

ASSESSMENT OF NURSES' KNOWLEDGE TOWARDS MANAGEMENT OF PATIENTS WITH BURN IN DUHOK CITY

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ABSTRACT

Introduction: Burn has always been considered one of the most destructive injuries causing major economic physiological impacts. The nurse plays an important role in the overall management of a burn patient. The nurse's knowledge of the management of burn patient was explored in this study.

Methods : In a cross-sectional study, a total of 37 nurses with different educational level and experience in nursing were included. The nurses were recruited from the Burn Hospital in Duhok City.

Results : The study revealed that most of the nurses were males (62.2%) and were in 30-39 years old (52.8%). Most of the subjects had secondary school , institute level of education and between 1-10 years of experience (75.7%). Secondary School

The study revealed that most of the nurses had presented correct answers on burn management of a patient. The percentage of the nurses who gave the correct answer on shock and monitor edema were low (51.4% and 62.2%, respectively).

Conclusion: The present study revealed that most of the nurses have correct answers on burn management patients.

KEYWORD: Nurses, Burn Management, Knowledge, Injury

INTRODUCTION

Injuries are a growing public health problem, substantially affecting nearly every population and every geographical zone in the world. Burns have always been considered as one of the most destructive injuries, causing not only mortalities but also major economic and psychological impacts and long-term somatic sequels as well [1, 2]. Burn is a type of injury to the skin caused by heat, electricity, chemicals, friction, or radiation [3, 4].

The nurses play an important role in the overall management of a burn patient. They must be well versed with the various protocols available that can be used to rationally manage a given situation. The management not only involves medical care but also a psychological assessment of the victim and the family [5].

Worldwide, an estimated 6 million people seek medical treatment for burns annually, but most are treated in outpatient clinics. In low- and middle-income countries (LMICs), burn injuries are an indomitable problem, and much more

common than in the USA and Europe or other high income developed countries. However, the exact number of burns in LMICs is difficult to determine. A conservative estimate puts the number of people admitted to hospital with burns in India at some 700,000 to 800,000 each year [4].

Infants in the WHO African Region have three times the incidence of burn deaths of infants worldwide. Boys under 5 years living in LMICs of the WHO Eastern Mediterranean Region are almost twice as likely to die from burns as boys living in LMICs of the WHO European Region. The incidence of burn injuries requiring medical care is nearly 20 times higher in the WHO Western Pacific Region than in the WHO Region of the Americas [4].

A study found in this regard focused on the assessment of nurses' knowledge regarding nursing care for patients with burn conducted by Mussa and Abass [6] in Azadi Teaching hospital/Kirkuk City and Western Emergency hospital/Erbil City. They understood that nurses' knowledge of the burn and nursing care

are moderate adequate in Azadi hospital and adequate in Western Emergency hospital and with respect complications' knowledge, both of them had adequate knowledge.

A similar cross-sectional study was conducted by AL-Sudani and Ali [7] in nurses worked at non-teaching hospitals in Baghdad city between November 2011 and April 2012 to determine the nursing care quality provide to the pediatric patients with a burn. The study showed that 37.1% and 25.7% of nurses had good and poor practices, respectively toward skin care of burn pediatric patients. They could not find any association between the socio-demographic characteristics and clinical practices of nurses.

Burns is the eleventh most common cause of death in children aged 1–9 years and the fifth most common cause of non-fatal childhood injuries [4]. The nurses comprise the crucial and mainstay of the patient's management and care in clinical settings in particular with respect to burn patients. The nurses' knowledge and understanding of different clinical, medical, and preventive aspects of burn have an important effect on overall patients' management and infection prevention. It is invaluable to take a focus on the nurses' level of knowledge on patients with burn as improvement strategies of clinical management and health promotion. Moreover, there is paucity in this perspective in this region.

Objectives:

Objectives of the current study is to assess the knowledge of nurses working in Burn and Plastic Surgery Hospital in Duhok city towards the management of patients with a burn. The study attempted to find out the level of nurses' knowledge in association with experience and training course.

METHODS

Study Design and sampling:

In the present cross-sectional study, the nurses presenting the nursing services to the burn patients and working at Burn and Plastic Surgery Hospital in Duhok city were include in the study. The nurses had different education level and experience in nursing and worked in different clinical departments and shifts at the hospital. The nurses were invited into the present study through convenience sampling.

