

Nurses' Knowledge Regarding Prevention of Surgical Site Infections at Baghdad Cardiac Centers and Hospitals.

Bassima A. Naji Msc¹, Aqeel H. jasim², Ayad M. Moussa³

¹Assistant instructor, ²Instructor, ³Instructor, Fundamentals of Nursing Department,
College of Nursing-University of Baghdad

Abstract

Background: Surgical site infections (SSIs), are defined as infections that occur within 30 days of the operation, Nosocomial infection, also called hospital acquired infection occur in patient who are admitted in Hospital for a long or short period of time which leading to cause of morbidity and death, therefore, we decided to establish the extent of knowledge of Surgical site infections Prevention among nurses at Baghdad Cardiac Centers and Hospitals. **Objectives:** the study aimed to assess the nurse's knowledge regarding prevention of surgical site infections and to find out the relationship between Nurses' Knowledge and some of demographic data (age, gender, level of education, years of experiences, and training session). **Methods:** Across- sectional study was conducted in the period of December 16th, 2018 up to the end of 18th June, 2019. A purposive sample consisted of (50) nurses were selected out of **two cardiac centers** and **one cardiac hospital** in Baghdad city. The data collected was analyzed by using SPSS version 20.0 the study instrument consist of two major sections were constructed it is based on the review of literatures. **First one** is concerned with demographic data for sample, and the **second section** is knowledge, The extent of knowledge concerning SSI was determined using multiple-choice questionnaires covering the nurse's knowledge, Question tools is composed of (23) items, reliability and validity of the questionnaire was determined through the analysis of pilot study. Data were collected through the use of self-report method, which analyzed through two statistical approaches. They are descriptive statistical analysis (frequencies, percentage) and inferential statistical analysis (Chi-Square).

Results: the findings of study reveals the study sample reveals that most of the sample (78%) were in age group (25-35) years and most them (52%) were female, the majority of the sample (68%) were married and most of them (42%) were nursing college graduate, the high percent (90%) of them having participation in training session, the majority of their nursing experience in general were (42%) from (1-5) years and most of them (66%) have experience in cardiac care unit from (1-5) years. **Conclusions:** most of the study sample has moderate knowledge regarding prevention of surgical site infection in Baghdad cardiac centers and hospitals. **Recommendation:** on the basis of the results of the study the researcher recommends that further research needed with large sample, to find out more result relationships and in different area. And special training programs should be designed and constructed for nurses in these areas to increase their skills.

Keywords: Nursing knowledge, Surgical Site Infections.

Introduction

Surgical site infections are defined as infections that occur within 30 days of the operation⁽¹⁾. One of the most common types of Healthcare-Associated infection is Surgical Site Infection (SSI) which is considered 20% to 25% of all Healthcare-Associated infections⁽²⁾ (SSI) is an infection that happens among thirty days when an operation causes redness, fever, pain and swelling.

It's additionally one among the foremost imperative complications of a surgical intervention⁽³⁾ Nosocomial infection have a great impact on the health of hundreds of millions people and it is considered a major global issue today by all the stakeholders⁽⁴⁾. Throughout the literature, SSIs were associated with factors including advanced age, malnutrition, metabolic diseases, smoking, obesity, hypoxia, and immune-suppression⁽⁵⁾. Nurse's

pre and post-operative care play a significant to influence infection management responsibilities⁽⁶⁾. Nurses have the distinctive opportunity to reduce the potential for hospital-acquired infections. By utilizing the skills and knowledge of nursing practice, they can facilitate patient recovery while minimizing complications related to infections⁽⁷⁾. Nurses require being knowledgeable regarding the cause, effect and management of SSI to ensure optimum patient's outcomes following surgery⁽⁸⁾.

Materials and Method

Across- sectional study in which approach is applied in order to achieve the earlier stated objective. The study was initiated from December 16th, 2018 to 18th June, 2019.

A purposive (non – probability) sample of (50) nurses works in cardiac units, The study has been conducted on the Iraqi Center of Heart Disease, Ibn al-Nafees Hospital and Ibn-Albettar Center. Self-administrative questionnaire was modified by

investigators for the present study depending on: Review of available literature, the related previous studies scales. The modified questionnaire consist of **two parts: the first** contained the demographic Characteristics of nursing student consist of (7) items; the **second part** include nurses' knowledge Regarding Prevention of Cardiac Surgical Site Infections at Baghdad Cardiac Centers and Hospitals which consist of (23) items rated to tow levels of likers scale and scored the follows: (1) for **right answer** (0) for **wrong answer**. Validity for the instrument was determined through the use (10) of panel experts to investigate the clarity, relevancy, and adequacy of the questionnaire in order to achieve the present studies objectives. A pilot study was carried out for period from January 28th, 2019 to February 10th, 2019 and conducted on 10 nurses. Statistical analysis were conducted by using statistical package for social science (SPSS) version 20.0 data analysis was employed through the application of descriptive and inferential statistical approaches.

Results

Table (1): Nurse's Knowledge of the Study Sample.

