

A STUDY TO ASSESS THE EFFECTIVENESS OF PLANNED TEACHING PROGRAMME ON KNOWLEDGE REGARDING THE IMPORTANCE OF ASEPTIC TECHNIQUES AMONG JUNIOR STAFF NURSES WORKING IN TERTIARY CARE HOSPITAL, KARAD

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Abstract—Aseptic technique is the range of infection prevention and control practices which are used to minimize the presence of pathogenic microorganisms during clinical procedures Objectives: (1) Assess the knowledge regarding the importance of aseptic techniques in terms of pre-test. (2) Determine the effectiveness of planned teaching programme on knowledge of junior staff in terms of comparison of pretest and posttest knowledge score. (3) Associate the knowledge of importance of aseptic techniques with their demographic variables such as Age, sex, and education qualification, Methods: Quantitative research approach with pre-experimental one group pre-test posttest research design was used. The study was conducted at Krishna hospital, Karad. A 60 Junior staff nurses were selected by Simple random sampling. The data were collected by structured questionnaire. The data were analyzed using descriptive and inferential statistics. Results: The pre-test and post-test knowledge score among staff nurses the pre-test mean score was 7.83 with SD 0.784 and post-test mean score was 13.9 and SD 0.543 and the mean difference was 6.117 and calculated t value was 51.183 which is statistically significant at level of $p < 0.001$. The study concluded that the nurses improved their knowledge regarding importance of aseptic technique after planned teaching program

Keywords—Planned Teaching Programme, Importance of aseptic techniques and junior staff nurses.

INTRODUCTION

Aseptic technique means using practices and procedures to prevent contamination from pathogens. It involves applying the strictest rules to minimize the risk of infection. Healthcare workers use aseptic technique in surgery rooms, clinics, outpatient care centers, and other health care settings.¹

Nosocomial infections cause significant morbidity and incalculable human sufferings, increase mortality in patients, increase treatment costs, and increase the length of hospital stay, depriving other patients of the urgency needed and valuable hospital beds. According to the on-going national study for nosocomial infections being conducted by the Centers for Disease Control, significant hospital acquired infections will be diagnosed in 3 to 6% of all hospitalised patients.²

As per World Health Organization – out of every 100 hospitalized patients at any given time, 7 in developed and 10 in developing countries will acquire at least one health care-associated infections. Most Common types of HAIs includes Surgical Site infections (SSI), Urinary tract infections (UTI), Blood stream infections (BSI) and Ventilator Associated Pneumonia (VAP).³

Despite their best intentions, health professionals sometimes act as vectors of disease, disseminating new infections among their unsuspecting clients. Attention to simple preventive strategies may significantly reduce disease transmission rates. Frequent hand washing remains the single most important intervention in infection control. However, identifying mechanisms to ensure compliance by health professionals remains a perplexing problem. Gloves, gowns, and masks have a role in preventing infections, but are often used inappropriately, increasing service costs unnecessarily. While virulent microorganisms can be cultured from stethoscopes and white coats, their role in disease transmission remains undefined. There is greater consensus about sterile insertion techniques for intravascular catheters—a common source of infections—and their care. By following a few simple rules identified in this review, health professionals may prevent much unnecessary medical and financial distress to their patients.⁴

Aseptic technique is an important clinical practice that reduces the risk of patients acquiring an infection during invasive clinical procedures. It is essential that all clinicians are properly educated and trained in Aseptic Technique (AT) and apply the principles to ensure efficient, safe and standardised aseptic practice during *every* procedure. These adverse events cause unnecessary pain and suffering for patients and their families, prolong hospital stays and increase health care costs to the patient, the organisation and the health system.⁵

Nurses play an important role in the prevention and control of surgical site infections or SSI's because they undertake a high proportion of the treatment and care of surgical patients. Sterile technique plays a vital role in the control and prevention of SSI's and surgical site contamination.⁶

Hassa A. K et al conducted study on ¹Nosocomial infections: Epidemiology, prevention, control and surveillance reported that According to WHO estimates, approximately 15% of all hospitalized patients suffer from these infections. During hospitalization, patient is exposed to pathogens through different sources environment, healthcare staff, and other infected patients. Transmission of these infections should be restricted for prevention. Hospital waste serves as potential source of pathogens and about 20%–25% of hospital waste is termed as hazardous. Nosocomial infections can be controlled by practicing infection control programs, keep check on antimicrobial use and its resistance, adopting antibiotic control policy.

