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A Study to Assess the Effectiveness of Structured Teaching Programs on Knowledge Regarding Prevention of Nosocomial Infections among B.Sc. Nursing 1st Year Student at Baba Educational Society, Institute of Paramedical College of Nursing, Lucknow, Uttar Pradesh

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ABSTRACT

Nosocomial infection also referred to as health care associated and hospitals acquired infection are infection acquire during the process of receiving health care that was not present during the time of admission. Nosocomial infection overall prevalence rate was 3.76%, surgical intensive care unit (25%), medical ICU (20%), burns ward (20%) and pediatric ward (12.17%) were identified to have significant association with Nosocomial infections.

The majority of the patients had prior admission to other wards before admission to ICU. Males were more commonly represented than females and almost all patients had been mechanically ventilated with a median period of 8 days of ventilation.The incidence occur depends upon the intrinsic host factor extrinsic environment factor. Mortality increases in order to LRI, BSI, UTI, long term physical and neurological consequences. The objective of study was to assess the knowledge regarding nosocomial infections among BSc Nursing 1st year student. Analysis showed that in pre-test student had moderate knowledge as compared the post-test. The mean post-test score of 2 was higher then the mean pre-test score of 13.97, which was significant at p-value of 0.05 level which showed significant increase in knowledge and thus it proves the effectiveness of the structured teaching programme. Hence, it can be concluded that the structured teaching programme was effective in improving the knowledge of student regarding nosocomial infections.

Keywords: Assess, effectiveness, structured teaching programme, knowledge, Nosocomial infections.

INTRODUCTION

Nosocomial or healthcare associated infections appear in apatient under medical care in the hospital or other health care facility which was absent at the time of admission. These infections can occur during health care delivery for other diseases and even after the discharge of the patients. Nosocomial infection comes from Greek word “NOSUS” meaning disease and “KOMEION” meaning “ to take care of.

Infection are considered nosocomial if they are first appear 48 hours are more after hospital admission or within 30 days after discharge. Nosocomial infections also referred to as healthcare-associated infections (HAI), are infection acquired during the process of receiving health care that was not present during the time of admission.

Nosocomial infections are a significant and increasing issue in contemporary healthcare. Outbreaks of nosocomial infections are not uncommon in hospitals settings and various pathogens can be responsible. The prevention and control of nosocomial infections requires the implementation of a number of infection control interventions.

Nosocomial infection is an infection originating in a patient in hospital. It is a serious hospital health hazard worldwide. In spite of advance in the prevention and control programmes of Nosocomial infection, they continue to be a major side effect of hospital and contribute significantly to the rate of morbidity, mortality and cost of care. The Nosocomial infection is a problem, world over all the hospital. However, due to emergency of HIV Infection the need to prevent and control Nosocomial infection is being emphasized. The aim is to reduce Nosocomial infection and ensure that no one acquires HIV infection from the hospital by strictly observing the precaution recommended for handling blood and the body fluids, precautions related to injections, skin piercing and invasive procedures, effective use of sterilization, disinfection and disposal of infective waste.

Infections developing in patients after admission to the hospital, which was neither present nor in the incubation period at time of hospitalization. They may become evident during patients stay or after their discharge. Nosocomial infections or healthcare associated infections occur in patients under medical care. These infections occur worldwide both in developed and developing countries. Nosocomial infections accounts for 7% in developed and 10% in developing countries. As these infections occur during hospital stay, they cause prolonged stay, disability, and economic burden. Frequently prevalent infections include central line-associated bloodstream infections, catheter-associated urinary tract infections, surgical site infections and ventilator-

associated pneumonia. Nosocomial pathogens include bacteria, viruses and fungal parasites. 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. Efficient surveillance system can play its part at national and international level. Efforts are required by all stakeholders to prevent and control nosocomial infections. There were 663 patients admitted to the ICU during the two-year study period. This represented 2891 total patient days of admission during which patients were ventilated for 2175 days. Of the 663 admissions, 114(17%) developed culture-confirmed nosocomial sepsis.

