

Quality Of life Among Patients with Burns

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Abstract

Background: After hospital discharge, most patients with burns report changes in the physical, psychological and social manifestations that may compromise the quality of life (QOL) of them. **Aim:** This study aims to assess the QOL for patients with burns. **Design:** A descriptive exploratory design was used. **Setting:** it was conducted at the outpatients' clinics of the burn unit at El-Demerdash Surgical Hospital. **Subjects:** A convenience sample of 100 adult patients from both sexes with burns was recruited for this study. **Tools:** I) A structured interview questionnaire to assess the sociodemographic, medical history and burn characteristics and knowledge of patients. II-The Burn Specific Health Scale - Brief (BSHS-B) to assess the QOL among patients with burns. **Results:** The study findings revealed that 46% of the studied patients were male. Regarding the QOL, the study had indicated that 71% of the studied patients had poor QOL and the greatest poor domains of the QOL were seen in heat sensitivity 81%, work 70%, Affect 62%, body image 47%. **Conclusion:** The study had indicated that more than two thirds of the studied patients had poor QOL and the most affected domain was heat sensitivity. **Recommendations:** Further research studies are needed to focus on studying factors affecting QOL for patients with burn.

Key words: Burns and Quality of life.

Introduction

A burn is an injury to the tissues of the body caused by heat, chemicals, electric current, or radiation, involves the partial or complete destruction of the skin and its appendages (hair follicles, nails, and sweat glands) (Freeman2017).

Burns are among the most devastating injuries an individual can experience. Burns can be painful and disfiguring and require long hospitalization. Burns injury can be life threatening or fatal. Most burns occur in the

home and are preventable (Bulechekand Butcher 2017).

Burns and related injuries are still the major cause of mortality and disability around the world, always causing physical, psychological and economic loss in different societies; therefore, it is considered as one of the major health complications. Every year, approximately 2.4 million cases of burn injury occur in the world (Partridge 2017).

Quality Of life Among Patients with Burns

Quality of life (QOL) is considered as a multidimensional construct. Physical, psychological, social, and spiritual aspects have been identified as domains that are of great importance to a patient's total well-being (**Tedstone and Terrier 2017**).

Advances in treatment and critical care have largely improved the survival following burns; therefore, the awareness about the QOL will help the nurses as a member of the health care team to lead and improve the quality of life of the patients with burns (**Harris 2017**).

Nursing staff form the largest section of the multidisciplinary burn team, responsible for implementing the daily continuous care of the burn patient. The burn unit nurse is at the center of the team coordinating all the patients' care activities and provide the total care of the patient (**Stavros, et al., 2014**).

Burn nurses require a range of skills from management of acutely unwell critical-care patients on mechanical ventilation and renal support, sophisticated wound dressing techniques, to emotional support for patients and their families. This will ensure quality care, which increase the likelihood of the patient's survival and promotes optimal QOL (**Herndon and Blakeney 2017**).

Significance of the Study:

Burns are the fourth most common type of trauma worldwide, and its related injuries are still the major cause of mortality and disability around the world, always causing physical, psychological and economic loss in different societies; therefore, it is considered as one of the major health complications. Accordingly, most patients with burns experience a profound impairment in QOL (**WHO, 2017**).

Aim of the Study

The present study aimed to:

Assess quality of life among patients with burns.

Research Questions:

1-Does burn affect patients' quality of life?

2-What is the most quality of life domain affected among the patients with burns?

SUBJECTS AND METHODS

I. Technical Design:

The technical design entails the study design, setting, subjects, and tools for data collection.

Research Design:

A descriptive exploratory design was utilized to conduct this study.

Research Setting:

This study was conducted in the two outpatients' clinics for follow up and dressing for the burn patients at burn unit in El-Demerdash Surgical Hospital affiliated to Ain Shams University Hospitals in the ground floor of the burn center, each clinic consists of two bed and the medical supplies for dressing these clinics receives more than one hundred patients five days a week from Saturday until Thursday (Tuesday off).

Subjects:

A convenience sample of 100 patients with second and third degree burns on outpatients' clinics in burn unit. Based on

retrospective statistical data at the year 2016, the numbers of patients with burns on outpatient clinic in the burn unit were 7500 patients a year.

