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RESEARCH ARTICLE

Evaluation of Nursing Staff's Practices about Aseptic Technique in Operation Room

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ABSTRACT
The process of using practices and procedures to prevent contamination from pathogens. It involves applying the strictest rules to minimize the risk of infection. Healthcare professionals use aseptic technique in surgery rooms, clinics, outpatient care centers, and other health care settings. The present study aimed to evaluate of nurses' practices about aseptic technique in operation room. A quantitative design (descriptive study) was carried out at Al-Diwaniya Teaching Hospital for the period from 15thoctober, 2021 to 28thapril, 2022. Purposive sample comprised of (30) nurses who have been actually working in the operation room. Through the use of practice checklist includes (20) items concerning aseptic technique in operation room. The results of the study revealed that the majority of participants were have a moderate level about aseptic technique practices in operation room as show 28(93.3%) with mean of score and standard division (1.85 ∓ 0.120),The study concluded that the nurses working in operation room have a moderate level of practice about aseptic technique in operation room. The study recommended that the nurses staff can be encouraged and motivated for participating in the special training programs and conference with leading aseptic technique who have long experience in teaching at aseptic technique procedure to fulfill the nurses needs concerning defects and limitation in their knowledge and practice.

Keywords:Practices, Aseptic Technique, Operation Room

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INTRODUCTION

Surgical asepsis is a set of particular skills and actions implemented under cautiously controlled situations, with the aim of reduces the risk of health care associated infections. It intended to increased and keep asepsis (the absence of infectious material in the clinical location). Aseptic technique prevents, the presence of pathogenic microorganisms and saves the patient from infection (Benson and Powers, 2011).

Aseptic technique intends to reach asepsis, and each healthcare facility has its own set of principles and criteria for attaining it (Pankaj et al., 2014). The purpose of aseptic technique is to protect the patient by avoiding postoperative infection by creating the environment and following policies to avoid harmful microorganisms of sterile fields, sterile equipment, and the surgical site (Roth rock, 2011)

The operating theatre team utilizes aseptic procedures to prevent, remove, and destroy micro-organisms from living tissue, the operating theatre environment, and surgical instruments (Karma et al. 2016). For perioperative professionals, AORN has created standards and guidelines that can be used as criteria for assessing patient care quality. All sterile employees in the operating room must adhere to the principles of aseptic technique (Abraham et al. 2016).

Personal hygiene, hand washing, wearing personal protective equipment, donning a sterile surgical gown and gloves, preparing a surgical site, and creating and maintaining a sterile field with the assistance of sterile surgical drapes are all evidence-based recommendations in aseptic practices (Eske, 2018).

A variety of practices and measurements can help to reduce the danger of SSI. These consist of patient preparation (e.g., nutritional assessment, surgical site hair removal, pre-operative showers); following good environmental cleaning techniques, wearing appropriate surgical clothing, and reducing movement; practicing hand washing, the surgical scrub, and antimicrobial prophylaxis; draping, ensuring non-contaminated equipment, and, of course, effective aseptic technique during the operation (Humphreys, 2009).

Surgical patients rely on OR nurses to provide effective care and to ensure the prevention of SSIs when they interact with a variety of health care specialists during their perioperative travels. That is, OR nurses are in charge of enforcing hygiene and aseptic principles in the operating room in order to prevent and restrict the spread of infections. Furthermore, OR nurses, in collaboration with other team members, are accountable for perioperative care (Nordström et al., 2019). Surgical Site Infection (SSI) is one of the most frequent type of healthcare-associated infections, accounting for 20% to 25% of all infections. It is an infection that develops within 30 days of a surgical procedure or can last up to a year in surgical patients who have had an implant placed in a part of the body (Owens & Stoessel, 2008).

METHOD

A quantitative design (descriptive study) has been conducted from (15th October, 2021 to 28th April, 2022). The researcher used a non-probability (purposive) sampling method on (30) nurses working at operation room in Al-Diwaniyah Teaching Hospital.

The study instrument consists of two parts: the first part is demographic data for study sample which of age, gender, educational level, years of experience in nursing profession, years of experience in operation room. The second part is the observation check-list tool which consists of 4 domains and 20 items. The validity of the instrument and the interventional program were identified by presenting it to 14 experts. Descriptive and inferential statistics were used to analyze the results of the study using the Statistical Package of Social Sciences (SPSS) version 21 and Microsoft Excel (2010).

