Coping Strategies and Quality of Life among Burned Patients after Hospital Discharge

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ABSTRACT

Back ground: Burns is one of the common causes leading to morbidity and mortality worldwide that lead to physical, psychological, social and economic problems for the burned patients. **The aim** of the study is to assess coping strategies and quality of life among burned patients after hospital discharge. **Research design:** A descriptive design was utilized in this study. **Setting:** This study was conducted at Burns Outpatient Clinic of Benha Teaching Hospital. **The sample:** A Convenient sample (150) was collected from the above previously mentioned setting of burned patients. **Three tools were used 1):** A structured interviewing questionnaires which consisted of four parts to assess **A)** demographic characteristics of the studied burned patients. **B)** Current medical history of the burn among the studied patients. **C)** Knowledge of the studied patients regarding burn. **D)** Reported practices of burned patients about care of the burn. **II)** The Burn Specific Health Scale (BSHS-B) to assess quality of life of burned patients. **III)** Coping with Burn Questionnaire (CBQ) to measure coping strategies among burned patients. **Results:** 52.7% of the studied patients were female, while 39.3% of burns caused by boiling water, 47.3% of them were third degree burn. Regarding their knowledge about burn 46.7 % of them had poor knowledge. 65.3% had satisfactory practices regarding burn care, 59.3 % had poor quality of life and 46.0% had moderate coping strategies with the burn. **Conclusion:** There were statistically significant relation between total knowledge score of patients and their total practices regarding burn care. **Recommendation**: Health educational program should be developed and implemented for the burned patients to improve their quality of life and coping strategies.

Key words: Burned Patients, Coping Strategies and Quality of Life

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INTRODUCTION

Burns are the fourth leading traumatic event in the world after traffic accidents, falls and violence among individuals. They involve threats that lead to a decrease in quality of life, increasing disability and death. Globally; there are an estimated 486,000 people treated from burn injuries annually in the United States, leading to 40,000 hospital admissions, every year more than 300,000 people die from fire-related burns worldwide, with the highest deaths from burning occurring in Southeast Asia and the Middle East. Currently; 90% of burns occur in moderate- and low-income countries due to a lack of facilities and failings in the management of this event **(Deeter et al., 2019).**

Burn is a common cause of physical trauma; it may range from minor skin involvement to major multisystem derangements, and caused by heat as flames, hot liquids or hot objects, electrical when the human body comes in contact with an electrical source, either directly or through material that is a conductor, chemicals caused by exposure to a chemical substance either strong acids as hydrochloric acid or strong bases as silicate or radiation. The classification of burns according to the depth of tissue injury is first (superficial), second (superficial partial-thickness), third (deep partial-thickness) and fourth degree (full-thickness) burn **(Sahu et al., 2016).**

Coping strategies defined as the cognitive and behavioral efforts used to manage external and internal stressors, it play an important role in the psychosocial adaptations of the burned patients. These include returning to normalcy, mediating and predicting post-traumatic stress disorder (PTSD), and managing depression after burn. Negative or maladaptive coping strategies (e.g., avoidant coping) have been found to be related to ‘‘poor outcomes’’, whereas positive or adaptive coping styles (e.g., emotional support and self-acceptance) relate not only to improved well-being but also to posttraumatic growth **(Sheerin et al., 2018; Bibi1 et al., 2018).**

The quality of life for patients can be World Health Organization define Quality of Life as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns; It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, personal beliefs, and social relationships. Burns is an event that affects body and spirit of the

Patients. Emotional problems, Post-traumatic stress, body dysmorphic, and social anxiety disorders, skin lesions and the related complications such as muscular dystrophy, dysfunction, skin allergies and rashes are among the problems that can affect the QOL of the burned patients **(Zhang et al., 2019; WHO, 2020).**

The community health nurse play an important role regarding controlling of burn through preventive health care which divided into three levels; primary prevention; include preventive measure to reduce the incidence of burn through health promotion and education. Secondary prevention; include early detection and treatment of the burn through educate people first aid that considered significantly important step in the process of burn treatment and help patient to control of burn by compliance to proper management, Tertiary prevention; try to reduce complications and disabilities of burn and help patient in rehabilitation processes which requires physical, psychological and social adaptation and should start on the day of injury and last for a long time after discharge from hospital (**Yurdalan et al., 2018; Spronk et al., 2020).**

Significance of the study

Burn is one of the leading causes of morbidity and mortality among Egyptians as many cities are lacking a well-equipped and prepared burning center. The last Egyptian estimates, according to the data provided by the Statistical Records of the Central Agency for Public Mobilization and Statistics in Egypt (2013), revealed that up to 11,697 burn patients were treated in governmental Egyptian hospitals, a number that has increased over the last few years from, 2008–2011. The mortality rate of burn victims in Egypt is as high as 37%, compared to the average of 5% in other countries in the region. (**Elsherbiny, et al. 2018)**.

