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Medical Surgical Nursing

"KNOWLEDGE, PRACTICES AND ASSOCIATED FACTORS ON PREVENTION OF SURGICAL SITE INFECTION AMONG NURSES WORKING IN SELECTED HOSPITALS, HYDERABAD, TELANGANA"

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ABSTRACT **Background of the study:** A surgical site infection is an infection that occurs after surgery in the part of the body where the surgical incision took place. Surgical site infections are one of the most common and costly hospital acquired infection. Nosocomial infections accounts for 7% in developed countries and 10% in developing countries. World Health Organization (WHO) shows that surgical site infection (SSI) is the most surveyed and frequent type of HAI in low- and middle-income countries and affects up to one third of patients who have undergone a surgical procedure. This infection is capable to increased hospital stay, additional cost and increased morbidity and mortality. Nurses can be the channel in the prevention of surgical site infection, decreases patients' economic burden as well as hospital expenses and enhance quality of life of the patients by the application of knowledge and recommended practices. **Aim:** To assess the knowledge and practice on prevention of surgical site infection among the nurses and too find out the association of knowledge and practice scores with the selected demographic variables. **Methods:** A cross- sectional descriptive study was undertaken to assess the knowledge and practices and associated factors on prevention of surgical site infection among the nurses working in selected Hospitals, Hyderabad, Telangana. Purposive sampling technique was used to select 100 nurses working in surgical intensive care unit and post-surgical wards. Data collection was done by using structured knowledge questionnaire and observational checklist. Data analysis was done by using descriptive and inferential statistics. Results: Data revealed that majority of the nurses showed 64% average knowledge and 79% average practices. There is significant correlation between knowledge and practices of the nurses at 0.05 level of significance. The findings of the current study demonstrated average knowledge and average practices. **Conclusion:** The study concludes that nurses have the opportunity to lessen the probability of hospital acquired infection. They are the one who can assist the patients in their recovery and reduce the complications associated with infections by the utilization of adequate knowledge and practices.

KEYWORDS : Knowledge, Practices, Associated Factors, Prevention, Surgical Site Infections, Nurses

INTRODUCTION

A surgical site infection is an infection that occurs after surgery in the part of the body where the surgical incision took place.[1] Surgical site infection is defined as an infection that occurs within 30 days after the operation.[2] Surgical site infections remain a substantial cause of morbidity, prolonged hospitalization, and death. SSI is associated with a mortality rate of 3%, and 75% of SSI associated deaths are directly attributable to the SSI. According to World Health Organization (WHO 2018) global guidelines on the prevention of SSI**,** the most frequent type of Health-care Associated Infection (HAI) in low- and middle-income countries (LMICs). Approximately one in 10 people who have surgery in LMICs acquire a SSI. Therefore, the prevention of these infections requires a range of preventive measures during pre-operative, intra-operative and post-operative care. Infection control is an important concern for all health care professionals specially nurses. Nurses are the one who can modify SSI risk factors in their daily practices such as proper hand hygiene, skin preparation and wound care. Many sets of guidelines in this area have been proposed in the past decade by the organizations working in the area of SSI prevention, such as the Center for Disease Control and Prevention (CDC), WHO, and the National Institute for Health and Clinical Excellence (NICE). However, adherence to the recommended best practices according to the guidelines for SSI prevention remains low among Nurses. They are the one who can assist the patients in their recovery and reduce the complications associated with infections by the utilization of adequate knowledge and practices.

Objectives Of The Study

1. To assess the knowledge and practice on prevention of surgical site infection among Nurses.
2. To find out the association of knowledge and practice scores with the selected demographic variables.
3. To assess the associated factors with knowledge and practice of Nurses on prevention of surgical site infection.
4. To co-relate the knowledge and practices on prevention of surgical site infection among Nurses.