The sample size calculation done based on statistical power analysis.

Type I error with significant level (α) = 5%

Type II error by power test (1-B) = 90%

Found the minimum sample (100) cases.

Tools of data collection:

Two tools were used in the current study as follows:

I-A structured interview Questionnaire.

It was developed by the researcher based on the related literature ((**Deborah and Frank 2014, Bluestein and Javaheri 2017, Echevarria 2016 and Maechel 2016**)) and it was written in English language and filled by the researcher and divided into 3 parts.

The first part:

It was concerned with assessment of sociodemographic data of the patients as (Gender, Age, Educational level, Occupation, Residence, Marital status, Health Insurance, Live with, Income).

The second part:

Burn characteristics: It was used to assess the Causes of burn, Site and Surface area (%).

The third part:

It was concerned with patient's knowledge regarding to the burn injury.

Scoring system

The total score of knowledge was 38 grades. Each correct answer was given one grade and the incorrect answer was given zero.

It was considered as follows

- $\geq 70\%$ satisfactory level of knowledge when the total grades were ≥ 27 grades.
- $< 70\%$ unsatisfactory level of knowledge when the total grades were < 27 grades.

II-The Burn Specific Health Scale - Brief (BSHS-B). It was a standardized tool adopted from **kildal et al., (2014)**: This tool was used to assess the quality of life for patients with burns.

Scoring system

The total score ranged from 0–160 and then the total grades were as follows:

- Poor QOL = 0 - $< 50\%$ or less than grade 80.
- Average QOL = 50 - $< 75\%$ or less than grade 120.
- Good QOL = 75% and more or more than grade 120

II- Operational Design:

• Preparatory phase:

It included reviewing of related literature, and theoretical knowledge of various aspects of the study using books, articles, Internet, periodicals and magazines to develop data collection tools.

Quality Of life Among Patients with Burns

• **Validity & Reliability:**

Validity: assessing face and content validity of the suggested tools through a jury of seven experts (5) professors and (2) assistant professor of Medical Surgical Nursing.

Reliability: Alpha Cronbach test was used to measure the internal consistency of the study tools. In which total knowledge was reliable at (0.95) and the quality of life scale reliable at (0.91).

• **Pilot Study:**

A pilot study was conducted on a group of 10 patients with burns to test applicability and clarity of the tool, as well as to estimate the time needed to fill in the tools. Necessary modifications were done for the tools then the final form was developed based on findings of pilot study. Patients included in the pilot study were excluded from the subject group.

• **Field Work :**

Sampling and data collection were started and completed within 6 months, from July 2017 until the end of December 2017. Purpose of the study was simply explained to the patients who agreed to participate in the study prior to data collection. The researcher started to collect data from patients and patients' medical records. The study tools were filled in and completed by the researcher (from first follow-up visit to outpatients' clinics up to six months later to assess QOL for the studied patients). The data were collected by the researcher 2 days/week. On Saturday and Monday at the morning shift.

Administrative Design:

Before starting data collection, an official letter was issued from the Faculty of Nursing, Ain Shams University to the Director

of out patients' burn clinics at El-demerdash hospital Ain Shams University Hospitals in which the study was conducted to obtain their approval and assistance in conducting the study. Purpose of the study was explained to the head nurse of the departments of the hospitals under the study.

Ethical considerations:

Purpose and expected outcomes of the study were explained to each study subject. They were secured that all the gathered data was used for the research purpose only, the study is harmless and their approval to participate is a prerequisite to be included in the study. Each subject was assured that they can quit/withdraw whenever they want.

Statistical Design

The collected data were organized, categorized, tabulated and statistically analysed using the Statistical Package for Social Science (SPSS), version 15. Data were presented in tables and charts using numbers and percentages. The statistical analysis included percentage, mean and standard deviation (SD), Chi-square (X^2).

Significance of results was described as follows:

- Non-significant (NS) difference at $p > 0.05$.
- Significant (S) difference at $P < 0.05$.
- Highly significant (HS) difference at $P < 0.001$.

Results:

Table 1. Shows the distribution of socio-demographic characteristics among patients included in the study. The mean age of them was 42.5 ± 9.57 and 52% of them were

females. 35% of them had secondary education, 47% of them were housewives, 75 % of them resident in rural area and married. While, 97 % of the studied patients hadn't health insurance, 94% of them were lived with their family and 97% of them their monthly income was insufficient for the treatment cost.