Variable	Frequency (F)	Percent (%)
poor	3	6.0
moderate	25	50.0
good	22	44.0
total	50	100.0

Table (1): this table presents the nurse's knowledge regarding Prevention of Surgical Site Infections in Cardiac Centers and hospitals. The table Show that the majority of the sample (50%) were rated as moderate knowledge while (6%) of them have poor knowledge.

Table (2): The Relationship between Nurse’s Knowledge and Hospitals name.

Hospital name	Nurse’s knowledge			Total	Chi-square test			
	Poor	moderate	Good		Value	d.f	Sig.	Grade
Iraqi Center of Heart Disease (F)	2	6	8	16	5.934a	4	.204	N.S
% Within Nurse’s Knowledge	66.7%	24.0%	36.4%	32.0%				
Ibn al-Nafees Hospital	0	8	10	18				
% Within Nurse’s Knowledge	0.0%	32.0%	45.5%	36.0%				
Ibn-Albettar Center	1	11	4	16				
% Within Nurse’s Knowledge	33.3%	44.0%	18.2%	32.0%				
Total (F)	3	25	22	50				
% Within Nurse’s Knowledge	100.0%	100.0%	100.0%	100.0%				

Where d.f = degree of freedom, sig=significant, N.S =non-significant, F=frequency.

Table (2): this table shows that there are no significant association between nurse’s knowledge and hospitals which they working there. Ibn Al-Nafees Hospital is the high percentage (**36 %**) of good knowledge for their staff in cardiac units.

Table (3): The Relationship between Nurse’s Knowledge and Years of Experience in Nursing in General.

Years of experience in nursing in general	Nurses knowledge			Total	Chi- squares test			
	Poor	moderate	Good		Value	d.f	Sig.	Grade
1-5 years (F)	0	11	10	21	19.601a	10	.033	S
% within nurses knowledge	0.0%	44.0%	45.5%	42.0%				
6-10 years (F)	1	8	6	15				
% within nurses knowledge	33.3%	32.0%	27.3%	30.0%				
11-15 years (F)	0	3	5	8				
% within nurses knowledge	0.0%	12.0%	22.7%	16.0%				
16-20 years (F)	1	0	1	2				
% within nurses knowledge	33.3%	0.0%	4.5%	4.0%				
21-25 years (F)	1	1	0	2				
% within nurses knowledge	33.3%	4.0%	0.0%	4.0%				
26-30 years (F)	0.0%	8.0%	0.0%	4.0%				
% within nurses knowledge	0.0%	4.0%	0.0%	4.0%				
Total (F)	3	25	22	50				
% within nurses knowledge	100.0%	100.0%	100.0%	100.0%				

Where d.f = degree of freedom, sig=significant, N.S =non-significant, F=frequency.

Discussio

Discussion of the Nurse’s Demographic Characteristics

Through the data Analysis of the present study the findings shows that most of the study samples (78%) were in age group (25-35) years and most them (52%) were female.

This result agree with the findings obtained from other study, which shows that the majority (73%) of the studied nurses had 21 years and less than 30 years and most of them (52%) were female⁽⁹⁾.

Regarding the marital status of our study the results shows that the majority of the samples (68%) were married and most of them (42%) were nursing college graduate.

This result is agree with findings obtained from others study which found B.S (89%) are more likely to have better knowledge than diploma holders⁽¹⁰⁾.

This agrees with result obtained from other study which found that the highest percentages (40.0%) of the sample were academic nurses who graduated from Colleges of Nursing⁽¹¹⁾.

According to training session the results shows that Most of our study sample (90%) having participation in training session, this study disagree with another study which found that More than half of studied nurses said that they; did not have any previous training course⁽¹²⁾.

The results of our study shows that the majority of nursing experience in general were (42%) from (1-5) years and most of them (66%) have experience in cardiac care unit from (1-5) years.

This result agree with another study which found that Most of the study have work experience (52%) of sample from (1-5) years⁽¹³⁾.

Discussion of Nurses Knowledge Regarding Prevention of Surgical Site Infections in Cardiac Centers and Hospitals.

In this study the results reveal that the nurses have a good knowledge about (sign and symptom of SSI?), (intraoperative prevention of SSI), (prophylactic prevention of SSI?), (postoperative prevention of SSI), (form discharge instruction?), (what is the purpose for pre-operative skin preparation), (which one is the correct answer for the benefit of wound dressing?). While about (treatment of SSI?), (when is the best time for pre-operative hair remove?), (which one is best agent for preoperative skin preparation?), (when should you administer prophylaxis antibiotic surgical patient), the nurses have deficit knowledge, related prevention of Surgical Site Infections in Cardiac Centers and hospitals.

The results disagree with findings of another study which found that the majority of the samples (32%) have good knowledge regarding infection control⁽¹⁴⁾.

Discussion of the Nurse's Knowledge of the Study Sample.

The Results of this study Shows that the majority of the sample (50%) were rated as moderate knowledge while (6%) of them have poor knowledge.