In Cairo University hospital (Kasr El-Ainy Burn Unit; KABU) over a period of one year from 1/3/2016 to 28/2/2017 Children 12 years or less accounted for 203 (48.9%) of cases; however elderly patients were 23 (5.5%). The majority of cases came from Giza and Cairo. Despite that male constituted the majority of cases 271 (65.3%), there was no significant difference between age groups. Also, the majority of admitted cases were flame and scald burn (more than 75%). However, scald burn is prevalent in children (67.5%) of them and flame burn is the most prevalent in other age categories. Most of the cases (more than 70%) were indoors burns with no significant difference between age groups. In children, head (46.3%) and lower limbs (45.3%) were the most frequent areas affected. In elderly group, head (87%), lower limbs (43.5), upper limbs (60.9%) and hands (43.5) were the most frequent areas affected (**Taha, et al. 2018).**

Aim of this study is to: Assess knowledge of patients regarding burns.

- Assessing knowledge of patients regarding burns.
- Assessing practices of patients regarding controlling of burn complications and dealing with burns injury.
- Assessing coping strategies of burned patients and their quality of life after hospital discharge

Research questions: this study is based on answering the following questions:

1- 1- Is there a relationship between socio demographic characteristic of burned patients and their knowledge?
2- Is there a relationship between socio demographic characteristic of burned patients and their practice?
3- Is there a relationship between total knowledge and practices of the studied patients regarding controlling of burn complication?
4- Are burns has effect on quality of life of burned patients?

SUBJECT AND METHODS

Research design:-A descriptive research design was utilized to conduct this study.

Settings:-This study was conducted in Burns Outpatient Clinic of Benha Teaching Hospital because it is the only Outpatient Clinic for Burns at Benha City.

hospital, common mistake when deal with

Sampling:-Convenient sample (150 patients) from the above previously mentioned setting of burned patients aged 18 - < 60 years old who attending to the selected setting for follow up in the period of six months from the beginning of the study.

Tools of data collection:-

Three tools were used to collect the data:

Tool (I): A structured interviewing questionnaire: It was developed by the investigator based on reviewing related literatures, and it was written in simple clear Arabic language: It comprised of four parts to assess the following: **First part:** It was concerned with demographic characteristics of the studied burned patients; it include 7 closed ended questions as age, sex, marital status,

hand carefully before Spare on the burn, use the prescribed antiseptics and ointments when spare on burning.

Second part: It was concerned with medical history of the burn among studied patients, it include 7 closed ended questions as causes of burn, burn site, duration of burn injury, degree of burn, results after burn injury, is there burn infection and is there skin graft.

Third part: It was concerned with knowledge of the studied patients regarding burn, which included 22 questions as meaning , sources of burn, depth of burn, risk factor of burn, first aid for thermal burn, first aid for chemical burn, first aid for electrical burn, first aid for radiation burn, times that should go to the near

hospital, procedure for burn care in the home, signs of burn infection.

Fourth part: It was concerned with reported practices of burned patients about care of burn and measure to prevent burn complication which include 16 items that divided into **1): Diet** which includes (5) questions as; eat rich protein diet as meat and egg, eat all type of fruit and vegetables to help in wound healing. 2): **Daily living activity** which include (3) questions as; Perform daily living activity without dependence on other, sleep adequate time from 6 to 8 hours. **3): Treatment regimen and follow up** which include (3) questions as; Take medication in regular way, present to outpatient for follow up. **4): Burn care** which include (5) questions as; Wash.

them a brief orientation to the purpose of the study. They were also reassured that all information gathered would be kept confidentially and used only for the purpose of the study. Patient had right to withdraw from the study at any time without giving any reasons.

Tool (II): The Burn Specific Health Scale (BSHS-B) to assess quality of life of burned patients divided into nine domains (simple abilities, hand function**,** heat sensitivity, treatment regimens, work, affect, Body image, sexuality and Interpersonal relationships) adapted from **(Kildel et al., 2001).** It was translated into Arabic by the investigator.

Tool (III): Coping with Burn Questionnaire (CBQ) to measure coping strategies among burned patients divided into sex domains (adjustment, avoidance, emotional support, problem solving, self-control and instrumental action) was adapted from **(Willebrand et al., 2001).** It was translated into Arabic by the investigator.

Content validity and reliability:

The tools validity was done by three Staff Nursing Experts from Community Health Nursing Specialties of Benha University who reviewed the tools for clarity, relevance, comprehensiveness, and applicability.