Table 2. Shows that 80% of the studied patients didn't suffering from any chronic diseases. Regarding the burn characteristics , there were 66% of the studied patients had flame burn and 31% of them had scald burn, 75% of them had burn in the extremities and 16% of them in the face and neck and 98% had surface area burned from 30-<50. While, 80% of the studied patients had received skin graft. While, 85% had taken drugs and 40% of the studied patients had contractures and 45% had hypertrophic scars.

Table 3. Reveals that the studied patients had unsatisfactory level of knowledge regarding the anatomy and physiology of the skin, the characteristics of the burn, the complications of the burn and the first aid for the burn injury (87%, 80%, 70%, 79%) respectively.

According to the findings in **Table 4** it could be observed that the poor domains of the quality of life scores were seen in heat sensitivity, work, affect and body image domains (81%,70%,62%,47%) respectively. On the other hand, the most average scores were seen in interpersonal relationship and sexuality and treatment regimens domains (67%, 65%, 60%) respectively.

Table 5. Reveals that, there were statistically significant relations between the patient's quality of life and their age, gender, educational level and occupation. On the other hand, there were statistically insignificant relations between the patients` quality of life and residence, marital status, health insurance, living with and income.

Table 6. Reveals that there was a high statistical significant relation between the QOL and site of burn at p. 0, 0 while there was statistical significant relation between QOL and total body surface area at p. 0.032, depth at p. 0.032, skin graft at p.0.018, the treatment at p. 0.012 and local complications at p.0.017.

Quality Of life Among Patients with Burns

Table1. Number and percentage distribution of the Socio-demographic characteristics of the studied patients. (n=100).

Items	N0	%
Gender		
Male	48	48%
Female	52	52%
Age		
20-<30	18	18%
30-<40	72	72%
40-<50	6	6%
>50	4	4%
Mean \pmSD	42.5 \pm 9.57	
Educational level		
Illiterate	23	23%
Read and Write	25	25%
secondary education	35	35%
Higher education	17	17%
Occupation		
Employee	2	2%
Manual work	37	37%
Does not work	14	14%
House wife	47	47%
Residence:-		
Urban	25	25%
Rural	75	75%
Marital status		
Single	17	17%
Married.	75	75%
Widow.	8	8%
Health insurance		
Yes	3	3%
No	97	97%
live with		
Alone	6	6%
With family	94	94%
Income		
less than enough	97	97%
Enough	3	3%

Table 2: Number and percentage distribution of the studied patients regarding the medical history and burn characteristics among the studied patients. (n=100).

Items	No	%
1-The medical history		
Presence of chronic diseases:		
Hypertension	10	10%
Diabetes	5	5%
None	85	85%
2-Burn characteristics		
Causes of burn:		
Scald	31	31%
Flame	66	66%
Electrical	1	1%
Chemicals	2	2%
Site:		
Face and neck	16	16%
Trunk	9	9%
Extremities	75	75%
Surface area (%):		
30-<50.	98	98%
50-<90.	2	2%
Skin graft:		
Skin graft	80	80%
Other treatment	20	20%
Treatment:		
Conservative	15	15%
Drugs	85	85%
Local complications:		
Contractures	40	40%
Keloids	5	5%
Hypertrophic scars	45	45%
Nothing	10	10%

Quality Of life Among Patients with Burns

Table 3: Number and percentage distribution of patients' level of knowledge regarding burn injury. (n=100).

Items	Satisfactory		Unsatisfactory	
	NO	%	NO	%
The anatomy and physiology of the skin	13	13%	87	87%
The characteristics of the burn injury	20	20%	80	80%
The complications of the burn	30	30 %	70	70%
The first aid	21	21%	79	79 %
Total	37	37%	63	63%

Table4: Distribution of the total quality of life domains among the study patients. (n=100).

