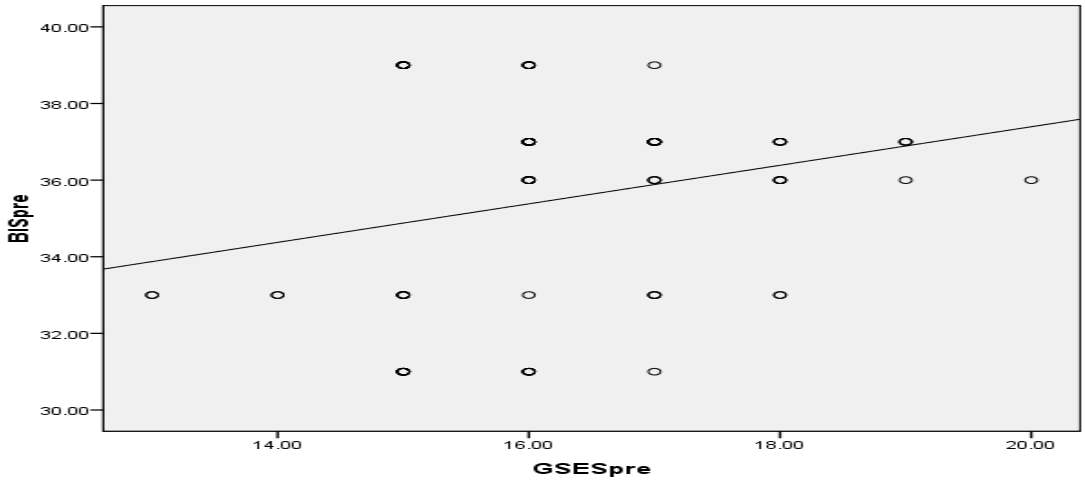

Figure (1): Correlation between Patients' Self-Efficacy and Body Image Before Educational Program (n = 90)

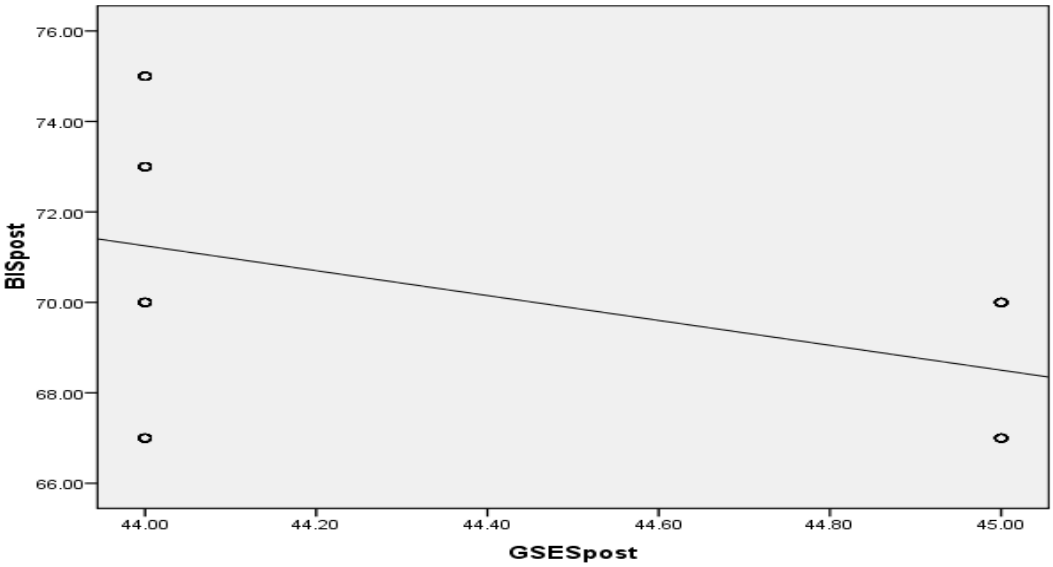

Figure (2): Correlation between Patients' Self-efficacy and Body Image After Educational Program (n = 90)

Table (1): Reveals that 83.3% of the studied patients were educated, and their age was less than 50 years old, with a mean ± SD of 32.83 ± 12.96 years. Also, 53.3% of the studied patients were female, 70.0% of them were urban, 83.3% were educated, 86.7% of them were married, and 56.7% of patients were workers.

