

# A Study to Assess nurses' Knowledge regarding Aseptic Technique in Managing Burn Patients in Teaching Hospitals at Mosul city

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## Abstract

**Background and aim:** Burn wound infections are regarded as the most common complication, owing to failure to use aseptic techniques during burns wound care. The study aimed to assess nurses' knowledge regarding aseptic technique in managing burn patients at teaching hospitals in Mosul city.

**Methodology:** The descriptive design was used to select a purposive sample of (60) nurses from the teaching hospitals. The tool is made up of two parts: one represents demographic characteristics and the other assess nurses' knowledge regarding aseptic technique. Part two questions are denoted by (0) for the incorrect answer and (1) for the correct answer. Statistical Package for the Social Science (SPSS, Version 24) by using descriptive statistics, and inferential statistical methods. The data significant at P. value  $\geq 0.05$ .

**Results:** The results age group (26-30) years were(41.7%), and gender (51.7%) of male nurses. Most nurses have secondary school graduated (60.0%), and half of the nurses have (1-5 years) experience in nursing was (50.0%). More than half of nurses have average knowledge (58.3%), whereas there was no significant relationship between the nurses' knowledge level and their demographic characteristics

**Conclusions:** The study concluded that nurses have a lack of knowledge regarding aseptic techniques in the management of burn patients.

**Recommendations:** Continuously encourage and participate in aseptic technique training courses for nurses, as well as to conduct studies on the level of aseptic technique practice among nurses in managing burn patients.

**Key words :**Nurses, Knowledge, Aseptic Technique, Managing Burn

## Introduction

Burn injuries are among the most distressing traumas and a major public health concern all over the world (Qader & Muhamad, 2010). Approximately 180,000 deaths occur by burn every year estimated by world health organization (WHO) in 2018, these extensively occur in low-income and middle-income countries, burns could also lead to many disability-

adjusted life-years lost. Burn wound infection considered a most common complication; other common complications include sepsis, pneumonia, lung failure, acute renal failure, and multi-organ failure. Most burn wound infections result in morbidity and mortality in burn patients and are extremely difficult for nurses to manage (Buksh, Ghani, Amir, Asmat & Ashraf, 2019). Such burn wound complication management leads to increase treatment costs at the personal, regional, and international levels (Bourke & Dunn, 2015). Therefore, one of the most common and crucial clinical competencies in healthcare is an aseptic technique (Rowley et al, 2010) for protecting patients from infections caused by the transmission of pathogenic microorganisms. The reason for such high morbidity and mortality is the non-adherence to aseptic techniques among nurses during burn wound care (Bourke & Dunn, 2015); it requires nurses to have a single standard aseptic technique, importantly when are used as a method of preventing infection, it is essential that they are theoretically sound and carried out correctly (Clare & Rowley, 2018). Nurses play a vital role in burn wards and coordinate all the patients' activities. Thus, there is a need that nurses must possess knowledge of the multisystem affected by a burn, aseptic techniques, and proper diagnostic and psychosocial skills (El-Sayed, Gomaa & Abdel-Aziz, 2015). Along with so many coordinative roles, the nurse should be a specialist in wound care, responsible to care for wounds, notice any unusual changes, during the burn wound healing whether spontaneous or through grafting and excision. In this way, the nurses can prevent burn infection and can manage pain (Kalsoom, Tariq, Ali & Noor 2018).

## **Methodology**

The current study aimed to assess nurses' knowledge regarding aseptic technique in managing burn patients at teaching hospitals in Mosul city. The study started from 1<sup>st</sup> October 2020 until 15<sup>th</sup> April 2021. The descriptive design selected a purposive sample from (60) nurses working at the Al-Salam teaching hospital and Al-Jamhori teaching hospital. The instrument was constructed using a review of literature from published research studies (Hunt , 2018), and it is composed of the two-part. The first part represents demographic characteristics such as age (years), gender, educational levels, total experiences years in nursing, and years of experience in burn wards. In addition, participation in an aseptic technique course. While the second part assesses the nurses' knowledge regarding aseptic technique in managing burn patients which consist of (26) multiple-choice questions. The answer to the questions in part two is symbolized as (0) for the incorrect answer and (1) for the correct answer, and the level of knowledge was (1-1.33) poor knowledge, (1.34-1.66)

average knowledge, and (1.67-2) good knowledge. Official permission was obtained from Ministry of Health, Department of Health Nineveh to ensure its acceptance in order to conduct the study. The instrument reliability measured before the data collection through the correlation coefficient that was (0.78). The content validity of the instrument was established through a panel of (10) experts in the nursing and medicine field. After this using Statistical Package for the Social Science (SPSS, Version 24) as a statistical analysis to explore the descriptive statistics, and inferential statistical methods. The differences are significant with variables at P. value  $\leq 0.05$ .