Quality of life	Good		Average		Poor		Mean	SD	Range
	NO	%	NO	%	NO	%			
1-Simple Abilities	17	%17	39	39%	44	%44	4.2	3.3	0 – 9
2- Hand function	17	%17	39	%39	44	%44	5.9	4.2	0-12
3-Affect	11	%11	%27	%27	62	%62	5.8	7.2	0-20
4-Body image	15	%15	38	%38	47	%47	11.6	5.4	0 - 21
5-sexual(n=75).	11	%15	49	%65	15	%20	8.7	2.4	0- 12
6-Interpersonal relationships	31	31%	67	67%	2	%2	11.4	2.8	0-15
7- Heat sensitivity	18	%18	1	%1	81	81%	2.2	4.7	0-12
8-Treatment regimens	20	20%	60	60%	20	20%	9.0	4.9	0-15
9-Work (n=84).	8	%10	17	%20	59	%70	2.3	3.2	0-9

Table5-Relation between total patients` quality of life and socio-demographic characteristics among the study patients. (n=100).

Item	Quality of life						X ² test	
	Good		Average		poor		X ²	P
	No	%	No	%	No	%		
Age								
20-<30	17	17%	1	1%	1	1%	7.766	0.045*
30-<40	64	64%	6	6%	2	2%		
40-<50	4	4%	1	1%	1	1%		
>50	1	1%	1	1%	1	1%		
Gender								
Male	46	46%	1	1%	1	1%	7.6987	0.0447*
Female	2	2%	7	7%	43	43%		
Educational level								
Illiterate	1	1%	2	2%	10	10%	7.982	0.00521*
Read and Write	29	29%	4	4%	2	2%		
secondary education	33	33%	1	1%	1	1%		
Higher education	14	14%	2	2%	1	1%		
Occupation								
Employee	2	2%	0	0%	0	0%	7.681	0.048038*
Manual work	0	0%	2	2%	35	35%		
Does not work	0	0%	1	1%	13	13%		
House wife	1	1%	8	8%	38	38%		
Residence								
Rural area	65	65%	5	5%	5	5%	0.029	0.863693
Urban area	22	22%	2	2%	1	1%		
Marital status								
Single	17	17%	0	0%	0	0%	4.981	0.082875
Married	62	62%	11	11%	2	2%		
Widow	8	8%	0	0%	0	0%		
Health insurance								
Yes	1	1%	1	1%	1	1%	0.576	0.395
No	86	86%	9	9%	2	2%		
live with								
Alone	6	6%	0	0%	0	0%	0.954	0.328759
With family	81	81%	10	10%	3	3%		
Family income								
Insufficient	84	84%	0	0%	3	3%	0.462	0.497
Sufficient	3	3%	0	0%	0	0%		

Quality Of life Among Patients with Burns

Table 6: Relation between the medical history, burn characteristics and patients` quality of life.

Item	Quality of life						X ² test	
	Good		Average		Poor		X ²	P
	No	%	No	%	No	%		
The medical history								
Presence of chronic diseases:								
Hypertension	7	7%	2	2%	1	1%	3.421	0.212
Diabetes	2	2%	2	2%	1	1%		
None	15	15%	40	40%	30	30%		
The burn characteristics								
Cause:								
Scald.	22	22%	0	0	1	1%	3.321	0.232
Flame	6	6%	9	9%	60	60%		
Site:								
Face and neck	8	8%	8	8%	16	16%	18.2	0**
Trunk.	14	14%	1	1%	1	1%		
Extremities	5	5%	70	70%	64	64%		
Surface area (%)								
30-<50.	2	2%	10	10%	86	86%	6.9	0.032*
Skin graft								
Skin graft	50	50%	20	20%	10	10%	3.541	0.018*
Other treatment	15	15%	5	5%	0	0%		
Conservative	8	8%	5	5%	2	2%		
Drugs	60	60%	20	20%	5	5%	3.454	0.012*
Local complications								
Contractures	5	5%	5	5%	30	30%	3.221	0.017*
Keloids	3	3%	2	2%	1	1%		
Hypertrophic scars	3	3%	2	2%	40	40%		

> 0.05 nonsignificant *≤ 0.05 significant **≤ 0.01 highly significant

Discussion

Part I: Socio-demographic characteristics.