REVIEW OF LITERATURE:

Ashok kumar sharma (2018) conducted a pre-experimental study to assess the effectiveness of structured teaching programs on knowledge regarding nosocomial infections among staff nurses in selected hospital at Jaipur, Rajasthan. The aim of study to evaluate the effectiveness of structured teaching programs regarding nosocomial infections among staff nurses .the pre-experimental research design for this study. 80 staff nurses sample selected for this study. The study revealed that mean of post–test of nosocomial infections was pre-test are 12.91+_ 1.700, post test are 22.04+_ 2.015 as per the table the mean deference of pre vs post test is (9.125) and the t- ratio to be significantly as the obtained value (30.953) is higher then the tabulated value (2.00) required for the t-ratio to significant at 0.05 level of confidence. According to study which indicate that mean and SD of pre vs post test on practice staff nurses regarding nosocomial infection with their selected demographic variables that is pre test are 9.50+_ 1.293, post test are 14.41+_ 1.328 as per table value the mean deference of pre vs post test (4.913) and t-ratio was statically obtained value (23.706) higher then table value (2.00).

PROBLEM STATEMENT:

Study to assess the effectiveness of structured teaching programs on knowledge regarding nosocomial infections among B.Sc Nursing 1st year student at Baba Educational society, Institute of paramedical college of Nursing, Lucknow.

OBJECTIVES:

1. To assess the pre existing knowledge regarding prevention of nosocomial infections among B.Sc Nursing 1st year student.
2. To assess the effectiveness the planned teaching program regarding prevention of nosocomial infections.
3. To determine the association between pre-test knowledge score with their selected demographic variables.

HYPOTHESIS:

H1: There will be a significant difference between pre-test, Post-test knowledge regarding prevention of nosocomial infections among B.Sc Nursing 1st year student.

H2: There will be a significant association between the Pre-test knowledge score with their selected demographic variable.

MATERIAL AND METHOD:

Research approach: Quantitative research design.

Research design: The research design selected for the present study was pre-experimental one group pre-test and post-test design.

Research setting: The study will be conducted in Baba Educational society, institute of paramedical college of Nursing, Lucknow Uttar Pradesh.

Sample size: Sample size consist of 30 students studying in BSc Nursing 1st year.

Sampling techniques: Non-probability convenient sampling.

Population: In this study population comprise of BSc Nursing 1st year student from Baba Educational society, institute of paramedical college of Nursing, Lucknow Uttar Pradesh.

1. **Target population:** In this study the target population is BSc Nursing 1st year student of Baba educational society, institute of paramedical college of Nursing Lucknow,Uttar Pradesh.
2. **Accessible population:** In this study the accessible population is BSc Nursing 1st year student who are available during study at Baba Educational society, institute of paramedical college of Nursing, Lucknow Uttar Pradesh

Variables: The categories of variables discussed in the present study were:

1. **Demographic variable:** It include age, educational status, types of residential area, previous knowledge regarding nosocomial infections, source of information & previous experience regarding nosocomial infections.

2. **Independent variables:** The Planned Teaching programme on knowledge regarding nosocomial infections.
3. **Depending variables:** Knowledge level of student regarding prevention of nosocomial infections.

Criteria for Sample selection :

1. **Inclusive criteria**:
    - Nursing student who are studying in BSc Nursing 1st year.
    - Nursing student who are willing to participate in the study.
    - Nursing student of BSc Nursing 1st year student who are available at the time of data collection.
2. **Exclusive criteria:**
    - B.Sc Nursing 1st year student who are not willing to participate.
    - BSc Nursing 1st year student who are not present during the study.

Development and description of the tool: The tool consist of 2 sections:

Section A: Demographic variable which consist of 5 items.

Section B: It consist self structured knowledge questionnaire regarding prevention of nosocomial infections. It consist of 27 questions each correct answer score one and zero for wrong answer thus the maximum score will be 27.

Data collection procedure: Data collection process started after obtaining permission from college authority. A written consent was taken to each participant. A total of 30 sample were selected by non-probability convenient sampling method as per the sample selection criteria.

Pre-test knowledge of BSc Nursing 1st year student was assessed by self administered questionnaire, which took nearly 10 min, followed by administartion of structured teaching programme regarding prevention of nosocomial infection on same day. After 2 days of completion of pretest, a post test was conducted to assess the knowledge level of student regarding prevention of nosocomial infection.