Dr Nilima R B conducted study on Planned teaching programme improves knowledge about nosocomial infections among staff nurses in regional centre in Maharashtra: A descriptive study was carried out at regional centre in Maharashtra consisted of 30 nurses who were working as registered nurse in the hospital. The questionnaires were designed and constructed by the researcher according to review of literature and related study. The study found that there was significant increase in nurses' knowledge regarding nosocomial infections after planned teaching programme. The study concluded that the nurses have appropriate knowledge toward nosocomial infection; however, it can be improved through a proper teaching programme.

In contrast, several studies done have reported there is need of proper teaching programme to improve the knowledge and practices regarding aseptic technique among nurses as education program had a positive effect on the nurses' attitudes and practices. It is recommended that educational programs for all nursing members especially for junior staff should be applied as continuing education to update and frequent refreshing their knowledge about how to deal patient with the aseptic technique. This study was undertaken to assess Effectiveness of Planned Teaching Programme on Knowledge Regarding the Importance of aseptic Techniques among Junior Staff Nurses Working at tertiary care hospital, Karad and it was observed whether it is implemented during practices.

REVIEW OF LITERATURE

Navjyot S, Manisha R, Priyanka K (2016): A descriptive survey design was adopted with 68 staff nurses selected by convenience sampling technique from selected hospital of Pilkhuwa, Hapur. Knowledge was assed using the structured knowledge questionnaire. Findings of study showed that mean knowledge score of staff nurses was 13.13 with median score of 14. Standard deviation of knowledge score was 3.25. Maximum staff nurses i.e. 43 (63.24%) were having average knowledge whereas 25 (36.76%) having knowledge poor average, none of the staff nurse was having adequate knowledge regarding aseptic techniques. On computation of chi square, it was found that there was no significant association of the knowledge score of the staff nurse with any demographic variables at 0.05 level of significance. Study concluded that Staff nurses were not having adequate knowledge regarding aseptic techniques, so there is a need of proper educational programmes to enhance knowledge of staff nurses regarding aseptic technique

Pankaj P., (2014): A Non- experimental; descriptive study designs with cross sectional approach were used to assess the knowledge and practices. The data were collected from 110 staff nurses working Dr. Vikhe sPatil Memorial Hospital at Ahmednagar by stratified sampling technique with using of the structured questionnaires and observational check list. Findings revealed that overall knowledge mean score was (11.56 ± 2.37) which is 57.80 % of the total score. It interprets that the staff nurses had 'Good' level of knowledge of aseptic technique applied in nursing practice. However, the overall practices mean score for (YES) was (15.08 ± 4.08) which is 75.40% of the total score. It interprets that the staff nurses maintain 'Very Good' practices of aseptic technique applied in nursing practice. However overall practices mean score for NO was (4.97 ± 3.12) which is 24.60%. There was Significant association found between the knowledge and the demographic variables of aseptic technique applied in nursing practice among staff nurses variables like Year of working experience (4.34). There was Significant association found between the practices for (YES) and the demographic variables of aseptic technique applied in nursing practice among staff nurses. Findings revealed that there was significant association found between the practices and the variables like sex (3.88) and professional qualification (3.87).

RESEARCH METHODOLOGY

Research approach and design: Quantitative research approach with pre-experimental one group pre-test posttest research design.

Setting: The study was conducted at tertiary care Hospital, Karad.

Target population: Junior Staff Nurses

Sampling technique: Simple random sampling.

Sample size: 60 Junior Staff nurses

INCLUSION CRITERIA

1. Willing to participate in the study.
2. Junior RGNM diploma & Basic B.Sc nursing degree Holders and work in general ward

EXCLUSION CRITERIA

1. ICU and Operation theatre nurses are excluded.
2. Nurses absent during data collection period.

DESCRIPTION OF THE TOOL

Section-A: It consists of age, gender, education

Section-B: It consists of structured knowledge questionnaire regarding importance of aseptic technique

METHOD OF DATA COLLECTION:

Research Ethics Committee of the Krishna Institute of Medical Science Deemed to be University, Karad, had given permission before the data collection. After obtaining permission from the setting the junior staff nurses were asked their willingness to participate in the study and informed consent was obtained. After collecting the demographic data, the pre-test level of knowledge regarding importance of aseptic technique was assessed After the pre-test, the planned teaching programme was conducted then after seven days the post-test knowledge was assessed by using same questionnaire.