Regarding the studied patient's socio-demographic characteristics, the findings of the present study had revealed that as regards the age the current study showed that about three quarters of the studied patients' ages were between the age of thirty to less than forty years old; this might be due to this age group in which the persons can perform multiple tasks leading to increase the risk of burn injuries; This result is consistent with **Tang, et al. (2016)**, who stated in research titled "Predictors of functional independence, quality of life, and return to work in patients with burn injuries in mainland China", in china, that the most of the studied patients ages around the age of forty years old.

As regard the gender, the results indicated that, more than half of the studied patients were female; this might be due to the longer of duration females spent in cooking, or inherently unsafe cook stove, which can ignite loose clothing; these results are consistent with **WHO (2017)**, who stated that; Females have slightly higher rates of burn injury compared to males according to the most recent data.

As regard marital status of the studied patients, three quarter of them were married; This could be due to the new responsibilities of the women after marriage and their less experience in kitchen; This finding is in the same line with what was reported by **Cromes, Hovalanahalli, Kowalske and Helm (2017)**, who stated in research titled " Predictors of quality of life as measured by burn specific health scale in person with burn injury", in Australia, found that ,the majority of the studied patients with burns were married.

Regarding educational level among studied patients more than one third of them were secondary; that might be related to their intend to improve their income. This finding is inconsistent with **Edgar (2015)**, who stated in research titled " Demonstration of the validity of the SF-36 for measurement of the temporal recovery of quality of life outcomes in burns survivors" in Australia, that the numbers of burn victims didn't completed their education to enter the university.

As regards occupation of the studied patients, less than half of the studied patients were housewives; this might be due to more than half of the studied patients were females and most of them the educational level were secondary; this finding is in the same line with what was reported by **Cromes, et al. (2017)**, who found that the majority of the studied patients with burns were housewives.

As regard the persons that the patients living with, the majority of the studied patients were living with their families; this might be due to the three quarters of the studied patients were married; this finding is consistent with **Salvador-Sanz, Sanchez-Payá, and Rodriguez-Marín (2017)**, who stated in research titled "Quality of life of the Spanish burn patient" in Spain the majority of them were living with their families.

As regard health insurance, almost of the studied patients hadn't health insurance and resorted to treatment by government expense; This could be due to the highest percentage of the studied patients were housewives didn't related to the government health insurance that include mainly the government employees, so this patients found in the universities hospitals the best place for treatment because they provide the treatment for free for those patients; This finding is contradict with **Salvador-Sanz, J. F., Sanchez-Payá, J., and Rodriguez-Marín, J. (2017)**, who stated that the majority of the

Quality Of life Among Patients with Burns

studied patients had health insurance and resorted to treatment at health insurance

As regard residence, the current study showed that, three quarters of studied patients' residence was in rural area, this finding is consistent with **Yoder, Nayback and Gaylord (2016)**, who stated in research titled "the evolution and utility of the burn specific health scale: a systematic review", in Canada that the majority of the studied patient residence in rural area.

As regards to the income the current study showed that, the majority of the studied patients their income insufficient; this might be due to the nature of the work of the most of the studied patients as housewives or technicians; this finding is consistent with **Noble, Gomez and Feish (2016)**, who stated in research titled "Quality of life and return to work following electrical burns". In Australia that majority of the studied patients were had an insufficient monthly income.

Part II: This part concerned with the medical history and burn characteristics of the studied patients.

As regard to the presence of chronic diseases, the current study showed that, the majority of the studied patient weren't suffer from the chronic diseases. This finding is consistent with **Mores and Melan (2017)**, who stated in research titled "Quality of life as measured by burn specific health scale brief in patients with burn injury" in Australia, that in their study, it was observed that most patients with burns weren't suffer from chronic diseases.

As regards to the cause of the burn injury, the current study showed that, about two thirds of the studied patients' were affected by flame as a cause of the burn injury; This might be due to careless handling of gas pipes without safety features; This finding is consistent with **The American Burn**

Association (2017), which reported that the flame burns predominate in all patients.

As regard to the site of the burn injury, the current study showed that, the extremities were the major site affected; this might be due to the most body parts involved in performing the tasks were the extremities; This finding is consistent with **Mores and Melan (2017)**, who stated in research titled "Quality of life as measured by burn specific health scale brief in patients with burn injury" in Australia, that in their study, it was observed that patients had more percentage of burn injury, mostly involving face and extremities.