The nurses were invited into the present study irrespective of age, gender, and other socio-

demographic aspects. The subjects who were not available during data collection were called two times for the study purposes. Of the total 45 nurses working in the hospital, 37 of them participated in the study giving the response rate of 82.22%.Theother 8 nurses they refused to share because they haven't time to complete the questionnaire

A semi-structured questionnaire was designed through searching in the literature and the consultation with two experts in nursing studies. The questionnaire was prepared by the investigators and the information was taken through self-reported technique (direct interview).

Data collection and measurement

The questionnaire had three parts as follows:

Part A: This part was devoted to demographic characteristics. The information was taken from the nurses in this part was age, gender, residence (urban/rural), education level categorized as primary school, high school, institute, and college graduate, marital status categorized as single, married, divorced, and widow.

Part B: This part had some questions about the nurses' experience in nursing filed and their training courses. The experience of the nurses was categorized as the 1-4 week, 1-11 months, 1-10 years, and 11-20 years. The training courses were fundamentals of nursing, infection control, psychology support, and first aid.

Part C: This part assessed the knowledge of the nurses on different nursing aspects of the patients with burn. The knowledge was assessed as correct or incorrect. The number of correct answers towards the questions on burn patient care was considered the nurse level of knowledge. The total questions of the knowledge were 26, hence, the nurse knowledge was ranged between 0 and 26.

Statistical analysis:

The information of the study was presented as frequency and percentage. The level of nurses' knowledge in association with experience and training course was examined in ANOVA-One Way and independent t-test, respectively. The P-value of less than 0.05 was considered for a statistically significant difference. The Statistical Package for Social Sciences Version 25:00 (SPSS 25:00 IBM) will be used for the data analysis.

Ethical Considerations:

The scientific approval of the present study was taken from the Scientific Committee approval of the College of Nursing. The nurses included in the study were guaranteed the confidentiality of their personal information in the time of dissemination and publication. The current study has no harm to the participant.

RESULTS

The findings of the study showed that most of the nurses were male (62.2%) and were in age group of 30-39 years old (52.8%), and from urban areas (94.4%). In addition, the highest parentage of the nurses level of education is divided equally on both secondary school and institute and the majority were married (83.8%) (Table 1).

Table (1): Baseline characteristic of nurses in Duhok Burn Hospital

Participant's Characteristics	Frequency Distribution	
	Frequency	Percentage
Gender		
Male	23	62.2
Female	14	37.8
Age Groups		
20-29 years old	13	36.1
30-39 years old	19	52.8
40-49 years old	4	11.1
50 year and older	0	0.0
Residency		
Urban	34	94.4
Rural	2	5.6
Education Level		
Primary School	3	8.1
Secondary School	15	40.5
Institute	15	40.5
College	4	10.8
Marital Status		
Single	6	16.2
Married	31	83.8

The study found that the majority of the nurses had experience in burn care department between 1 and 10 years (75.7%) followed by between 11 and 20 years (13.5%). They reported that most of them had completed

the training courses in nursing field (81.1%), including fundamentals of nursing (64.9%), psychology support (29.7%), and infection control (27.0%) (Table 2).

Table (2): Training courses and experiences of nurses in burn injuries

Training courses and experiences	Frequency Distribution	
	Frequency	Percentage
Experience Duration in Burn injuries		
1-4 weeks	2	5.4
1-11 months	0	0.0
1-10 years	28	75.7
11-20 years	5	13.5
21-30 years	2	5.4
Training courses in care of burn patient		
Fundamentals of Nursing	24	64.9
Infection Control	10	27.0
Psychology Support	11	29.7
First Aid	13	35.1
Training Courses		
Yes	30	81.1
No	7	18.9

The knowledge of the nurses towards the burn injuries was presented in Table 3. The study showed that the nurses answered correctly the majority of the questions related to the nursing care for burn patients. The few nurses

answered correctly whether to secure airway by change position or secure airway by endotracheal tube (37.8%) and use open method for wound care (32.4%) (Table 3).

Table (3): Knowledge of nurses towards specific burn-based statements

Statements about burn knowledge	Frequency Distribution	
	Frequency	Percentage
The first degree of burn: superficial thickness burn	32	86.5
The second degree of burn: Partial thickness and deep partial thickness burn	32	86.5
The third degree of burn: full deep thickness burn	35	94.6
Fourth degree: Full thickness burn to extends into muscle and bone	33	89.2
Types of burn: thermal, chemical, electrical and radiation	33	89.2
The flame burns the most common causes of burn	25	67.6
Secure airway by change position or secure airway by endotracheal tube	14	37.8
Keep the client comfortable with analgesics	29	78.4
Check vital signs hourly for new admission	26	70.3
Support circulation by fluid replacement (Parkland Formula)	26	70.3
Know to enumerate role of nine	28	75.7
Shock is a common cause of death in the emergent phase in clients with serious injuries	19	51.4
Monitor for edema, measure central and peripheral pulses, blood pressure	23	62.2
Assess the skin to determine the size and depth of burn injury	32	86.5
hand wash before and after dressing	37	100
silver sulfadiazine (flamazine) most common topical antibiotic used to the burn patients	32	86.5
prevent contractures by taking care of the skin during dressing	30	81.1
for burn patients wound care is better to use the open method	12	32.4