Review Of Literature

Freaivwot Aklew teshaqer, Eshetu Haileselassie Enqeda and Workie Zemeni Worku (2015) conducted Institution-based cross-sectional study to assess the knowledge , practice and associated factors on prevention of surgical site infection at two randomly selected referral hospitals (Gondar University Referral Hospital and Debre Markos Referral Hospital) of Amhara regional State, Ethiopia. Simple random sampling technique was used to select 423 staff nurses the study participants. The study concluded that knowledgeable about prevention of surgical site infection was found to be 40.7%and practicing proper surgical site infection prevention activities was found to be 48.7%.Factors associated with knowledge of nurses about prevention of SSI were service year, sex of the participants and ever taking training on infection prevention and educational level. Factors associated with the practice of nurses on prevention of surgical site infection were age, sex, educational level .[3]

Woldegioris T, Bantie G, Getachew H (2017) conducted a cross-sectional descriptive study to assess the knowledge and practice regarding the prevention of surgical site infection in Bahir Dar city hospitals. The systematic random sampling technique was used to collect data from nurses. The findings shows that 74.5 % of the participant had good knowledge where as 45.1% of the participant had poor practice on prevention of surgical site infection. Learning institution, service year and history of training on infection prevention were associated significantly with the nurses' knowledge about prevention of surgical site infection. History of training in infection prevention, type of learning institution and years of service also were associated significantly with the nurse's practice in preventing surgical site infection. In this study nursing practice related to prevention of surgical site infections is not satisfactory.[4]

Research Methodology

Research Approach: Quantitative Research Approach

Research Design: Non Experimental, Cross Sectional Descriptive design

Variables:

Research Variables – Knowledge, practices on prevention of surgical site infections.

Demographic Variables– Age, sex, educational qualifications, year of experience and any training obtained on prevention of infection

Setting of the study:

- Apollo General Hospital, Hyderabad
- Apollo Hospital, Jubilee Hills, Hyderabad
- Continental Hospital, Hyderabad, Telangana.

Population: Staff nurses

Target Population: Staff nurses working in selected hospital

Accessible Population: Nurses working in surgical intentive care unit and post surgical ward at selected Hospital, Hyderabad.

Sample Size: 100 staff nurses

Sample Technique: Non Probability Purposive sample technique is used.

Inclusion criteria:
- Nurses with one year or more than one year of job experience in Surgical Intensive Care units and post surgical wards.
- Nurses who are willing to give consent and participate in the study.

Exclusion Criteria:
- Nurses who are caring for isolated patients with blood borne infections like HIV, HCV, HEP-B.

Tools: The tool consists of the following three sections:
- **SECTRION-I:** Demographic data of the nurses and associated factors.
- **SECTION-II:** Structured knowledge questionnaire on prevention of surgical site infection.
- **SECTION-III:** Practices with observational checklist on prevention of surgical site infection.

Categorization of the knowledge Score -
- 1-5 – Below average Knowledge
- 6-10 -Average Knowledge
- 11-15 - Good Knowledge

Categorization of the practice score –
- 1-9 – Below average practices
- 10-18 - Average practices
- 19-27 - Good practices.

Validity of the tool:
The prepared instrument along with the problem statement and objectives was submitted to 7 experts which includes 5 nursing experts, 1 doctors from microbiology department and 1 statiscians. Based on the corrections and suggestions given by the experts a few modifications were made by the researcher.

Reliability:
Cronbach's Alpha (split-half method) were used to test the reliability of the tool.The 'r' value was 0.623. Hence it indicates that the tool is reliable.

Ethical considerations:
- Written permission from the Medical Superintendent of Continental Hospital, Gachibowli, Hyderabad.
- Written permission from the Medical Superintendent of Apollo Institute of Medical Science and Research Jubilee Hills.
- Written permission from the Medical Superintendent of Apollo Hospital, Jubilee Hills.
- Written consents was collected from all the participants and the subjects were assured of the confidentiality and anonymity of the data obtained.