As regard to the total body surface area (**TBSA**) of the burn injury the current study showed that, the majority of the studied patients with TBSA of the burn injury was from thirty to less than fifty percent; This could be due to the second and third degree of the burn patients tend to follow up in the outpatients clinics to decreased the scars and prevent the contractures of joint and start rehabilitations; This finding is consistent with **Wood and Findally (2017)**, who stated in research titled "Demonstration of the validity of the BSHS-B for measurement of the quality of life outcomes in burns survivors. " in Australia that the almost of the studied patients the TBSA of the burn injury was from thirty to less than fifty of TBSA.

As regard to the skin graft of the burn injury, the current study showed that the majority of the studied patients had skin grafting. This could be due to the second and third degree of the burn patients their treatment mainly the surgical graft to promote the management of the burn injury and restore the QOL. This finding is consistent with **Wood and Findally (2017)**, who stated in research titled "Demonstration of the validity of the BSHS-B for measurement of the quality of life outcomes in burns survivors. " in Australia that the almost of the patients with burns the first line of treatment is grafting.

As regard to the treatment of the burn injury, the majority of the studied patients had received drugs for treatment. This finding is consistent with **Wood and Findally (2017)**, who stated in research titled "Demonstration of the validity of the BSHS-B for measurement of the quality of life outcomes in burns survivors." in Australia that the almost of the patients with burns the needs drugs for their burn injury.

As regard to the local complication, less than one half of the patients had contractures and hypertrophic scars. These findings were supported by **Jasper, Berge and Dales (2016)**, who stated in research titled "Core outcomes for adult burn survivors". That the majority of the studied patients post burns suffer from joint contractures and hypertrophic scars.

Part III: This part concerns with patients level of knowledge regarding burn.

The current study revealed that regarding the total patients' level of knowledge there were less than two thirds of the studied patients had unsatisfactory level of knowledge; This finding might be associated strongly by the educational level of the studied patients because the minority of the patients had high level of education and the majority of the patients ranged from illiterate to secondary level; this finding is consistent with **Morten (2014)**, who stated in research titled "Perceived Physical and Psychological Outcome After Severe Burn Injury Stressful life events and burn injuries", in south Africa that whose research findings indicated that the minority of the studied patients had satisfactory level of knowledge related to the burn injury.

This findings were contradicted with **Stampolidis, et al., (2016)**, who stated in research titled "Quality of life in burn patients in Greece" in Greece that almost of their

studied patients had satisfactory level of knowledge regarding the burn injury.

Part VI: This part concerns with assessment of quality of Life among patients with burns.

Regarding the total QOL items among the studied patients, the present study had portrayed that more than two thirds of the studied patients had poor QOL. These findings were supported by **Jasper, Berge and Dales (2016)**, who stated in research titled "Core outcomes for adult burn survivors". That the majority of the studied patients had poor QOL; this finding was supported also by **Acar and Yenize (2016)**, who stated in research titled " Burn rehabilitation: an overview." That most patients with burn injury their QOL become poor after the burn injury due to its bad effect on all the dimensions of the QOL.

As regard the distribution of total QOL domains among the study patients, the current study showed that poor domains of the QOL scores were seen in heat sensitivity, work, Affect and body image domains. While the most average scores of the QOL were seen in interpersonal relationship, sexuality, and treatment regimens. This might be justified by the fact that Egyptian culture and family values provide support for persons with trauma or disability. Egyptians are reluctant and embarrassed to speak about sexuality; hence, the scores of QOL related to social relations are good.

These findings were supported by **Kildal, Andresson and Gerdin. (2014)**, who stated in research titled " Health status in Swedish burn patients. Assessment and utilizing three variants of the Burn Specific Health Scale". in Swedish , examined the health status in Swedish burn patients and found that the greatest poor domain of quality of life and negative impact on health and therapy that were seen in the domains of heat

Quality Of life Among Patients with Burns

sensitivity, work, affect and body image domains .

This is also rather similar to **Pope and Solomons (2016)**, who stated in research titled" Body image, mood and quality of life in young burn survivors ", in Australia that the stress of the burns occasionally precipitates a psychological crisis, and physical appearance will be altered and self-esteem is usually adversely affected in the patient, who has sustained a major burn. Furthermore, the present study has showed that interpersonal relationships, sexuality and treatment regimens domains have the greatest average score QOL.