RESULTS:**SECTION I: Description of samples according to demographic characteristics****Table1: Frequency and percentage distribution of samples according to their socio-demographic variables**

Sr.No		Variables	F	%
1	Age (Years)	21-25	59	98.33
		26-30	1	1.67
2	Gender	Male	10	16.67
		Female	50	83.33
3	Education	GNM	16	26.67
		B.B.sc.	44	73.33

F – Frequency % - percentage

Table 1 reveals Age wise distribution of sample reveals that majority 98.33% within the age group of 21-25 years. Gender distribution of sample reveals that about 83.33% were female. While 16.67% were male. The percentage distribution of staff nurses in educational qualification shows that among 73.33% were B.B.sc. and 26.67% were GNM.

SECTION II**Knowledge score among Staff nurses regarding importance of aseptic techniques****Table 2: Pre-test and post-test Knowledge score among Staff nurses regarding aseptic techniques**

Grades	Pre-Test		Post-Test	
	Frequency	Percentage	Frequency	Percentage
Poor (0-7)	23	38.33%	0	0%
Average (8-9)	36	60%	0	0%
Good (10-15)	1	1.67%	60	100%

Table 2 indicates most of the samples 36 (60%) were having average knowledge, 23 (38.33%) were having poor knowledge and 1(1.67%) were having good knowledge regarding aseptic technique in pre-test. However, after planned teaching program the knowledge of the staff nurses was increased it indicates that 60 (100%) samples were having good knowledge in post-test.

Findings related to Effectiveness planned teaching programme on knowledge regarding importance of aseptic technique among staff nurses:**Table 3: Comparison of pre-test and post-test knowledge score among staff nurses**

Phase	Mean	SD	Mean Difference	T Value	Significant
Pre-test	7.83	0.784	6.07	51.183	p<0.001
Post-test	13.9	0.543			

The table 3 indicates that the pre-test and post-test knowledge score among staff nurses the pre-test mean score was 7.83 with SD 0.784 and post-test mean score was 13.9 and SD 0.543 and the mean difference was 6.117 and calculated t value was 51.183 which is statistically significant at level of $p < 0.001$

SECTION III: Findings related to association between socio-demographic variables and knowledge score:

Table 4: Association between socio-demographic variables and knowledge score.

Sr. No	Demographic Variables	Variables	Knowledge score			Chi square value	Df	P Value
			Poor	Average	Good			
1	Age (Years)	21-25	23	35	1	0.6780	2	0.7125
		26-30	0	1	0			
2	Gender	Male	5	5	0	0.8261	2	0.6616
		Female	18	31	1			
3	Educational Qualification	GNM	12	4	0	12.470	2	0.0020*
		B.B.sc.	11	32	1			
		RS17000 and Above	11	32	1			

Data presented in table-4 revealed that there was significant association between the knowledge score and selected socio-demographic variables that educational qualification and income at the level of $p > 0.05$ and there was no significant association between the knowledge score and selected socio-demographic variables age and gender at the level of $p > 0.05$.

DISCUSSION:

The findings of the present study revealed that the pre-test and post-test knowledge score among staff nurses the pre-test mean score was 7.83 with SD 0.784 and post-test mean score was 13.9 and SD 0.543 and the mean difference was 6.117 and calculated t value was 51.183 which is statistically significant at level of $p < 0.001$. findings of present study supported the study conducted by **Pankaj P** Findings revealed that overall knowledge mean score was (11.56 ± 2.37) which is 57.80 % of the total score. It interprets that the staff nurses had 'Good' level of knowledge of aseptic technique applied in nursing practice. However, the overall practices mean score for (YES) was (15.08 ± 4.08) which is 75.40% of the total score. It interprets that the staff nurses maintain 'Very Good' practices of aseptic technique applied in nursing practice.