Reliability of the tool was applied by the researcher for testing internal consistency of the tool. The reliability for knowledge was 0.82 and for practice 0.85.

Ethical considerations

All ethical issues were assured; oral consent has been obtained from each patient before conducting the interview and given them a brief orientation to the purpose of the study. They were also reassured that all information gathered would be kept confidentially and used only for the purpose of the study. Patient had right to withdraw from the study at any time without giving any reasons.

Pilot study:

The pilot study was carried out on (15) burned patient which represented 10% of the sample size. The pilot study was aimed to assess the tool clarity, applicability and time

needed to fill each sheet, completing the sheet consumed about 30 minutes. No modifications were done, so the pilot study sample was included in the total sample.

Fieldwork:

The data was collected from burned patients who attended in the previously selected setting through the interview with them. The study was conducted at a period of 6 months which started from the beginning of July 2019 to the end of December 2019. The investigator was attended two days/ week (Sunday & Wednesday) from 9.00 AM. : 12 PM., to collect data with distributed instruction guideline to patients and the average number of interviewed patients was between 2-3 patients/day depending on their responses to the interviewers, each interviewed patient takes about 30 minutes to fill the sheet depending upon their understanding and response, as well as distribute the questionnaire.

Administrative design:

Official letters was obtained and delivered from Dean of Faculty of Nursing; Benha University directed to Teaching Hospital in Benha .Where the study was conducted concerned the title, objectives, tools and the study technique will be illustrated to gain their cooperation which is needed to allow the investigator to meet the patients at teaching hospital in Benha.

Statistical design:

All data collected were organized, tabulated and analyzed by using the Statistical Package for Social Science (SPSS version 20), which was used frequencies and percentages for qualitative descriptive data, and chi-square coefficient x^2 was used for relation tests, and mean and standard deviation was used for quantitative data, Pearson correlation coefficient (r) was used for correlation analysis and degree of significance was identified.

RESULTS

Table (1): Frequency distribution of the studied patients regarding their demographic characteristics (n=150).

demographic characteristics	No.	%
Age/ years		
18 - 30	77	51.3
31 - 40	47	31.3
41 - 50	20	13.3
51 – less than 60 years	6	4.0
X ±SD	9.1±30.74	
Sex		
Male	71	47.3
Female	79	52.7
Marital status		
Single	44	29.3
Married	70	46.7
Widowed	21	14.0
Divorced	15	10.0
Educational level		
Don't read and write	23	15.3
Basic education	52	34.7
Secondary education	50	33.3
University education and more	25	16.7
Occupation		
Occupied	102	68.0
Not occupied	48	32.0
Residence		
Urban	58	38.7
Rural	92	61.3
Type of family		
Consisting of single individual	29	19.3
Nuclear family	35	23.3
Extended family	86	57.3

Table (1): Shows that; 51.3% of the patients aged from 18 to 30 years with mean age were 9.1±30.74, 52.7% of them were female, 46.7% of them were married while 68.0% of them were occupied, 61.3% of them were living in rural area and 57.3% of them were living in extended family.

Table (2): Frequency distribution of the studied patients regarding their present medical history of burn (n=150).

Items	No.	%
Causes		
Fire	29	19.3
boiling water	59	39.3
Electricity	30	20.0
Radiation	4	2.7
Chemical	28	18.7
Burn site*		
Head		
Neck	23	15.3
Face	25	16.6
Balm	65	43.3
Feet	39	26.0
Chest	17	11.3
Abdomen	19	12.6
Back	19	12.6
Thigh	33	22.0
Upper arm	18	12.0
Lower arm	21	14.0
Lower leg	18	12.0
Duration of burn injury		
1day to 2 months	114	76.0
3 to 5 months	18	12.0
6 to 8 months	12	8.0
9 months to 1 year	6	4.0
Degree of burn		
First degree	10	6.7
Second degree	69	46.0
Third degree	71	47.3
Results after burn injury		
Hospital admission	63	42.0
Present to outpatient for burn care	87	58.0
Present Infection	40	26.7
Skin graft	28	18.7

Table (2): Reveals that; 39.3% of burns caused by boiling water, 47.3% of them were third degree burn while 43.3% of them have burn in the balm.