Table (2): Displays that 76.7% of studied patients had the burn at more than one site and had a dressing duration of 15 minutes with a mean ± SD of 16.16 ± 2.12; also, 60.0% of studied patients their burn was due to hot liquids, and 70.0% of them had superficial and deep burn. Also, 80.0% of them had hand burn, followed by upper limb burn (33%), and 80% of patients had an accident as a burn motive. Concerning burn percentage (TBSA), 43.3% of patients had burn in 10% of their total body surface area and they had second and third degree burn, and 83.3% of burn occurred at home.

Table (3): Reveals that there was a statistically significant improvement in the patient's self-efficacy regarding nutrition, physical activity, and treatment after the educational program compared to before, with a statistically significant difference between before and after the educational program ($P<0.001$).

Table (4): Denotes that there was a statistical improvement in the patient's body image after the educational program compared to before, with a

statistically significant difference between before and after the educational program (P<0.001), as 66.7% of the studied patients had a negative body image and 33.3% of them had a positive body image after the program.

Table (5): Clarifies that there was a statistically significant relation between patients' self-efficacy and age before the program. Also, there was a statistically significant relation between patients' body image and sex, residence, and job before the educational program.

Table (6): Illustrates that there was a statistically significant relation between patients' self-efficacy and age, sex and job after the educational program. Also, there was a statistically significant relation between patients' body image and age after the educational program.

Figure (1): clarifies that there was a mild, significant positive correlation between patients' self-efficacy and body image before the educational program (r = 0.244, P 0.020).

Figure (2): Identifies that there was a mild, significant negative correlation between the patient's self- efficacy and body image after the educational program (r = -0.443, P<0.001).

Discussion:

Concerning demographic characteristics, the majority of the studied patients were educated, and married, and their age was less than 50 years old, with a mean score more than thirty years. More than half of the patients were female workers. This means that age, occupation, and socio-economic circumstances influence the incidence of burn injuries. Moreover, females have more contact with fire at home than males.

These study findings were consistent with those of **Seyedoshohadaee, et al., (2019),** who found that the mean age of subjects was 37.3±9.6 years. Similarly, **Ho, et al., (2022)** mentioned that the ages of respondents ranged from 15 to 65 years old. On the same line, **Tehranineshat, et al., (2020)** illustrated that about two-thirds of participants were women and married. In the same way, **Faisal, et al., (2015)** stated that the majority of burned patients were female. Also, **Magbool, et al., (2021)** showed that the most of patients were employed, and about three-quarters of them were married. Also, **Mortada, et al., (2020)** revealed that half of the respondents had a bachelor's degree.

Concerning residence, more than two-thirds of the studied patients were urban. This might be due to the absence of suitable prevention and teaching programs in the pre-hospital phase. Moreover, burn injuries are most common in low development countries because of older buildings, inferior safety standards, the lack of smoke detectors, and defective electricity, among others. This result was in agreement with **Yousef, El Magrabi, & Mohamed (2018),** who found that less than half of burn patients were urban. Consistent with **Tehranineshat, et al., (2020),** who revealed that more than two third of subjects were urban.

Regarding burn characteristics, more than three-fourths of studied patients had a dressing duration of 15 minutes and had burn at more than one site, and nearly the majority of studied patients had hand burn followed by upper limb burn. This might be due to the fact that the most body parts involved in performing the tasks were the extremities. About two-thirds of the studied patients their burn caused by hot liquids, and more than two-thirds of them had superficial and deep burn.