RESULTS AND DISCUSSION:

Analysis is the process of organising and synthesising the data in such a way that research question can be answered and hypothesis tested. This chapter presents the analysis and interpretation of the data, collected to assess the knowledge regarding prevention of nosocomial infection. Analysis and interpretation of collected data dome on the basis of objective and hypothesis of the study using descriptive and inferential statistic.

Organization of the finding of final study:

The findings of study was organized into three sections:

Section A : Distribution of sample based on their demographic variables

Section B : Pre-test and post test knowledge level of BSc Nursing 1st year student.

Section C: To assess the effeectiveness of structured teaching plan on knowledge regarding prevention of nosocomial infection.

Section D: Association between pretest knowledge level with their selected demographic variables regarding prevention of nosocomial infection.

SECTION A: DISTRIBUTION OF SAMPLE BASED ON THEIR DEMOGRAPHIC VARIABLES

Table 1: Frequency and percentage distribution of the sample based on demographic variables (N=30)

S.N.	Socio- demographic variables	Description	Frequency	%
1	**Age in year**	a) 18-19 b) 20-21 c) 22-23 d) Above 23	18 11 0 1	66% 36% 0 3.3%
2	**Religion**	a) Hindu b) Muslim c) Sikh d) Christians	28 2 0 0	93.3% 6.6% 0 0

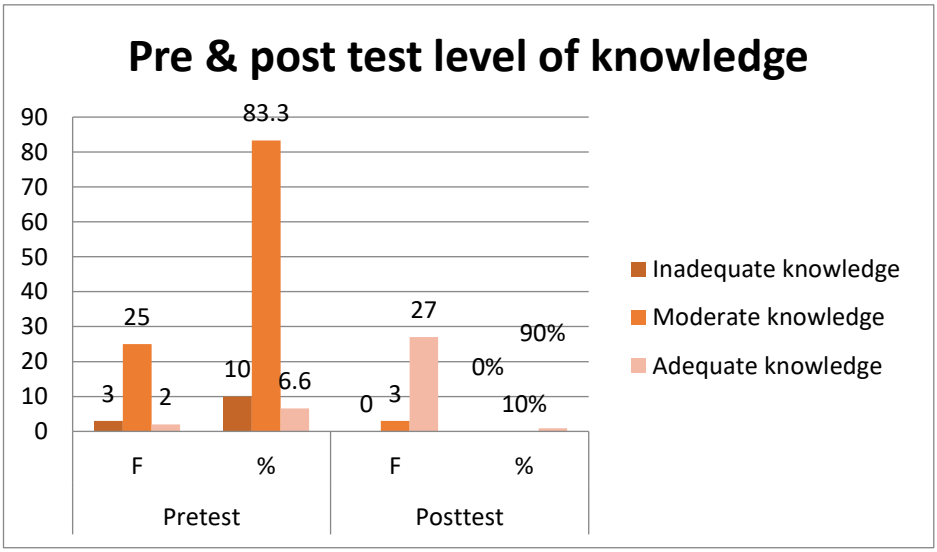
3	**Types of family**	a) Nuclear b) Joint c) Extended d) Childless	5 25 0 0	16.6% 83.3% 0 0
4	**Previous knowledge regarding prevention of nosocomial infections**	a) Yes b) No	12 18	40% 60%
5	**If yes, Sources of information**	a) Personal experience b) During clinical posting c) Mass media d) Other	7 4 10 9	23.3% 13.3% 33.3% 30%

Above table explains that the majority of participants i.e. 18(66%) belongs to age group of 18-19 years and none of them belongs to age category of 22-23 years. In term of religion of maority of samples i.e. 28(93.3%) belongs to samples Hindu religion & none of them belongs to Sikh and Christian religion. In term of types of family majority of samples i.e. 25(83.3%) belongs to joint family and 5(16.6%) belongs to nuclear family. In term of previous knowledge majority of participants i.e. 18(60%) having no previous knoowledge while 20(40%) having some level of knowledge regarding prevention of nosocomial infection. In term of source of information majority of sample i.e. 10(33.3%) getting the infromaton from mass media and only 4(13.3%) got the some level of information during their clinical posting.