Figure (1): Frequency distribution of the studied patients total knowledge score regarding burn

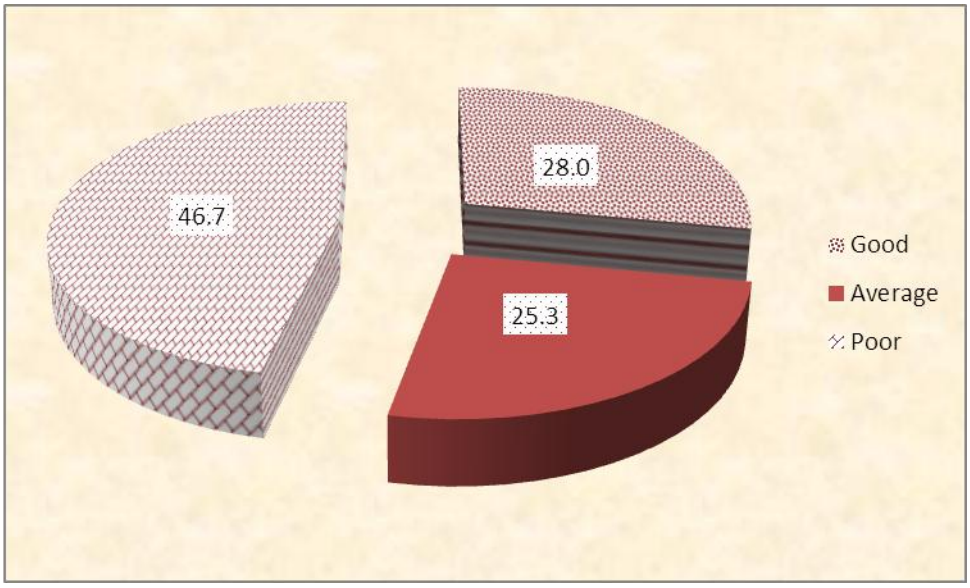

Figure (1): Shows that; 46.7 % of the studied patients had poor knowledge score regarding burn; while 28.0% of them had good knowledge and 25.3% of them had average knowledge.

Figure (2): Frequency distribution of the studied patients' total practices regarding burn care.

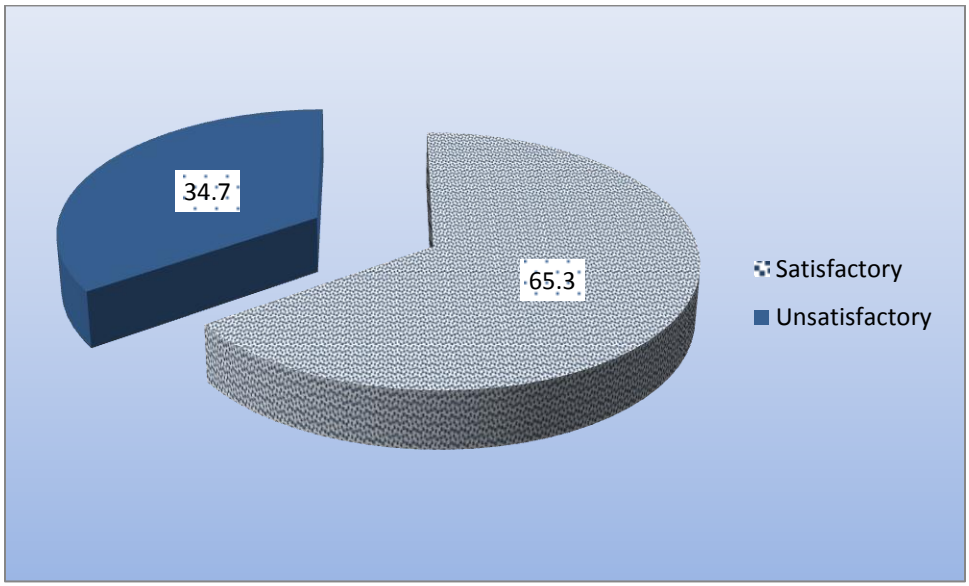

Figure (2): Reported that; 65.3% of the studied patients had satisfactory total practices score regarding burn care; while 34.7% of them had unsatisfactory total practices score.

Figure (3): Frequency distribution of the studied patient's total quality of life