These study findings were supported by **Phuyal, et al., (2020),** who stated that scalds were the most frequent cause of injury and that most burns were in the limbs. In congruence with **Yousef, El Magrabi, & Mohamed (2018),** who revealed that about three-fourths of the burn injuries were in the face and hands, and hot liquids were the cause of burn injuries among two-thirds of the subjects. Similarly, **Rhman, et al., (2017)** illustrated that three quarters of patients had burns in the extremities. Moreover, **Magbool, et al., (2021)** found that the most common reasons for burn harm were flames and boiling liquids.

Related to burn percentage (TBSA), the results of the current study illustrated that less than half of the studied patients had burn in 10% of their whole body surface area and also had second and third degree burn. These study findings were similar to that done by **Alemayehu**, **et al., (2020),** who reported that burn extent was less than 10% of TBSA in more than half of patients and the majority of them had partial thickness or a second-degree burn. In the same way, **Suluhan (2023)** illustrated that the total body surface area of the burn was determined to be 1%–10% in less than two third of study subjects. Conversely, **Tehranineshat, et al., (2020)** revealed that only less than one six of participants had 15–30% of TBSA.

Study findings revealed that the majority of burns occurred at home, and the majority of burn was an accident as a burn motive. This might be due to careless handling of gas tubes without security features. Also, the cause could be that most burn victims' households might not be well equipped in terms of first aid equipment to enable the management of suggested initial care. This result was in agreement with **Phuyal, et al., (2020),** who found that the injury was most likely to occur at home.

As regards self-efficacy, the findings of the current study presented that there was a statistically significant improvement in the patient's self-efficacy regarding nutrition, physical activity, and treatment

after the educational program compared to before, with a statistically significant difference between before and after the educational program. Self-efficacy helps patients successfully adapt to the restrictions caused by their disorder and also manage their physical activities more effectively. In addition, self-efficacious persons are healthier, more successful, and tend to expend more energy towards a goal and be more insistent in the face of complications and negative experiences than people with low self-efficacy. Moreover, designing and implementing the educational program improves the burn patients' confidence in doing activities and, as a consequence, promotes their self-efficacy.

On the same line as **Abo El-Ata & Berma (2016),** who found that nearly half of the patients had higher self-efficacy, while less than one-third of the patients had a low. In accordance with **Dolatabad, et al., (2021),** who clarified that the mean of all measurements of self-efficacy significantly enhanced after the interference, in the control group, the alterations in the overall mean and mean of all measurements of self-efficacy, both in the pre-and post-intervention phases, were not statistically significant.

Concerning body image, the present study findings discovered that there was a statistically significant improvement in patients' body image after the educational program compared to before, with a statistically significant difference between before and after the educational program. This may be due to the positive outcome of the educational program on body image improvement among the studied patients.

This study result was similar to the result of a study done by **Seyedoshohadaee, et al., (2019),** who illustrated that there was a significant variance between the mean scores of body image before and after educational programs. Similarly, **Ozdemir & Saritas (2019)** found that there was a statistically significant improvement in body image in the trial group. In the same way, **Ghahremani, et al., (2018)** stated that the mean score for body image concern lessened in both groups during the study period, but the observed alteration was more significant in the intervention group. Also, **Magbool, et al., (2021)** revealed a statistically significant variance in patients' body image pre and post the program.

The results of the current study revealed that there was a statistically significant relation between patients' self-efficacy and age before the educational program. Also, there was a statistically significant relation between patients' body image and sex, residence, and job before the educational program. Also, there was a statistically significant relationship between patients' self-efficacy and age, sex, and job after the educational program. Also, there was a statistically significant relation between patients' body image and age after the educational program. This may be due to the fear of negative effects of body image disturbances and bullying, which is higher among female burn patients than males. Moreover, self-efficacy and body image are affected by the age of adult burn patients.