These results contradicted with **Wikehult et al. (2015)**, who stated in research titled" Use of healthcare a long time after severe burn injury; relation to perceived health and personality characteristics", in Australia that patients had significantly poor domains of QOL and negative impact on health and therapy that were seen in the three BSHS-B-domains: simple abilities, work and hand function.

These results contradict with **Connell and Coates (2014)** who stated in research titled " Sexuality, body image and relationships following burns: analysis of BSHS-B outcome measures" in Italy that burn survivors experience sexuality, body image and relationship changes following a burn, which they were the most prominent domains that affect their QOL over time.

Part V: The relation between socio-demographic characteristics, knowledge, medical history and burn characteristics and total patients` quality of life.

Relation between total patients' quality of life and socio-demographic characteristics among the study patients.

According to the relation between gender and QOL domains, the current study indicates that the gender of the patients with burns is significantly associated with the patient's Quality of life; this result could be due to women suffer more intensely than men from the stigma resulting from a burn given that they value more highly their physical appearance; this finding was supported by **Fauerbach, Lawrence, Haythornthwaite, McGuire and Munster (2015)**, who stated in research titled" Preinjury psychiatric illness and post injury adjustment in adult burn survivors", in Canada, that with reference to gender, the results speak favorably of poor QOL particularly for women it seems to physical dysfunction and body image more than burn size or location; this finding is in the same line with what was reported by **Salvador-Sanz, et al. (2017)**, who found that the majority of the studied patients with poor quality of life were female and more than half of them housewife. A serious body image alteration is caused by deep burns and face burns which need skin grafts, particularly in the female, and consequently affect the QOL.

As for the relation between age and QOL, there is statistical significant relation between age and the quality of life; this might be due to about three quarters of the studied patients their ages were less than forty years old and patients in these ages had definite goals and aspirations and they recognize the need for self-understanding, independence, and ability, as well as the support of others and the environment for them to be self-determined and enjoy good present and future QOL; this finding agrees with **Pope and Solomons (2016)**, who stated in research titled" Body image, mood and quality of life in young burn survivors ", in Australia that the young burn survivors appear to be coping well in comparison to their peers, and, in some areas, they may be coping better, in spite of living with the physical, psychological and social consequences of burns These findings

were supported by **Salvador-Sanz, et al. (2017)**, who stated that there was obvious difference in the QOL among patients of different ages.

Regarding the level of education and QOL, the present study has indicated that there is a statistical significant relation between level of education and the QOL with poor QOL showed in illiterate patients as compared with those with other educational levels. It can be interpreted that patients with lower educational level especially illiterate patients do not have any background information about burns, complications and first aid. Indeed, they may think that there is no solution to their injury; hence, lifelong quality of life decreased; this could be due to the education has become one of the clearest indicators of life outcomes such as employment, income and social status, and is a strong predictor of attitudes, wellbeing, good QOL; this result is similar with **Stampolidis et al., (2016)**, who stated in research titled "Quality of life in burn patients in Greece" in Greece commented that there was obvious difference in QOL among patients with different educational backgrounds.

Concerning the relation between occupation and QOL, the present study had indicated that there was a statistical significant relation between the occupation and the quality of life and it was illustrated that poor QOL showed with patients who did not work after burns; this was in accordance with the findings of **Stampolidis et al., (2016)**, who proved that patients who didn't work had poorer QOL, and more symptoms of posttraumatic stress disorder.

It was observed in the current study that there were no statistically significant relation between patients' residence, number of rooms, marital status, health insurance, the persons that the patients living with, income and QOL. Although the burn itself might be

declines the quality of life of the person by limiting patient's body functions.

Concerning the relation between the presence of chronic diseases among the patients with burns and QOL. The present study finding indicates that, there wasn't statistical significant relation between the presence of chronic diseases among the patients with burns and QOL. This might be due to the minority of the studied patients their age above fifty years old; and as we know that, the ageing of the population results in an increasing number of people living with chronic diseases that can adversely affect their quality of life.

his finding was consistent as well with **A biser and Morse(2017)** who stated in research titled "Quality-of-life measures in chronic diseases with burn survivors" in England, that the patients with burns and suffer from chronic diseases their QOL are severally diminished. Assessing and monitoring the quality of life of individuals suffering from a chronic disease are important in the planning of intervention strategies, given that it provides relevant information on the patient, enabling the identification of his/her priorities and subsidizing health programs towards the implementation of effective action and, therefore, offer a better QOL.