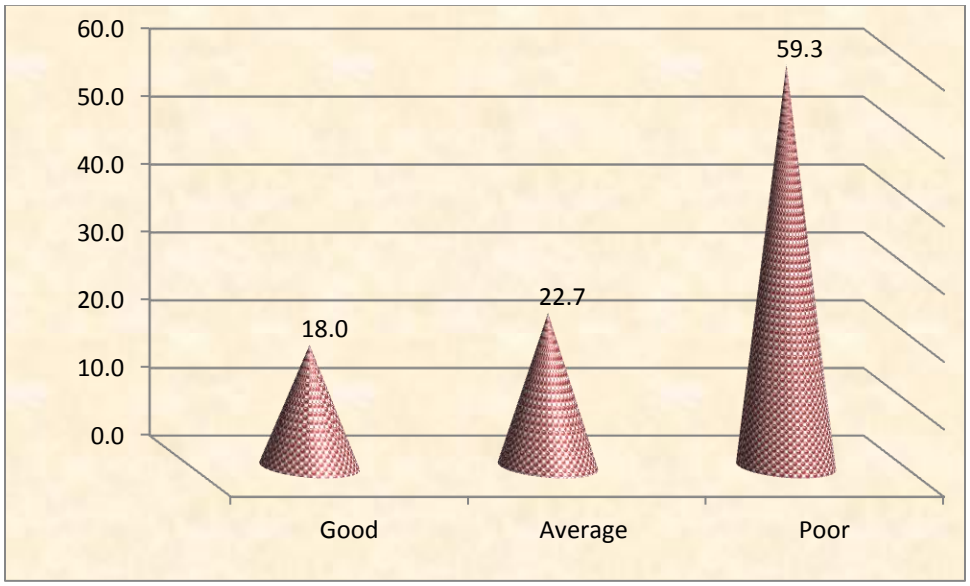

Figure (3) shows that; 59.3 % of the studied patient's had poor total quality of life regarding burn while 22.7% of them had average total quality of life and 18.0% of them had good total quality of life.

Figure (4): frequency distribution of studied patients total coping strategies (n=150).

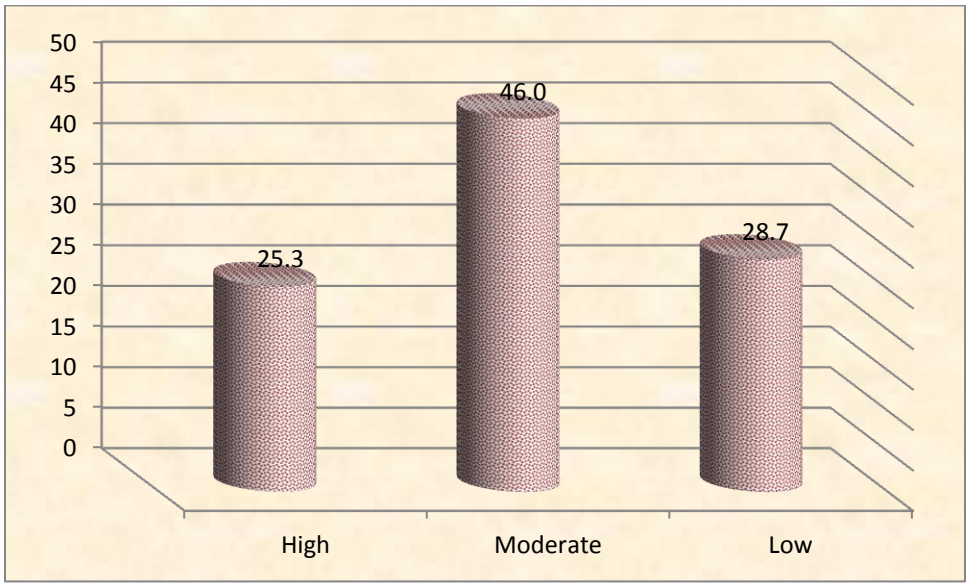

Figure (4) shows that; 46.0% of the studied patient's had moderate coping strategies with burn, while 28.7% of them had low coping strategies with burn and 25.3% of them had high coping strategies with burn.

Table (24): Statistically correlation between total knowledge, practices, quality of life and coping strategies (n=150).

Items		Total knowledge	Total practices	Total quality of life	Total coping strategies
Total knowledge	R	1	.594	0.019	.125
	p-value		.000**	.820	.128
Total practices	R	.594	1	0.091	.406
	p-value	.000**		.268	.000**
Total quality of life	R	0.019	-.091-	1	0.177
	p-value	.820	.268		0.030*
Total coping strategies	R	.125	.406	0.177	1
	p-value	.128	.000**	.030	

****Highly significant P < 0.001**** *** significant P < 0.005***

Table (24): Reveals that; there were a highly statistically significant relation between total practices of patients and total knowledge And between total adjustment and total practices (p-value < 0.001).While there was statistically significant relation between total coping strategies and total quality of life (p-value < 0.005).