RESULTS :

Table 1 : Frequency and Percentage Distribution of Demographic Variables.

DEMOGRAPHIC VARIABLES		Frequency (f)	Percentage (%)
Age	20-25yrs	80	80.0
	26-30yrs	16	16.0
	31-35yrs	4	4.0
	>36yrs	0	0.0
Sex	Male	0	0
	Female	100	100
Education	GNM	14	14.0
	BSc.(N)	79	79.0
	PBBSc. (N)	7	7.0
	MSc.(N)	0	0.0
Year Of Experience	1-3yrs	77	77.0
	4-6yrs	16	16.0
	7-9yrs	5	5.0
	≥ 10yrs	2	2.0
Any training obtained on prevention of infection	Yes	100	100
	No	0	0.0

Table 2: Frequency and Percentage Distribution of Nurses according to the Knowledge Level.

Sl. No	Level of Knowledge	Score Range	Frequency	Percentage
1	Below average knowledge	1-5	20	20%
2	Average knowledge	6-10	64	64%
3	Good knowledge	11-15	16	16%

Table 3: Frequency and Percentage Distribution of Nurses according to the Practices Level.

Sl. No	Practices Level	Score Ranges	Frequency	Percentage
1	Below average practice	1-9	17	17%
2	Average practice	10-18	79	79%
3	Good practice	19-27	4	4%

Table : 4 Association of Knowledge and Practices on Prevention of Surgical Site Infection among the Nurses with the selected Demographic Variables.

VARIABLE	KNOWLEDGE SCORES						
1. Age of the nurses	Below average	Average	Good	X2	df	Table value	Significance
a) 20-25yrs	18	53	9	8.180a	6	12.59	NS
b)26-30yrs	2	9	5				
c)31-35yrs	0	2	2				
d)≥36yrs	0	0	0				
2.Educational Qualification							
a)GNM	3	9	2	0.247a	6	12.59	NS
b)BSc.(N)	16	50	13				
c)PBBSc. (N)	1	5	1				
d)MSc. (N)	0	0	0				
3. Year of Experience							
a) 1-3yrs	18	50	9	14.286a	6	12.59	S
b) 4-6yrs	1	11	4				
c) 7-9yrs	1	3	1				
d) ≥10yrs	0	0	2				
VARIABLE	PRACTICE SCORES						
1.Age of the nurses	Below average	Average	Good	2	df	Table value	Significance
a) 20-25yrs	62	4	14	1.977a	6	2.59	NS
b) 26-30yrs	13	0	3				
c) 31-35yrs	4	0	0				
d) ≥36yrs	0	0	0				
2.Educational Qualification							
a)GNM	5	9	0	9.175a	6	12.59	NS
b)BSc.(N)	9	66	4				
c)PBBSc. N)	3	4	0				
d)MSc. (N)	0	0	0				
3.Year of experience							
a)1-3yrs	12	61	4	3.561a	6	12.59	NS
b)4-6yrs	3	13	0				
c)7-9yrs	2	3	0				
d)≥10yrs	0	2	0				

***N.S- Non- significant, **S- Significant, df- degree of freedom**

Table:5 Correlation between Knowledge and Practice on Prevention of Surgical Site Infection among Nurses.

		Knowledge	Practice
KNOWLEDGE	Pearson Correlation	1	0.056
	Sig. (2-tailed)		0.578
	N	100	100
PRACTICE	Pearson Correlation	0.056	1
	Sig. (2-tailed)	0.578	
	N	100	100

CONCLUSION:
Based on the finding of the study revealed that there is average knowledge and average practice of the staff nurses on prevention of surgical site infection, which suggests that an urgent need of educational and awareness programs for improvement of nurses knowledge and practices regarding prevention of surgical site

infection to obtain quality care. Nurses have the opportunity to lessen the probability of hospital acquired infection. They are the one who can assist the patients in their recovery and reduce the complications associated with infections by the utilization of adequate knowledge and practices.

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