Concerning the relation between the sites of the burn injury and quality of life. The present study findings indicate that there was highly statistical significant relation between the sites of the burn injury and the quality of life domains. Poor and lower health-related QOL observed in patients with burns in extremities; this might be due to the role of the extremities in performing the duties; these findings were consistent as well with **Berrin et al., (2016)**, who stated in research titled:" Quality of life after burn injury: the impact of joint contracture" in Australia who found that the site of the burn injury is correlated with psychosocial problems and poorer QOL.

Concerning the relation between the TBSA of the burn injury and QOL. The present study

Quality Of life Among Patients with Burns

finding indicated that there was statistical significant relation between the TBSA of the burn injury and quality of life; this could be due to the QOL was influenced by consequences of injury both in psychological and physical health in patients with burns exceeding 30 % of TBSA due to the most common problems include the formation of hypertrophic scars, joint contractures, motor dysfunctions (such as loss of muscle strength, range of motion, coordination, and walking abilities), sensory disturbances (hypersensitivity, pain, itching, and loss of sensation), barriers to the activities of daily living (ADL), social problems, and psychological disturbances.

Ultimately, the QOL and functional outcomes of burn survivors can be severely affected. Patients may experience negative effects in almost all aspects of their daily functions, physical health, and psychological well-being; this result was congruent with **Stampolidis et al., (2016)**, who stated that there were Poor and lower health-related QOL for patients with TBSA exceeding 30% TBSA.

Concerning the relation between the skin graft of the burn injury and QOL. The present study finding indicate that there was statistical significant relation between the treatment of the burn injury and QOL. These findings were consistent as well with **Berrin et al., (2016)**, who stated in research titled: "Quality of life after burn injury: the impact of joint contracture" in Australia, that there were statistical significant relation between the treatment of the burn injury and QOL for patients with burn injury.

Concerning the relation between the skin graft of the burn injury and QOL. The present study finding indicate that there was statistical significant relation between the treatment of the burn injury and QOL. These findings were consistent as well with **Berrin et al., (2016)**, who stated in research titled: "Quality of life after burn injury: the impact of joint contracture" in Australia, that there were statistical significant relation between the treatment of the burn injury and QOL for patients with burn injury.

Concerning the relation between the treatment of the burn injury and QOL. The present

study finding indicate that there was statistical significant relation between the treatment of the burn injury and QOL. These findings were consistent as well with **Abiser and Morseand Melan (2017)**, who stated in research titled "Quality-of-life measures in chronic diseases with burn survivors" in England, that there were statistical significant relation between the treatment of the burn injury and QOL for patients with burn injury.

Concerning the relation between the local complications of the burn injury and QOL. The present study finding indicate that there was statistical significant difference between the local complications of the burn injury and QOL. This is in accordance with the findings of **Stampolidis et al., (2016)**, who stated that there was a statistical significant relation between the local complications of the burn injury and the QOL.

Conclusion

Based on findings of the present study, it can be concluded that:

About two thirds of the studied patients had unsatisfactory knowledge. While regarding the quality of life, the study has indicated that more than two thirds of the studied patients had poor QOL and their quality of life is affected negatively in all dimensions. In addition, the greatest poor domains of the quality of life were seen in heat sensitivity, work, Affect and body image domains.

Recommendations

Based on the results of the current research, the following suggestions for future research and practice are proposed:

I-In research:

1-Further research studies are needed to focus on studying factors affecting QOL for patients with burn.

2-Replication of the current study on a larger probability sample is recommended to achieve generalization of the results.

II-In services:

- 1-Health education programs about disease and its treatment modalities should be provided for patients with burns using new methods of teaching such as computer assisted instructions and home videos to give a better quality of life for patients with burns.
- 2- The quality of life for people who have sustained burns should be recognized and valued by the burn team in all phases of burn care.

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