Navjyot Singh Findings of study showed that mean knowledge score of staff nurses was 13.13 with median score of 14. Standard deviation of knowledge score was 3.25. Maximum staff nurses i.e. 43 (63.24%) were having average knowledge whereas 25 (36.76%) having knowledge poor average, none of the staff nurse was having adequate knowledge regarding aseptic techniques. When comparing the result with present study 36 (60%) were having average knowledge, 23 (38.33%) poor knowledge and 1(1.67%) good knowledge regarding aseptic technique in pre-test. However, after planned teaching program the knowledge of the staff nurses was increased it indicates that 60 (100%) samples were having good knowledge in post-test. Both the Study concluded that Staff nurses were having adequate knowledge regarding aseptic techniques, still there is a need of proper educational programmes to enhance knowledge of staff nurses regarding aseptic techniques and continue for maintaining aseptic technique.

Babita Dhakal et al, 2016, conducted study on Nurses' Knowledge and Practice of Aseptic Technique in the Operation Theatre at selected Hospitals of Bharatpur , which reported 62.5 % respondents had high knowledge, 37.5% had average knowledge and none of the respondents had low knowledge on aseptic technique This study result was also slightly higher than the present study the samples 36 (60%) were having average knowledge, 23 (38.33%) were having poor knowledge and 1(1.67%) were having good knowledge regarding aseptic technique in pre-test.

CONCLUSION:

It is essential to raise awareness by frequent teaching programme to refreshing knowledge & practice. about aseptic technique on while providing nursing care to patients. The study concluded that the nurses improved their knowledge regarding importance of aseptic technique after planned teaching program and it should be implemented in continuous process and it was supervised, observed that they are implemented it while caring the patient.

REFERENCE

- [1] “AsepticTechnique”, available from URL <https://www.healthline.com/health/aseptic-technique>
- [2] A Zulkifli, MRCP*, T Thayaparan, MRCP**, W Fatimah***, S Salamah*, An Appraisal of the Practice of Aseptic Technique in Hospital - An Observational Study. *Med J Malaysia*. 1996;51(2):270-278.
- [3] V. Narendranath, B. S. Nandakumar, K. S. Sarala, Epidemiology of hospital-acquired infections in a tertiary care teaching hospital in India: a cross-sectional study of 79401 inpatients”, *Int J Community Med Public Health*. 2017 Feb;4(2):335-339, <http://www.ijcmph.com>.
- [4] H Saloojee, A Steenhoff, The health professional's role in preventing nosocomial infections, *BMJ journal*, January 2001 - Volume 77 – 903.available from URL <https://pmj.bmj.com/content/77/903/16>.
- [5] “Aseptic technique during invasive clinical procedures”.available from Url: <https://www.acipc.org.au/wp-content/uploads/2017/07/Aseptic-Technique-Aseptic-Technique-Policy-Practice-Guidelines.doc>
- [6] Leodoro J. Labrague*, Dolores L. Arteche, Begonia C. Yboa and Nenita F. Pacolor Operating Room Nurses’ Knowledge and Practice of Sterile Technique. *J Nurs Care*. 2012;1(4).
- [7] Hassan A K , ¹Fatima K B , ²Riffat M³ “Nosocomial infections: Epidemiology, prevention, control and surveillance”*Asian Pacific Journal of Tropical Biomedicine* 7,(5,) May 2017, Pages 478-482.AVAILABLE FROM URL: <https://www.sciencedirect.com/science/article/pii/S2221169116309509>
- [8] Dr Nilima Rajan Bhore “Planned teaching programme improves knowledge about nosocomial infections among staff nurses in regional centre in Maharashtra” *IJNH Vol 1 (4)*, 229-235, 2015.
- [9] Navjyot Singh, Manisha Rani, Priyanka Kumari Assessment of Knowledge of Staff Nurses Regarding Aseptic Techniques at Selected Hospital - A Descriptive Survey Study. *International Journal of Health Sciences & Research*. 2016; 6(9):290-294.
- [10] Pankaj P., Myursing P., Ravi K., Kedari S., Viraj K., Sarika K., Sujit M., Joshi N., Babasaheb G., Leena J., Mr. NileshMhaske. A Study to Assess the Knowledge & Practices of Aseptic Techniques Applied in Nursing Practice Among Staff Nurses Working in Selected Hospital, Ahmednagar. *VIMS Health Science Journal (VIMSHSJ)*: 2014, 1 (2): 18-21
- [11] Dhakal B, Angadi S, Lopchan M. “Nurses knowledge and practices of aseptic technique in the operation Theatre at selected Hospitals of Bharapur”. *Int Arch Biomed clin res* 2016 May 2(2):32-34. available from url: <https://www.researchgate.net/publication/304299703>.