These study findings were supported by **Tehranineshat, et al., (2020),** who reported that there was a significant positive correlation between the patients' resilience and self-efficacy. Similarly, **Abo El-Ata & Berma (2016)** illustrated that a statistically significant relation was found between self-efficacy and patients' age. In the same way, **Yousef, El Magrabi, & Mohamed (2018)** mentioned that there was a positive correlation between body image and the age of patients. Inconsistent with **Kurian et al. (2019),** who indicated that sex and learning played an important role in body image. In agreement with **Willemse, et al., (2021),** who stated that the female gender was indirectly associated with body image dissatisfaction.

The study findings clarified that there was a mild, significant positive correlation between patients' self-efficacy and body image before the educational Program. Also, there was a mild, significant negative correlation between patients' self-efficacy and their body image after the educational program. This means that the bodily change subsequent to a burn injury is followed by body image dissatisfaction and a low level of self-efficacy. Also, self-efficacy is influenced by body image, as persons with a positive body image have better self-efficacy.

This result was consistent with **Rabaglietti, et al., (2021),** who clarified that body image is positively related to self-efficacy. In the same way, **Novitasari & Hamid (2021)** stated that there was a statistically significant association between body image and self-efficacy.

Conclusion:

Based on the findings of the current study, it can be concluded that the educational program had a positive effect on enhancing patients' self-efficacy and body image.

Recommendation:

- A teaching booklet for burn patients to improve self-efficacy and body image should be available in burn departments.
- Measures, cautions, and awareness must be increased to protect individuals from all kinds of burn, especially thermal burn.
- Some strategies should be adopted to improve self-efficacy and body image in burn patients, enabling

them to successfully cope with the stressful conditions that they face as a result of their injuries.

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Author contribution:

The first author participated in the sample assortment, delivered the pre- and post-test, practical the educational program, prepared videos, color brochures, and posters, contributed to data assortment, contributed to the reference gathering and examination of data, and administered the program. The second author participated in the improvement of tools, and statistical examination, and contributed to data assortment and practical program.

Reference:

- **Abd Elalem, S., Shehata, O., & Shattla, S. (2018):** The effect of self-care nursing intervention model on self-esteem and quality of life among burn patients Clin Nurs Stud, 6(2), 79–90.
- **Abo El-Ata, A., & Berma, A. (2016):** Self-Efficacy and Psychological Status among Hospitalized Burned Patients. Port Said Scientific Journal of Nursing, 3(1), 1–22.
- **Al Sulaimi, M., Hutaglung, F., & Bin Syed Ali, S. K. (2022):** The mediating effect of physical activity in the relationship between body image and life satisfaction. International Journal of Instruction, 15(2), 349–372. https://doi.org/10.29333/iji.2022.15220a
- **Alemayehu, S., Afera, B., Kidanu, K., & Belete, T. (2020)**: Management outcome of burn injury and associated factors among hospitalized children at Ayder Referral Hospital, Tigray, Ethiopia. International Journal of Paediatrics, Volume 2020, Article ID 9136256, 9 pages, https://doi.org/10.1155/2020/9136256.
- **De Figueiredo, T., Utsunomiya, K., de Oliveira, A., Pires-Neto, R., & Tanaka, C. (2020):** Mobilization practices for patients with burn injury in critical care. Burns, 46(2), 314-321.
- **De Lorenzo, A., Lattke, L., & Rabaglietti, E. (2021):** Changes in weight, body image perception and self-efficacy: a study on Italian adolescents during the pandemic period. European Journal of Humanities and Social Sciences, 1(6), 48–54.
- **Dolatabad, F., Hashemi, F., Yektatalab, S., Ayaz, M., Zare, N., & Mansouri, P. (2021):** 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, 10(2), 135–146.
- **Faisal, A., Hussain, N., & Jawed, H. (2015):** Self-esteem in male and female patients injuries in Karachi. Pakistan Business Review, 17(3).
- **Ghahremani, L., Hemmati, N., Kaveh, M.H., & Fararoei, M. (2018):** Effects of an educational intervention targeting body image on self-esteem of Iranian high-school students: a quasi-experimental trial. Archives of Psychiatry and Psychotherapy, 2018; 1: 59–66 DOI: 10.12740/APP/81549.
- **Ho, K., Lam, U., Hidayah, H., Fernandez, T., Kuladeva, D., Farah, N., & Ibrahim, S. (2022):** Public awareness of first aid treatment in acute burns. Journal of Surgery and Medicine, 6(4), 424–427.
- **Jacobs, C., Vacek, J., Many, B., Bouchard, M., & Abdullah, F. (2021):** An analysis of factors associated with burn injury outcomes in low-and middle-income countries. Journal of surgical research, 257, 442-448.
- **Khadem-Rezaiyan, M., Aghajani, H., Ahmadabadi, A., Zanganeh, M., Tavousi, S., Sedaghat, A., & Hasanabadi, S. (2020)**: Epidemiology of severe burns in North-East of Iran: How is the burn size different in a developing country from developed one? Burns Open, 4(1), 4–9.
- **Kuang, D., Gu, D., Cao, H., Yuan, Q., Dong, Z. X., Yu, D., & Shen, X. (2021):** Impacts of psychological resilience on self-efficacy and quality of life in patients with diabetic foot ulcers: A prospective cross-sectional study. Annals of Palliative Medicine, 10 (5), 5610–5618.
- **Kumar, V. (2021):** Postburn rehabilitation and improvement of body image. Indian Journal of Burns, 29(1), 1.
- **Kurian, S., Padickaparambil, S., Thomas, J., Sreekumar, N., & James, A. (2019)**: Psychological evaluation of adult burn survivors: a pilot study. International Surgery Journal, 6 (12), 4428–4434.
- **Magbool, F.R., Ali, G.A., Hussein, A.H., & Jr., M.E. (2021):** Effect of Self Care Education on Quality of Life and Body Image among Burned Patients. Assiut Scientific Nursing Journal, Vol. (9) No. (24), March 2021, pp. (208–217).
- **Mohammed, R., Hassan, M., & Mohammed, I. (2021):** Nurses' Knowledge, Practice, and Attitude Regarding Burn Injury Management. Minia Scientific Nursing Journal, 9(1), 97–103.
- **Mortada, H., Saeed, M., Alturki, N., Alturkstani, M., & Alkahtani, M. (2020):** Parental knowledge, attitudes and practices towards burn first aid and prevention of pediatric burns in Jeddah, Saudi Arabia: a cross-sectional study. International Journal of Surgery and Medicine, 6 (3), 17–22.
- **Murray, H. (2020):** Intensive care unit nurses' performance regarding caring patients with head injury: an educational intervention. International Journal of Studies in Nursing, 3(3), 141.

