



A Study on the Effectiveness of Structured Teaching Program on Knowledge Regarding Prevention of Hospital Acquired Infection among Student Nurses of Selected Colleges of Meerut

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ABSTRACT

Background: Hospital acquired infections are most common in the developing countries like India. Improper handling and management of the biomedical or hospital waste is also an important cause of the health associated infections. This study aims to assess knowledge on prevention of hospital acquired infections among student nurses in selected nursing colleges.

Materials and method: The design used for study was experimental research design. The study was conducted on a sample of 50 student nurses. Self structured questionnaire was used as a tool for data collection.

Results: The study results revealed that **0(0%)** student nurses had good knowledge regarding prevention of hospital acquired infection and **30(60%)** student nurses had average knowledge before administering structured teaching program and **20(40%)** had poor knowledge. Post test results revealed that **9(18%)** student nurses had good knowledge score and **41(82%)** had average knowledge score after administration of structured teaching program on prevention of hospital acquired infection. Association of different demographical variables with the level of knowledge before undergoing structured teaching program was assessed using χ^2 and it has been found that there is no significant association between the level of knowledge and socio-demographic variable.

Conclusion: The findings of the study revealed that application of structured teaching program has increased the level of knowledge of student nurses to a great extent and there is no association between the levels of knowledge regarding prevention of hospital acquired infection among the student nurses of selected colleges in Meerut to their socio demographic variables.

KEYWORDS

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INTRODUCTION

Hospital acquired infections also known as to as health care associated infections (HAI) or nosocomial infection, are infections acquired in a hospital or other healthcare during the process of receiving health care that was not present during the time of admission⁸. Adequate knowledge regarding use of techniques like standard safety precautions, universal precautions and aseptic techniques can reduce hospital acquired infections to a great extent⁷. The health personnel, patients, communities and their environment are under potential risks of infections due to improper management of hospital/ biomedical waste management¹¹. Nosocomial infections, many of which are transmitted from patient to patient by poorly sanitized hands of health care workers exert a significant toll in human and economic terms every year. Interns in the hospital, is the most vulnerable group to commit mistakes regarding these two sensitive issues due to lack of practical knowledge².

Hospital-acquired infections can increase the morbidity and mortality rate as well as the cost of treatment⁸. Hospital acquired infection is spread by many ways such as invasive and non invasive surgical procedures, intravenous catheters, surface contact (hands) and also through the air. Some interventions include proper hand washing and decontamination of surface ,allocation of sufficient staffing, better ventilator management, maintain strict aseptic technique for central venous and urinary catheterization will considerably lower rate of nosocomial infection¹¹. Furthermore, biomedical or Hospital waste, body parts, organs, tissues, blood and body fluids along with soiled linen, cotton, bandage, and plaster casts from infected and contaminated areas along with used needles, syringes and other sharps, contains pathogens are the sources of hospital acquired infections. It's essential to maintain a proper and effective biomedical and effective management of biomedical waste, generated during diagnosis, treatment rehabilitative services. Any solid, fluid or liquid waste materials including its container and other product generated during short term and long term healthcare consisting observational, diagnostic, therapeutic and rehabilitative services at hospital settings¹¹.

STATEMENT OF PROBLEM

A study on effectiveness of structured teaching program on knowledge regarding prevention of hospital acquired infection among student nurses of selected colleges of Meerut.



OBJECTIVES OF THE STUDY

- To assess the knowledge on prevention of hospital acquired infection by pre-test scores.
- To administer structured teaching program among student nurses on prevention of hospital acquired infection in selected nursing college.
- To assess the effectiveness of structured teaching program
- To find the association between pre-test knowledge scores with selected demographic variables.

Hypothesis

- Ho1: There will be significant difference between mean pre and posttest knowledge scores of nursing students regarding prevention of hospital acquired infection.
- Ho2: There will be significant association between pre-test knowledge scores of nursing students with selected demographic variables.

MATERIALS AND METHODS

Research design

This study is pre-experimental, one group pre test post test, research design.

Setting of the study

The setting is the location where the study was conducted. The setting for present study was selected nursing colleges of Meerut.

Criteria for selection of sample

Inclusion criteria –

1. Those who are willing participate in the study.
2. Available during the time of data collection.

Exclusion criteria –

1. Those who are not willing participate in the study.
2. Not available during the time of data collection.

Development and description of the tool

Data collection tool instruments are the vehicle that could best obtain the data pertinent to the study and at the same time adds to the body of knowledge and the discipline.



A self structured questionnaire was constructed by the investigator after reviewing related literature and consulting subject expert in the field.

Method of developing instrument

Socio demographic questionnaire for background information

A self structured questionnaire was administered to assess the level of knowledge regarding hospital acquired infection.

Description of the data

Part A: - Demographic data would be analyzed of level of knowledge using frequency and percentage.

Part B: - Self structured questionnaire was administered to assess the level of knowledge regarding hospital acquired infection.

Data collection procedure

The main study was planned for a period of four weeks. 50 samples were collected through purposive sampling technique.

A self structured questionnaire was administered which comprised of two section demographic variable standard tool for assessing level of knowledge regarding hospital acquired infection.

Data pertaining to the characteristics of the sample

It is presented and analyzed in terms of frequency and percentage distribution.