SECTION B : PRE-TEST AND POST TEST KNOWLEDGE LEVEL OF BSC NURSING 1ST YEAR STUDENT

Table 2: Pre & post test knowledge level of BSc Nursing 1st year student

Knowledge level	**Pretest**		**Posttest**	
	F	**%**	**F**	**%**
Inadequate knowledge	3	10	0	0%
Moderate knowledge	25	83.3	3	10%
Adequate knowledge	2	6.6	27	90%



The table shows that in pretset majority of participants i.e. 25(83.3.%) had moderate knowledge followed by 3(10%) had inadeuqate knowledge and 2(6.6%) had adequate knowledge regarding prevention of nosocomial infections. Whereas in post-test majority of samples i.e. 27(90%) having adequate knowledge followed by 3(10%) have moderate knowledge and none of them having inadequate knowledeg regarding prevention of nosocomial infection.

SECTION C: TO ASSESS THE EFFEECTIVENESS OF STRUCTURED TEACHING PLAN ON KNOWLEDGE REGARDING PREVENTION OF NOSOCOMIAL INFECTION.

Table 3: effectiveness of STP on knowledge regarding prevention of nosocomial infection

Test	**Mean**	**Standard deviation**	**Total mean %**
Pre- test	13.97	4	51.74%

Post- test	2	6.4	81.48%
Total mean difference			29.74%

Above table shows that in pretest mean percentage was 13.97 and standared deviation was 4 and total mean percentage was 52.74% while in post test the mean was 2 and standard deviation was 6.4 and total mean percentage was 81.48%. So, total mean difference was 29.74. obtained 't' value was 11.45 and table value was 2.02 which was less then tthe obtained table value. It prove the structured teaching programme was highly effective in improving the knowledge regarding nosocomial infections among B.Sc Nursing 1st year student. So H1 hypothesis was accepted.

Section D: Association between pretest knowledge level with their selected demographic variables regarding prevention of nosocomial infection

Table 4: Association between pre-test knowledge score regarding nosocomial infections with selected demographic variables

Demographic variables	**Level of Knowledge**			**Chi square value (x^2)**	**Level of significance**
	Inadequate	**Moderate adequate**	**Adequate**		
1. Age in year					
a) 18-19	1	16	1	9.43	NS
b) 20-21	2	7	2		
c) 22-23	0	0	0		
d) Above 23	0	1	0		
2. Religion of sample					
a) Hindu	3	22	3	2.527	NS
b) Muslim	0	2	0		
c) Sikh	0	0	0		
d) Christians	0	0	0		
3. Types of family					
a) Nuclear	0	6	2	3.484	NS
b) Joint	3	18	1		
c) Extended	0	0	0		
d) Childless	0	0	0		
4. Previous knowledge regarding noso-comial infection					
a) Yes	2	8	2	2.19	NS
b) No	1	16	1		
5. If Yes (source of information)					
a) Personal experience	0	6	1	4.728	NS
b) Clinical posting	0	4	0		
c) Media sources	1	8	1		
d) Other sources	2	6	1		

The above table showed the association between Pretest Knowledge Score with their selected demoraphic variables. Analysis shows that demographic variables like age, religion, types of family, previous knowledge & source of information was not significantly associated with their knowledge level.

There is no relationship between pre-test knowledge score with their selected demographic variables. So, null hypothesis is accepted and research hypothesis is (H_2) rejected.

CONCLUSIONS AND DISCUSSION:

It prove the structured teaching programme was highly effective in improving the knowledge regarding prevention of nosocomial infections among B.Sc Nursing 1st year student. So H1 was accepted and there is no significant association between pre-test level of knowledge regarding nosocomial infections among B.Sc Nursing 1st year student.

The present study result showed that in pre-test majority of students have inadequate and moderate knowledge regarding nosocomial infections and after the structured Teaching program the knowledge was improve among B.Sc Nursing 1st student. So this study proved that significant difference was there between pre-test, and post-test knowledge and also found that structured teaching programme was effective to improving the knowledge regarding nosocomial infections B.Sc Nursing 1st year student. The reason for lack score is lack of theoretical and clinical training on nosocomial infection. Study recommended that giving adequate knowledge and for all health professionals and effective teaching session regarding nosocomial infection can improve the skill of Nursing students on nosocomial infections.

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