### The results

Table (1) Distribution of nurses' demographic characteristics as frequency, and percentage for a total sample of study (N=60)

Demographical characteristics	Items	Frequency	Percent
Age (years) Mean = (29.43) Standard deviation = 4.75	21-25 years	14	23.3
	26-30 years	25	41.7
	31-35 years	13	21.7
	36 more years	8	13.3
Gender	Male	31	51.7
	Female	29	48.3
Educational levels	Secondary School graduated	36	60.0
	Institutes graduated	20	33.3
	University graduated	4	6.7
Total experiences years in nursing Mean = 7.58 Standard deviation = 5.80	1-5 years	30	50.0
	6-10 years	15	25.0
	11-15 years	9	15.0
	16 years and more	6	10.0
Experiences years in burn wards Mean = 4.43 Standard deviation = 3.13	1-5 years	45	75
	6-10 years	9	15
	11-15 years	4	6.7
	16 years and more	2	3.3
Participate in aseptic technique course	Non	43	71.7
	One course	13	21.7
	Two courses	3	5.0
	Three course and more	1	1.7

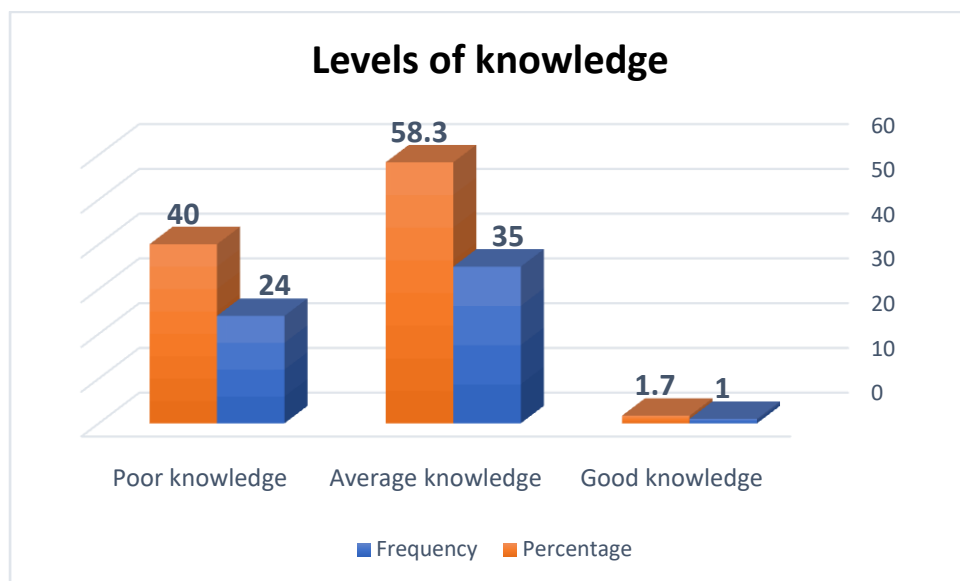


Figure (1) Bar graph describes frequency and percentage level of nurses' knowledge regarding aseptic technique in managing burn patients.

Table (2) Findings association of knowledge regarding aseptic technique with selected demographic variables (N=60)

Demographical characteristics	Items	Levels of knowledge			Chi Square test		
		Poor	Average	Good	$\chi^2$	df	P-value
Age (years)	21-25 years	5	9	0	10.526	6	0.104 H.S
	26-30 years	15	9	1			
	31-35 years	2	11	0			
	36 and more	2	6	0			
gender	Male	13	18	0	1.13	2	0.568 H.S
	Female	11	17	1			
Educational levels	Secondary School	12	23	1	3.407	4	0.492 H.S
	Institutes	9	11	0			
	University and above	3	1.00	0			
Experiences years in nursing	1-5 years	13	17	0	9.059	6	0.17 H.S
	6-10 years	8	7	0			
	11-15 years	2	6	1			
	16 years and more	1	5	0			
Experiences years in burn wards	1-5 years	17	27	1	2.795	6	0.834 H.S
	6-10 years	5	4	0			
	11-15 years	2	2	0			
	16 years and more	0	2	0			
Participation in aseptic technique course	Non	18	24	1	2.573	6	0.86 H.S
	One course	4	9	0			
	Two courses	1	2	0			
	Three course and more	1	0	0			