DISCUSSION

A burn is an injury to the skin or other organic tissue primarily caused by thermal or other acute trauma. It occurs when some or all of the cells in the skin or other tissue are destroyed by hot liquid (scalds), hot solids (contact burns) or flames (flam burns), radiation, electricity or chemicals substance. Burns lead to critical injuries that may if inadequately or inappropriately managed result in multiple organ dysfunction and death. The physical, psychological and psychosocial manifestations may compromise the quality of life of burned patients. Emotional problems and the severity of the burn are important factors that can impair the quality of life over time. Burn injuries also influence the individual's capability to cope with stressful life events and communication with the external world. Coping refers to the cognitive and behavioral strategies involved in efforts to master, reduce, and tolerate demands caused by the stress **(Echevarría-Guanilo et al., 2016; Bibi et al., 2018).**

According to demographic characteristic of the studied patients, this study showed that half (51.3%) of them were aged from 18-30 years old (table 1), this might be due to the person become more active in this age and face more dangerous including burn. This finding in agreement with **Elsherbiny et al., (2018),** who made study about effect of burn rehabilitation program on improving quality of life (QoL) for hand burns patients: a randomized controlled study in Egypt, and reported that 60% of patients were in the young adult group in between 20 and 30 years. Also in the same line with **Ali et al., (2016),** who made study about clinical and demographic features of burn injuries in Karachi: a six-year experience at the burns center, civil hospital, Karachi, and reported that (58.2%) of the cases were aged between 16-30 years.

Regarding to sex**,** this study revealed that more than half (52.7%) of the studied burned patients were female (table 1), this might be due to the female are increasing involved in the kitchen therefore more exposed to fire and hot liquids and use chemical substance in cleaning the home and clothes. this finding in agreement with **Sivamuthu (2019)** who made a study about epidemiological study of 100 cases of burn injuries in India, and reported that the female more affected than male and the ratio for male to female was 1:1.35. On the other hand; this finding disagreement with **McGarry et al., (2016),** who made study about mental health and itch in burns patients: Potential associations in Australia, and reported that 65% of the burned patients were male**.**

Regarding to marital status , this study clarified that slightly less than half (46.7%) of the studied burned patients were married (table 1) this finding in disagree with **Bayuo et al., (2016),** who made a study on acute burn injury survivors and the associated issues in Ghana ,and reported that 76% of the patients were married.

According to present medical history of the burned patients, this study illustrated that boiling water causes two fifth (39.3%) of the burn (table 2), This might be explain that female more affected than male related to female exposed to boiling water and fluid more than male especially in kitchen. This finding in agreement with **Sepehripour et al., (2018),** who made a study on life expectancy in elderly patients following burns injury in United Kingdom, and reported that scalds burn represented 46.0% of the burn. On the other hand; this finding disagree with **Bayou et al., (2018)**, who made study about epidemiology and outcomes of burn injury among older adults in a Ghanaian tertiary hospital in Ghana, and reported that flame burns resulting from gas explosion and bush fires were the major cause of burns in the older adult population that causes 51.6% of burn. Also in the same line with **Deeter et al., (2019),** who made study about hospital-acquired complications

alter quality of life in adult burn survivors: Report from a burn model system in United States, and reported that 64.5% of the burn caused by fire or flam.

Regarding degree of burn injury**,** this study revealed that third degree burn is represented slightly less than half (47.3%) of the burn degree in studied patients. (table 2), this finding disagree with **Oh & Boo (2017),** who made study about assessment of burn-specific health-related quality of life and patient scar status following burn in South Korea, and reported that third degree burn represented 61% of the burn degree in studied patients. Also in the same line with **Forbinake et al., (2019),** who made study about epidemiologic and clinical profile of burns in a tertiary hospital in Sub-Saharan Africa in Cameroon, and reported that 51.1% were second degree burns.

Regarding burn site, this study showed that more than two fifth (43.3%) of the studied patients had burn in the balm (table 2), this finding agreement with **Dowda & Li (2014),** who made study about major concerns and issues in burn survivors in Australia, and reported that 58% of the burned patients affected on the hand. On the other hand; this finding disagree with **Zhang et al., (2019),** who made study about the correlation between quality of life and acceptability of disability in patients with facial burn scars in China, and reported that 58.7% of the studied burned patients affected on the trunk followed by 55.4% affected on upper limb.

Regarding burn Infection, this study showed that more than one quarter (26.7%) of the studied patients had burn infection (table 2), this finding in agreement with **shahid et al., (2018),** who made study about assessment of quality of life in post burn survivors: a cross-sectional single-center first validation study from Pakistan, and reported that 16% of the burned patients had Post burn complications such as infection.

Regarding skin graft, this study showed that slightly less than one fifth (18.7%) of the studied patients had skin graft (table 2), this might be due to the skin graft surgery is expensive and the most patients don't have the adequate financial support to carry out this surgery. This finding disagrees with **Karimi et al., (2015),** who made study about financial burden of burn injuries in Iran: a report from the burn registry program, and reported that Skin grafts were carried out in 65.4% of the patients.