Table 1 Distribution of sample according to age group

Age in year	Frequency	Percentage
18 – 20 years	11	22
20 – 21 years	21	42
22 – 23 years	9	18
24-25 years	9	18

Table 2 Distribution of sample according to gender

Gender	Frequency	Percentage
Male	36	72
Female	14	28

Table 3 Distribution of sample according to area of living

Domicile	Frequency	Percentage
Urban	29	58
Rural	21	42

Table 4 Distribution of sample according to level of nursing education

Board of examination	Frequency	Percentage
G.N.M.	16	32



Post Basic	16	32
B.Sc. nursing	18	36

Table 5 Distribution of sample according to area of clinical posting

Area of clinical posting	Frequency	Percentage
Government hospital	29	58
Private hospital	21	42

Table 6 Distribution of sample according to previous knowledge regarding hospital acquired infection and its prevention

Previous knowledge	Frequency	Percentage
Yes	36	72
No	14	28

Table 7 Distribution of sample according to source of knowledge on hospital acquired infection and its prevention

Source of Previous knowledge	Frequency	Percentage
Class room	10	20
Hospital	20	40
Books	17	34
Internet	3	6

Table 8 Comparison between pre test and post test knowledge score of students regarding hospital acquired infection and its prevention

S.No.	Description	Mean	S.D.
1.	Pretest knowledge	25.9	3.87
2.	Post test knowledge	32.9	3.34

Table 9 Chi- square value showing association between Pre-test knowledge score and selected demographic variables

Selected demographic variables	Pretest knowledge scores			X ² Value	Df	P-Value	Inference
	Poor	Average	Good				
Age				1.47	3	0.68	NS
18-19yr	5	6	-				
20-21yr	9	12	-				
22-23 yr	2	7	-				
24-25 yr	4	5	-				
Gender				0.81	1	0.37	NS
Male	13	23					
Female	7	7					
Area of Living				1.83	1	0.37	NS
Urban	10	19	-				
Rural	7	14	-				
Level of nursing education				2.52	2	0.28	NS
G.N.M.	5	11	-				
Post basic	4	12	-				
B.Sc. Nursing	9	9	-				
Area of clinical posting				1.83	1	0.37	NS
Government hospital	10	19	-				
Private hospital	7	14	-				
Previous knowledge				0.81	1	0.37	NS



regarding NI			
Yes	13	23	
No	7	7	
Source of Previous knowledge			
Class room	6	4	-
	2.67	3	0.44
			NS

RESULTS AND DISCUSSION

The research design adopted for this study was one group pretest post test design. The findings show that the association between Pre-test knowledge student nurse with demographic variables statistically tested by applying chi- square and all the variables were found not significant Purposive sampling technique was used to select 50 students. In the present study, the result indicated that **0(0%)** student nurses had good knowledge regarding hospital acquired infection and **30(60%)** student nurses had average knowledge before administering structured teaching programme and **20(40%)** had poor knowledge. The findings also show that **9(18%)** student nurses had good knowledge score and **41(82%)** had average knowledge score after administration of planned teaching program on prevention of hospital acquired infection the distribution of frequency according to their age, 11(22%) students were in the age group of 18 -19years, 21(42%) staff nurse are between 20 - 21 years, 9(18%) between 22 – 23 years, and 9(18%) students between 24 – 25 years.

Majority of students were males 36(72%) and only 14(28%) students were females. Maximum participants were from urban, 29(58%) and 21(42%) students were from rural area.16 (32%) participants were G.N.M students, 16 (32%) were post basic B.Sc. Nursing and 18(36%) B.Sc. Nursing. **Among the** participants, 29(58%) of them were posted in government hospitals and the remaining 21(42%) were posted in private hospitals. 36(72%) students had some previous knowledge on hospital acquired infection, whereas 14(28%) students had no previous knowledge on the topic. **Most of the** student nurses 20(40%), had previous knowledge regarding hospital acquired infections from class room teaching, ,10(20%) students had previous knowledge from hospital practice, 17 (34%) students had from books, and 3 (6%) students had from internet.

The comparison of pretest and post test results shows that the mean pre-test knowledge score is 25.9 and the dispersion of pre-test score (SD3.37) and the mean post test knowledge score is 32.9 and the dispersion of post test score (SD=3.34).



Chi-square test revealed that there was no significant association between the pre-test knowledge scores of staff nurse and their demographic variables.

The socio demographic variable Age had chi square value 1.47 at DF 3 and p value 0.68), gender had chi square value 0.81 at DF 1 and p value 0.37, area of living had chi square value 0.83 at DF 1 and p value 0.37, level of nursing education had chi square value 2.52 at DF 2 and p value 0.28, area of clinical posting had chi square value 1.81=3 at DF 1 and p value 0.37, previous knowledge had chi square value 0.81 at DF 1 and p value 0.37 and source of previous knowledge regarding hospital acquired infection had chi square value 2.67 at DF 3 and p value 0.44.

CONCLUSION

The study examined the knowledge regarding prevention of hospital acquired infection among student nurses. Majority of student nurses have average or inadequate knowledge on this topic. We would highlight the potential need to improve the knowledge and practices among nursing students on how to prevent health associated infections in hospital settings. Nurses have a key role in health care settings and in service education may be conducted to update the knowledge of Nursing students regarding topic. Most of the students gain knowledge from health care worker in clinical settings, so we need to improve clinical practices and teach in clinical area as well as in college¹⁰. The study can be replicated on a larger sample and also on other health care professional. The study could be done for a larger time period as this would give more significant results⁶.



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