These results agree with the previous study that found the proportion of nurses who were knowledgeable about prevention of surgical site infection was found to be 40.7% with a mean score of 56.3%. This finding indicated that more than half of the nurses demonstrated inadequate knowledge on prevention of surgical site infections⁽¹⁵⁾.

Discussion of Relationship between Nurse's Knowledge and Hospitals which working there.

The result of our study shows that there are no significant association between nurse's knowledge and hospitals which working there. Hospital No. (2) Ibn Al-Nafees Hospital is the high percentage (36 %) of good knowledge for their staff in cardiac units.

Discussion of the Nurse's Knowledge and Years of Experience in Nursing in General.

The result of the present study report that there are significant differences between nurse's knowledge and Years of Experience in nursing in General

This finding is in line with findings from European and African studies in which found that the years of experience was positively associated with knowledge regarding infection prevention⁽¹⁶⁾.

Conclusion

Most of the study samples have moderate knowledge regarding prevention of surgical site infection in Baghdad cardiac centers and hospitals.

Recommendation: on the basis of the results of the study the researcher recommends that further research needed with large sample, to find out more result relationships and in different area. And special training programs should be designed and constructed for nurses in these areas to increase their skills.

Acknowledgement: This research was funded by Author. Moreover we would like to thank the study participants and data collectors for their fully participation and responsible data collection.

Funding: None.

Conflict of Interest: None declared.

Ethical approval: Not required.

References

1. Smith MA, Dahlen NR, Bruemmer A, Davis S, Heishman C.; Clinical practice guideline surgical site infection prevention. *Orthopaedic Nurs* 2013 Sep 1; 32(5):242-8.
2. Owens, C., Stoessel, K.; Surgical site infections: epidemiology, microbiology and prevention. *Journal of Hospital Infection*, 2008; 70: 3-10]
3. Famakinwa, T., Bello, B., Oyeniran, Y., Okhiah, O., & Nwadike, R.; Knowledge and practice of post-operative wound infection prevention among nurses in the surgical unit of a teaching hospital in Nigeria. *IJB AIR* 2014; 3(1), 23-28.
4. Abdulraheem IS, Olapipo AR, Amodu MO; Primary health care services in Nigeria: Critical issues and strategies for enhancing the use by the rural communities. *J Public Health Epidemiol.* 2012; 4(1):5-13.
5. Korol E, Johnston K, Waser N, Sifakis F, Jafri HS, Lo M et al.; A systematic review of risk factors associated with surgical site infections among surgical patients. *PloS one.* 2013 Dec 18;8(12):e83743.
6. Sickder, H. K. (2010). Nurses' knowledge and practice regarding prevention of surgical site infection in Bangladesh (Doctoral dissertation, Prince of Songkla University)]
7. Benson, S., & Powers, J.; Your role in infection prevention. *Nursing made incredibly easy*, 2011; 9(3): 36-41.
8. Harrington, P. (2014) Prevention of Surgical Site Infection. *Nursing Standard*, 28, 50-58. <https://doi.org/10.7748/ns.28.48.50.e8958>.
9. Vaibhav B. Patil, R. Raval, G: Knowledge and practices of health care professionals to prevent surgical site infection in a tertiary health care centre; *Int Surg J.* 2018 Jun; 5(6):2248-2251.
10. Teshager, F. A., Engeda, E. H., & Worku, W. Z., Knowledge, practice, and associated factors towards prevention of surgical site infection among nurses working in Amhara regional state referral hospitals, Northwest Ethiopia. *Surgery research and practice*, 2015]
11. Al-Ganmi A. Assessment of Nurses' Knowledge Concerning Cardiogenic Shock for Patients' in Cardiac Care Unit at Baghdad Hospitals. *kufa Journal for Nursing sciences.* 4.2 (2014): 215-222]
12. Shehab M, Abd-Elkader H, Ibrahim N ; Assessment of Nurses' Practice Related to Managing Patients with Dyspnea at Emergency Units at Port Said hospitals, *International Journal of Caring Sciences*; September – December 2016;9(3): 1066.
13. Vaibhav B. Patil, R. Raval, G: Knowledge and practices of health care professionals to prevent surgical site infection in a tertiary health care centre; *Int Surg J.* 2018 Jun; 5(6):2248-2251.
14. Famakinwa, T., Bello, B., Oyeniran, Y., Okhiah, O., & Nwadike, R., ;Knowledge and practice of post-operative wound infection prevention among nurses in the surgical unit of a teaching hospital in Nigeria. *International Journal of Basic, Applied and Innovative Research*, 2014; 3(1), 23-28.
15. Teshager, F. A., Engeda, E. H., & Worku, W. Z.; Knowledge, practice, and associated factors towards prevention of surgical site infection among nurses working in Amhara regional state referral hospitals, Northwest Ethiopia. *Surgery research and practice journal*, 2015]
16. Fashafsheh I , Ayed A, Eqtait F, and Harazneh L.; Knowledge and practice of nursing staff towards infection control measures in the Palestinian hospitals, *Journal of Education and Practice*, 2015; 6(4):79–90.