Regarding total knowledge score regarding burn, this study revealed that more than two fifth (46.7%) of the studied patient's had poor knowledge regarding burn (Figure 2), this might be had strongly relation with education level of them which only less than fifth of them had high educational level ,this finding disagree with **Mohamed (2018)**, who

made study about quality of life among patients with burns in Egypt, and reported that 63% of the studied patients had unsatisfactory level of total knowledge regarding burn injury.

Regarding total practices regarding burn, this study showed that almost two third (65.3%) of the studied patient's had satisfactory total practices score regarding burn (figure 4), this finding might be related to patients comply with the instructions prescribed by the health staff member during follow-up and medical health staff reinforcing patient to carry out healthy behavior to improve burn condition.

Regard total quality of life the results revealed that slightly less than three fifths (59.3%) of the studied patient's had poor total quality of life regarding burn (figure 5), this might be related to the burn injury had negative impact in all life aspect among patients and their families. This finding in disagree with **Mohamed (2014),** who made study about the effect of an educational program for burned patients on their quality of life at Benha teaching hospital in Egypt, and reported that 76.7% of burned patients had poor quality of life.

Regarding total coping strategies among burned patients, this study showed that more than quarter (28.7%) of them had low coping strategies with burn (figure 6), this might be due to lack of knowledge regarding ways to cope with burn. This finding in the same line with **Rothman et al., (2016),** who made study about coping styles and quality of life in adults with burn in United States, and reported that 39.2% of the burned patients had dysfunctional coping styles.

The present study revealed that there was statistically significant relation between total coping strategies and total quality of life score of the studied patients (table 24), This might be due to effective coping with burn condition and related problem lead to enhance and improve quality of life among burned patients. This finding in agreement with **Sideli et al., (2017),** who made study about association between coping strategies and psychological adjustment after small burn injuries. A cross-sectional study, and reported that avoidant coping strategies were related to poor mental quality of life. Also in the same line with **Rothman et al., (2016),** who made study about coping styles and quality of life in adults with burn in United States, and reported that correlation found that coping strategies and burn related quality of life (BRQOL) were highly correlated with 47.6% overlapping variance.

CONCLUSION

More than two fifth of the burned patients had poor knowledge regarding burn, almost two thirds of the burned patients had satisfactory practices regarding burn care, three fifth of the burned patients had poor quality of life while more than two fifth of the burned patients had

moderate coping strategies of the burn. There were a highly statistically significant relation between demographic characteristics of the studied patients and their educational level. There were a highly statistically significant relation between total practices score of patients and their educational level and residence. There were statistically significant relation between total quality of life score of patients and their age, educational level and type of family. There were statistically significant relation between total coping score of patients and their sex. There were highly statistically significant relation between total knowledge score of patients and their total practices. There were statistically significant relation between total coping strategies and total quality of life.

RECOMENDATIONS

In the light of the results of the present study, the following recommendations are suggested:

1. Health educational program should be developed and implemented for the burned patients to improve their quality of life and coping strategies.
2. Conduction of support groups for burned patients to cope with the burn problems and disturbance.
3. Further studied needed to focus on studying factors affecting on quality of life for patients with burn.

REFERENCE

1) **Ali S., Hamiz-ul-Fawwad S., Al-Ibran E., Ahmed G., Saleem A., Mustafa D. & Hussain M. (2016):** Clinical and demographic features of burn injuries in Karachi: a six-year experience at the burns centre, civil hospital, Karachi, Annals of burns and fire disasters, 29(1), P.4.
2) **Bayuo, J., Agbenorku, P., Amankwa, R. & Agbenorku, M. (2018):** Epidemiology and outcomes of burn injury among older adults in a Ghanaian tertiary hospital, Burns Open, 2(2), P.100.
3) **Bayuo J., Agbenorku P. & Amankwa R. (2016):** Study on acute burn injury survivors and the associated issues, Journal of Acute Disease, 5(3), Pp.206-207.
4) **Bibi A., Kalim S. & Khalid M. (2018**): Post-traumatic stress disorder and resilience among adult burn patients in Pakistan: a cross-sectional study, Burns & trauma journal, 6(8), p. 2.
5) **Bibi A., Khalid A., Jabeen S., & Azim S. (2018):** Symptoms of posttraumatic stress disorder and coping strategies among female burn victims: An exploratory study, Indian Journal of Burns, 26(1), P.61.

6) **Deeter L., Seaton M., Carrougher G., McMullen K., Mandell S., Amtmann, D. & Gibran N. (2019**): Hospital-acquired complications alter quality of life in adult burn survivors: Report from a burn model system. Burns, 45(1), P.42-47.

7) **Dowda D. & Li F. (2014**): Major concerns and issues in burn survivors in Australia, Burns & trauma, 2(2), P. 58.