RESULTS

Findings revealed in (Table 4.1) ,the Mean age for the study sample is (35.5∓8.65). most of their age study sample within the age group (30-39 years) 11(36.7%) of participants. the majority of gender were male presented 20(66.7%) of participants. Concerning the level education, the most of the nurses in study sample were college of nursing graduate, 13(43.3%). In relation to the years of experience in the nursing profession for the most of participants have them service (11-15 years), as they showed 8(26.7%), while the years of experience in the operating room the most of participants have service (1-5 years) 9(30%).

The results of (Table 4.2) show that the majority of participants were have a moderate level about aseptic technique practices in operation room as show 28(93.3%) with mean of score and standard division (1.85 ∓ 0.120),

Table (4.4) shows that there is no statistical significant association between nurses' practices concerning aseptic techniques and their age group at p value > 0.05, when analyzed by ANOVA. Results of (**Table 4.5**) reveals that there is high statistical significant relationship between nurses' practices related to aseptic techniques in operation room for the study sample and their level education at (P > 0.05), when analyzed by ANOVA.

Findings of (**Table 4.6)** display that there is no statistical significant association between nurses' practices related to aseptic techniques in operation room and their years of experience in the operation room at (p value > 0.05), when analyzed by ANOVA.

Table 1. Demographic characteristics related to participants.

Variables	Rating	Study Sample (n=30)	
		Freq.	%
Age (years)	20-29 yrs.	9	30.0
	30-39 yrs.	11	36.7
	40-49 yrs.	8	26.7
	≥ 50 yrs.	2	6.7
	$\bar{x} \mp$ Std. Dev.	35.5∓8.65	
Gender	Male	20	66.7
	Female	10	33.3
Educational Level	Secondary School Nursing	7	23.3
	Nursing institute	9	30.0
	Nursing Bachelor	13	43.3
	Postgraduate	1	3.3
Years of Experience in Nursing Profession	1-5 years	7	23.3
	6-10 years	5	16.7
	11-15 years	8	26.7
	16-20years	3	10.0
	≥ 21 years	7	23.3
Years of Experience in the Operating Room	1-5 years	9	30.0
	6-10 years	8	26.7
	11-15 years	4	13.3
	16-20 years	6	20.0
	≥ 21 years	3	10.0

n=sample size, Freq.=Frequency,

Table (4.2) Overall evaluation of nurses' practices

Levels of Evaluation	Study Sample	
	Frequency	Percent
Low (1 - 1.66)	2	6.7
Moderate (1.67 - 2.33)	28	93.3
High (2.34 - 3.00)	0	0.0
Total	30	100.0
$\bar{x} \mp Std.Dev.$	1.85 ∓ 0.120	

Arithmetic Mean ($\bar{x}$) and Std. Dev.= Standard Deviation.

Domains' practices	N	Mean	Std. Dev.	Evaluation
DOMAIN 1: Hand Washing	30	1.88	0.207	Moderate practice
DOMAIN 2: Personal Protective Equipment	30	1.90	0.267	Moderate practice
DOMAIN 3: Maintaining a Sterile Field and Surgical Skin Preparation	30	1.95	0.196	Moderate practice
DOMAIN 4: Environment Control	30	1.66	0.224	Low practice

Table (4.3): evaluation of Domains' practices
N= Number summation of overall answers; Low (1 - 1.66) Moderate (1.67 - 2.33) ,High (2.34 - 3.00)

Nurses' practices **Age**	**No.**	**Pre- test** **Mean ± Std. Dev.**	**Post- test** **Mean ± Std. Dev.**
20-29yrs	**9**	1.87± 0.94	2.81± 0.081
30-39yrs	**11**	1.83 ± 0.125	2.75 ± 0.076
40-49yrs	**8**	1.84 ± 0.160	2.79 ± 0.090
≥ 50yrs	**2**	1.88 ± 0.035	2.83 ± 0. 035
Total	**30**	1.85± 0.120	2.78± 0.081
ANOVA		**F =0.262** **d.f=26** **P = 0.852**	**F =1.264** **d.f= 26** **P = 0.307**

Table (4.4): Association between nurses' practices with their age group for the study sample
No. = Number of frequencies, Std. Dev. = Standard deviation, ANOVA: Analysis of variance; F = F-test, d.f. = degree of freedom, P = probability value; NS: Non-Significant at (P > 0.05); S: Significant at (P < 0.05); HS: High Significant at (P< 0.01).