- **Novitasari, E., & Hamid, A. (2021):** The relationships between body image, self-efficacy, and coping strategy among Indonesian adolescents who experienced body shaming. Enfermera Clnica, 31, S185-S189.
- **Opriessnig, E., Luze, H., Smolle, C., Draschl, A., Zrim, R., Giretzlehner, M., Kamolz, L., & Nischwitz, S.P., (2023):** Epidemiology of burn injury and the ideal dressing in global burn care – Regional differences explored, Elsevier; Burns, 49 (2023) 1–14.
- **Ouyang, Y., Wang, K., Zhang, T., Peng, L., Song, G., & Luo, J. (2020):** The influence of sports participation on body image, self-efficacy, and self-esteem in college students. Frontiers in psychology, 10, 3039
- **Ozamiz-Etxebarria, N., Dosil-Santamaria, M., Picaza-Gorrochategui, M., & Idoiaga-Mondragon, N. (2020):** Stress, anxiety, and depression levels in the initial stage of the COVID-19 outbreak in a population sample in the northern Spain. Cadernos de saude publica, 36(4).
- **Ozdemir, A., & Saritas, S. (2019):** Effect of yoga nidra on the self-esteem and body image of burn patients. Complementary therapies in clinical practice, 35, 86–91.
- **Peters, M., Potter, C., Kelly, L., & Fitzpatrick, R. (2019):** Self-efficacy and health-related quality of life: a cross-sectional study of primary care patients with multi-morbidity. Health and quality of life outcomes, 17 (37), 1–11.
- **Phuyal, K., Ogada, E., Bendell, R., Price, P., & Potokar, T. (2020):** Burns in Nepal: a participatory, community survey of burn cases and knowledge, attitudes and practices to burn care and prevention in three rural municipalities. BMJ open, 10(2), e033071.
- **Price, K., Lee, K., Woolley, K., Falk, H., Peck, M., Lilford, R., & Moiemen, N. (2021):** Burn injury prevention in low-and middle-income countries: scoping systematic review. Burns & trauma, 9. Oct 29; 9:tkab037. doi: 10.1093/burnst/tkab037. PMID: 34729373.
- **Rabaglietti, E., Lattke, L., Tesauri, B., Settanni, M., & De Lorenzo, A. (2021):** A balancing act during COVID-19: teachers' self-efficacy, perception of stress in the distance learning experience. Frontiers in psychology, 12, 644108.
- **Rhman, G., Salah Hassan, M., Mohamed Mohamed, Y., & Hussein Bakr, (2017):** Quality of life Among Patients with Burns. Egyptian Journal of Health Care, 8 (4), 305–322.
- **Saylan, E., &Soyyiğit, V. (2022):** Dimensions of body image: body image scale. Turkish Psychological Counseling and Guidance Journal, 12 (65), 229–247.
- **Seow, S., Halim, A., Wan Sulaiman, W., Mat Saad, A., & Mat Johar, S. (2020):** The practice of first aid for burn injuries among the population of East Coast of Peninsular Malaysia for 2012-2016. Journal of Burn Care & Research, 41(4), 905-907.
- **Seyedoshohadaee, M., Khachian, A., Seyedfatemi, N., & Mahmoudi, M. (2019)**: The Effect of Short-Term Training Course by Nurses on Body Image in Patients with Burn Injuries. World Journal of Plastic Surgery, 8(3), 359.
- **Suluhan, D., Sagiroglu, E., Demir, S., Yildiz, D., Merve, O., & Şenel, E. (2023):** Determination of the Relationship Between Self-Esteem and Social Anxiety in Adolescents with Burns. Türkiye Çocuk Hastalıkları Dergisi, Turkish Journal of Pediatric Disease, 17: 243-249. DOI: 10.12956/tchd.1254730.
- **Tehranineshat, B., Mohammadi Tazangi RM, Sohrabpour, M., Mohammad A., Parviniannasab, & Bijani M. (2020):** A Study of the Relationship among Burned Patients' Resilience and Self-Efficacy and Their Quality of Life, Patient Preference, and Adherence, 14(1), 1361–1369.
- **Thomas, L. (2020):** Quasi-Experimental Design, Definition, Types & Examples. Available at: https://www.scribbr.com/methodology/quasi-experimental-design/ Accessed on: March 19, 2023, 10:00 p.m.
- **Utsunomiya, K., de Figueiredo, T., de Oliveira, A., Pires-Neto, R., & Tanaka, C. (2020)**: Mobilization practices for patients with burn injury in critical care. Burns, 46(2), 314-321.
- **Van Diemen, T. (2020):** Self-management, self-efficacy, and secondary health conditions in people with spinal cord injury (Doctoral dissertation, University of Groningen).
- **Willemse, H., Geenen, R., Egberts, M.R., Engelhard, I.M., & Van Loey, N.E. (2021):** Perceived stigmatization and fear of negative evaluation: Two distinct pathways to body image dissatisfaction and self-esteem in burn survivors, Psychology & Health, DOI: 10.1080/08870446.2021.1970160.
- **Yousef, Y. E., El Magrabi, N. M., & Mohamed, E. A. (2018)**: Future Anxiety and Its Relation to the Body Image and Self-Concept among Adolescents with Burn Injury. IOSR J Nurs Health Sci (IOSR-JNHS), 7(3), 24-33.

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