8) **Echevarría-Guanilo E., Gonçalves N., Farina A., & Rossi A. (2016):** Assessment of health-related quality of life in the first year after burn, Escola Anna Nery, 20(1), p.156. **Bayuo J., Agbenorku P. & Amankwa R. (2016):** Study on acute burn injury survivors and the associated issues, Journal of Acute Disease, 5(3), Pp.206-207.

9) **Elsherbiny O., El Fahar M., Weheida S., Shebl A. & Shrief W. (2018):** Effect of burn rehabilitation program on improving quality of life (QoL) for hand burns patients: a randomized controlled study, European Journal of Plastic Surgery, 41(4), P.453.

10) **Forbinake N., Dongmo G., Ohandza C., Chichom-Mefire A., Fokam P. & Beyiha G. (2019):** Epidemiologic and clinical profile of burns in a tertiary hospital in Sub-Saharan Africa, Burns, 3(4), P.1.

11) **Karimi H., Motevalian S., Momeni M. & Ghadarjani M. (2015):** Financial burden of burn injuries in Iran: a report from the burn registry program, Annals of burns and fire disasters, 28(4), P.310.
Pp.1446-1447.

12) **McGarry S., Burrows S., Ashoorian T., Pallathil T., Ong K., Edgar D. & Wood F. (2016):** Mental health and itch in burns patients: Potential associations, Burns, 42(4), P.763.

13) **Mohamed R. (2014):** the effect of an educational program for burned patients on their quality of life at Benha teaching hospital, Medical- Surgical Nursing, Faculty of Nursing, Benha University, P. 84.

14) **Mohamed W. (2018):** Quality of Life among Patients with Burns, Master thesis, Medical surgical Nursing, Faculty of Nursing, Ain shams University, Pp.1-58

15) **Oh H., & Boo S. (2017):** Assessment of burn-specific health-related quality of life and patient scar status following burn, Burns, 43(7), P.1482.

16) **Rothman D., Sutter M., Perrin P., LiBrandi H. & Feldman M. (2016):** Coping styles and quality of life in adults with burn, Burns, 42(5), P.1105.

17) **Sahu S., Agrawal K. & Patel P. (2016):** Scald burn, a preventable

injury: Analysis of 4306 patients from a major tertiary care center, Burns, 42(1),P.1844.

18) **Shahid F., Ismail M. & Khan S. (2018):** Assessment of quality of life in post burn survivors: A cross-sectional single-center first validation study from Pakistan, Burns Open, 2(1), Pp.37-40.

19) **Sheerin C., Chowdhury N., Lind M., Kurtz E., Rappaport L., Berenz E. & Amstadter A. (2018):** Relation between coping and post trauma cognitions on PTSD in a combat-trauma population, Military Psychology, 30(2), P.99.

20) **Sideli L., Di Pasquale A., Barone M., Mulè A., Prestifilippo A., Cataldi S. & La Barbera D. (2017):** association between coping strategies and psychological adjustment after small burn injuries. A cross-sectional study, Clinical Neuropsychiatry, 14(2), P.151.

21) **Sivamuthu C. (2019):** Epidemiological study of 100 cases of burn injuries, International Surgery Journal, 6(2), P. 429.

22) **Spronk I., Van N., Sewalt C., Nieboer D., Renneberg B., Moi A. & Polinder S. (2020):** Recovery of health-related quality of life after burn injuries: An individual participant data meta-analysis, PLoS one, 15(1), P. 1

23) **Taha A., Beshr A., Tahseen H., Nawar A. & Darwish Y. (2018):** Pattern of burns in a population presented to Cairo University hospitals over one year; an epidemiological study, Burns Open, 2(2), P. 90-93.

24) **Sepehripour S., Duggineni S., Shahsavari S. & Dheansa B. (2018):** Life expectancy in elderly patients following burns injury, Burns, 44(6),

25) **World Health Organization (2020):** WHOQOL: Measuring Quality of Life, Available at: https://www.who.int/ healthinfo/ survey/who qol-qualityof life/en/, Accessed on 19 January 2020.

26) **Yurdalan S., Unlu B., Seyyah M., Senyildiz B., Cetin Y. & Cimen M. (2018):** Effects of structured home-based exercise program on depression status and quality of life in burn patients, Burns 5, P.1287.

27) **Zhang X., Liu Y., Deng X., Deng C., PanY. & Hu, A. (2019):** The correlation between quality of life and acceptability of disability in patients with facial burn scars, Frontiers in Bioengineering and Biotechnology, 7(1), P. 329.

28) **Zhang X., Liu Y., Deng X., Deng C., PanY., & Hu, A. (2019):** The correlation between quality of life and acceptability of disability in patients with facial burn scars, Frontiers in Bioengineering and Biotechnology, 7(1), P. 329.