Table (4.5): Association between nurses' practices with their level education for the study sample

Nurses' practices / Level Education	No.	Pre-test Mean ± Std. Dev	Post- test Mean ± Std. Dev.
Secondary School Nursing	7	1.80± 0.082	2.77± 0.049
Nursing Institute	9	1.82 ± 0.103	2.77 ± 0.106
Nursing Bachelor	13	1.86 ± 0.110	2.78 ± 0.056
Postgraduate	1	2.20 ± 0.000	3.00 ± 0.000
Total	30	1.85 ± 0.120	2.78± 0.081
ANOVA		f =4.738 d.f=26 P = 0.009	f =3.079 d.f= 26 P = 0.045

Nurses' practices / Years' experience in operating room	No.	Pre-test Mean ± Std. Dev.	Post-2 test Mean ± Std. Dev.
1-5 years	9	1.90 ± 0.106	2.82 ± 0.079
6-10 years	9	1.78 ± 0.091	2.74 ± 0.056
11-15 years	3	1.90 ± 0.050	2.82 ± 0.029
16-20 years	6	1.84 ± 0.188	2.81 ± 0.097
≥ 21 years	3	1.85 ± 0.050	2.78 ± 0.076
Total	30	1.85 ± 0.120	2.78 ± 0.081
ANOVA		F =1.405 d.f =25 P = 0.261	F =2.631 d.f = 25 P = 0.058

No. = Number of frequencies, Std. Dev. = Standard deviation; t = t-test, d.f = degree of freedom, P = probability value; NS: Non Significant at (P > 0.05); S: Significant at (P < 0.05); HS: High Significant at (P< 0.01).

Table (4.6): Association between nurses' practices with their years of experience in operating room for the study sample

No. = Number of frequencies, Std. Dev. = Standard deviation, ANOVA: Analysis of variance; F = F-test, d.f. = degree of freedom, P = probability value; NS: Non Significant at (P > 0.05); S: Significant at (P < 0.05); HS: High Significant at (P < 0.01).

DISCUSSION

This study reveals that the mean age for the study sample is (35.5∓8.65) and the higher percentage for study sample was 11 (36.7%) for (30-39) years . This study consistent with study conducted by Taher (2015) in Slemani city (Iraqi Kurdistan rejoin). Which stated that the most of the studied nurses 55 (78.6 %) of them were in the age group of 31-40 years.

With somewhat more are male 20 (66.7%) than female for the study sample. This results consistent with Singh et al., (2016) study, which reported that the most of the staff nurses (67.6%) were male and (32.4%) were female.

Concerning to levels of education, the study results showed that the majority of nurses 13(43.3%) of nurses in the study sample. This study consistent with study conducted by Kareem& Ahmed (2021) in Iraq. which stated that, 50% of the participants were graduated from the College of Nursing.

In relation to the years of experience in the nursing profession for study sample have them service (11-15 years), as they showed 8(27.7%) of participants. This result agrees with study conducted by Christiana and Salawu (2020) in Lagos State, Nigeria. which reported that the most in the experimental group (34.2%) and control group (45.0%) have worked between 11 and 15 years of service.

Concerning to years of experience in in the operating room the study results showed that the majority of nurses 9 (30%)in the study sample were have (1-5) years of experience in in the operating room. This result concordant with study conducted by Dhakal et al., (2016) which revealed that the most of respondents 75% had working experience of five years and below.

As a result of the data analysis, there is no association between the nurse's practices of the study sample with their age related to main domain about aseptic technique in operation room. these results are concordant with a study conducted Alice et al., (2013), which founded that there was no statistically significant relationship with age.

As a result of data analysis, there is significant differences between the nursing staffs 'practices of the study participants with their level of education -related to the main domains bout aseptic technique in operation room. The result of the current study is concordant with the study carried out by Nsekambabaye (2017) which revealed that there is statically significant difference between level of education and level

of practice of sterile technique at operation room.

Through the course of the data analysis, it has been noted that there was no significant relation between nurse's practices of the study sample with their years of experiences in operation room related to main domain. The present study agrees with Benner (2004) who stated that without background knowledge, nurses risk using poor judgment and lack the tools necessary to learn from experience. The study may be confirmed that there was a significant positive correlation between years of experience and nurse's performance. Nurses with high experience reported more professional development knowledge and activities.

CONCLUSIONS

This study reveals that the level of nurses practices who working in the operating room about aseptic technique practices were moderate

According to the study, the level of education of nurses in the operating room has a significant impact on nurse practices. While age, gender, nursing field experience, and operating room experience) for nurses have no significant relationship on aseptic technique practices.

ETHICAL CONSIDERATIONS COMPLIANCE WITH ETHICAL GUIDELINES

This study was completed following obtaining
consent from the University of Baghdad.

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AUTHOR'S CONTRIBUTIONS

Study concept, Writing, Reviewing the final edition by all authors.

DISCLOSURE STATEMENT:

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