infection is the highest risk of burn	36	97.3
prevent infection through use aseptic technique during dressing or wound care	30	81.1
changes in renal function are related to decreased renal blood flow	21	56.8
rehabilitation phase from wound closure to an optimal level of physical and psychological adjustment	26	67.6
perform a detailed neurologic exam for electric injuries	29	78.4
The patient burn should be taken tetanus prophylaxis.	32	68.5
Start IV fluid and phase Foley's to monitor urine output.	35	94.6
Full-thickness will most likely need excision & skin grafting to heal.	33	89.2

The number of correct answers to the burning knowledge of nurses with different experiences and training courses was examined in Table 4. The study did not show a significant difference in the number of correct answers in nurses with

various experiences ($P=0.283$). In addition, the number of correct answers between those attended a training course and those did not was statistically significant ($P=0.550$).

Table (4): Number of correct answers in nurses with different experiences and training course

Training courses and experiences	Correct Answers			P-Value (Two-Sided)
	Frequency	Mean	Standard Deviation	
Experience Duration in Burn injuries				0.283
1-4 weeks	2	22.5	0.71	ANOVA-One Way
1-11 months	0	0.0		
1-10 years	28	19.0	3.95	
11-20 years	5	22.0	2.70	
21-30 years	2	19.0	2.82	
Training courses in burn injuries				0.550
Yes	30	20.23	3.86	Independent t-test
No	7	19.29	3.59	

DISCUSSION

The majority of nurses participated in the present investigation answered correctly to most of the questions regarding the burn patients' care. The percentage of the nurses approved that they must monitor for edema, measure central and peripheral pulses, and blood pressure was low (51.4%). In addition, the low percentage of nurses (62.2%) confirmed that shock is a common cause of death in the emergent phase in clients with serious injuries.

El-Sayed and Gomaa et al [8] explored the nurses' knowledge and practice about prevention of infection in a burn hospital in Egypt. The authors reported that most of the nurses (90%) have a satisfactory level of knowledge about burn care (75%), whereas they had an unsatisfactory level of practice (<85%) about infection control measures. They found a

moderate positive correlation between knowledge, practice and environmental cleaning. Majority of the nurses participated in our study mentioned that infection is the highest risk in burn patients (97.3%).

The nurses working in different settings across the Duhok city have various knowledge level towards burn patients. For example, Lam and Huong et al [9] conducted a survey among 353 nurses of emergency and trauma department at a district in Vietnam. The investigators asked about first aid and initial care for a patient with burn injuries. They found that only 15.3% of the participants answered correctly over 50% of the items. The average percentage of correct answers was 39.7%. More than half of them (53.6%) recognized that oral fluid resuscitation is an appropriate method for cases of mass burn injuries and 44.6% of them declared that pre-transportation intubation is required for the

patients with suspected inhalation injury. While a small percentage presented the correct answer about burn triage (5.4% only). In line with the literature, they found a significantly higher level of knowledge in those nurses who had attended training courses.

It must be taken into account that nurses have a key role in the overall management of burn patients. They should be well and sufficiently trained for the management of emergent burn cases. Also, it is required to find out that management of a burn patient does not involve medical care only, but the psychological assessment of the victim and the family is important because the optimal care of burn patient needs a distinctly multidisciplinary approach [10]. The positive patient outcomes depend on the composition of the burn care team and collaboration among their members.

However, the literature mentions that the nurses' knowledge of management of burn cases is not sufficient. As an example, Meschial and de Oliveira [11] reported that only 22.4% of the sample population of nurses have sufficient knowledge on the care of burn victims in Brazil. Therefore, the health settings require appropriate strategies to promote the knowledge of this important medical staff.

CONCLUSIONS AND RECOMMENDATIONS

The present study found that the majority of the nurses have the correct information about different aspects of burn patient management.

Despite we found the higher percentage of the nurses have the correct answers on different aspects of burn case management, but, it is required that these nurses be observed for the correct practice for the next attempts. The nurses are required to be educated for different perspectives of care of burn patients.

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