## Discussion

Burns is a public health problem, the aseptic technique plays a role to reduce infection and care for patients after burns, help quickly recover and maintain or change the condition. Therefore, the current study describes nurses' demographical characteristics, in table (1) firstly clarification the highest percentage (41.7%) of nurses age between (26-30) years with a mean (29.43), and standard deviation (4.75). Also, demonstrate the majority percentage of the gender (51.7%) is male while (44.9%) are female. the nurses participating in the study with secondary school graduated was (60.0%), and half of the nurses have (1-5 years) experiences in nursing was (50.0%). Reached experiences years in burn wards was (75.0%). Most of the nurses had not previously participated in the aseptic technique training course, at a rate (71.7%). The study by Kadhim and Hamza (2020) have the same the results about the high percentages of the participant (55%) are males. In regard to years of experience in the burn wards, (80%) of nurses have (1-4) years of experience in a burn ward. The current study is also consistent with the study of Singh, Rani & Kumari (2016), most of the nurses (67.6%) were male, and females were (32.4%). The highest percentage of nurses was (89.78) who have experience of fewer than 5 years. In contrast, the other variables disagree with our study, for the age results depicted that most of the nurses (52.9%) represented of age group (20-25) years, while age group (26-30) years were (41.2%). In addition, most nurses have a university graduated. Figure (1) shows the nurses' knowledge level knowledge regarding aseptic technique in managing burn patients. More than half of nurses have average knowledge (58.3%), and (40%) have poor knowledge, as for the good knowledge was (1.7%). These study findings were inconsistent with a study done in 2014 by Pankaj P et al. The study findings show that the knowledge means a level that nurses have a good level of knowledge of aseptic techniques applied in the burn wards. Another study by Thatcher et al in 2015 the results was consistent the level of knowledge of nurses regarding the aseptic technique of burn management practices revealed that the highest percentage (70%) of the respondent had average knowledge. fewer nurses have a poor and good level of knowledge. Results of another study by Singh, N., Rani, M., & Kumari, P. (2016) showed that maximum nurses 43 (63.24%) were having average knowledge whereas 25 (36.76%) having knowledge poor average. Nurses were no having adequate knowledge regarding aseptic techniques. Marey, Shabaan, & Abo Gad (2020) results illustrated the majority of nurses showed a poor level of total knowledge about infection control principles. Besides, their deficient knowledge about aseptic technique. In the table (2) according to the chi-square statistical analysis, there was no

significant association between the nurses' knowledge level and their demographic characteristics at the P-value equal to or less than 0.05 level of significance. This meant that the demographic characteristics of nurses and their knowledge level did not have a significant relationship. Singh, Rani & Kumari (2016), Findings related to knowledge of nurses regarding aseptic techniques Results revealed that the mean knowledge score of nurses was 13.13 with a median score of 14. The standard deviation of the knowledge score was 3.25. Frequency and Percentage distribution of knowledge of nurses regarding aseptic techniques Results showed that in maximum nurses i.e. 43 (63.24%) were having average knowledge whereas 25 (36.76%) having knowledge poor average, none of the nurses was having adequate knowledge regarding aseptic techniques. The data showed that on the computation of chi-square, it was found that there was no significant association of the knowledge score of the nurse with any demographic variables at 0.05 level of significance. This indicated that the demographic characteristics of nurses and their knowledge scores did not have a significant association and were independent of each other. the study by Manikkuttan et.al (2017) has shown no significant association between the level of knowledge and selected demographic characteristics among nurses, these results correspond with the current study.

## **Conclusions**

The study concluded most nurses have secondary school graduated (60%) with low experiences years between(1-5) years in the burn wards that represent (75%). the majority of nurses (71.7%)do not have a training course in the aseptic technique. Finally, the nurses have a deficit of Knowledge level regarding aseptic techniques in managing burn patients.

## **Recommendations**

1. This study recommends that a preliminary study can be conducted to know the effectiveness of the educational program to increase the level of knowledge regarding aseptic techniques for managing burn patients in teaching hospitals in Mosul city.
2. Continuous encouragement and participation of nurses in training courses related to aseptic techniques in managing burn patients.
3. Conducting studies on the level of practices applied aseptic techniques in managing burn patients among nurses.

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