International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 08 Issue: 09 | Sept - 2024 SJIF Rating: 8.448 ISSN: 2582-3930

A Study to Assess the Effectiveness of Planned Teaching Programme (PTP) on Standard Precautions among Final Year B.sc Nursing Students at Selected Nursing College, Bangalore, Karnataka

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Abstract:
Background: Nursing students are at risk of acquiring and transmitting infectious diseases. The nursing students are expected to have sufficient knowledge and compliance with standard precautions to enable preventing and controlling Hospital acquired infections.

Aim: The aim of the study is to evaluate the effectiveness of a planned teaching program on standard precautions among nursing students.

Methodology: Quantitative approach with one group Pre-test and Post-test Research Design was used for the study. The Sample Consist of 30 final Year B.sc Nursing Students and Non probability purposive sampling technique was used for this study. Study conducted in selected Nursing College of Bangalore. The data was gathered through Structured Knowledge Questionnaire on standard precaution.

Results: Post-test Mean percentage knowledge score (Mean percentage =76.08 and SE = 0.38) was found higher than Pre-test Mean percentage knowledge score (Mean percentage = 57.06 and SE = 0.48). Enhancement of Mean Percentage was 19.1 %.

Conclusion: The study found that the planned teaching program was effective in enhancing standard precautions compliance among nursingstudents. The Knowledge on standard precaution among the nursing students was high. A continuous effort to improve adherence to standard precautions in nursing students is necessary to protect and prevent hospital acquired infection.

Key Words: Standard precautions, Nursing students, plannedteaching program, Infection control, Hospital acquired infections.

Introduction

Standard precautions are defined as “the minimum infection prevention practices that apply to all patient care, regardless of suspected or confirmed infectious status of the patient, in any setting where health care is delivered[1].

The idea of standard precautions that were developed and practiced long ago in healthcare history is to ensure the minimum infection prevention practices in healthcare. To ensure the adequacy and timely of standard precautions, it was modified and updated in response to different risks of exposure among healthcare workers (HCWs) in order to improve the well-being of HCWs and patients. HCWs, especially nurses, are at risk of acquiring infection through occupational exposure in different healthcare settings[2].

Health care providers such as doctors, nurses and other health professionals are more exposed to the professional hazards due to working environment of the hospitals. The common biological hazards or risk which may occur to health care professionals in a hospital are hospital acquired infections(HCI),such as Hepatitis HIV, Urinary tract infections, respiratory tract infections etc[3].

Health care professionals are constantly exposed to microorganisms. Many of which can cause serious or even lethal infections. Nurses in particular are often exposed to various infections during the course of carrying out their nursing activities. Nursing students are also at risk of such infections and injuries due to accidental contamination during their practical occupational exposure[4].

Standard precautions are based on the principal that all blood body fluids secretions excretions, non-intact skin and mucous membranes any contain transmissible infections agents. The Standard infection control precautions are meant to reduce the risk of transmissions of blood borne and other pathogens from both recognized and unrecognized sources. They are the basic level of infection control precautions which are to be used, as minimum in the care of all patients[5].

Approximately 3 million health care workers (HCWs) experienced percutaneous exposure to blood borne viruses each year. This results in an estimated 16,000 hepatitis C, 66,000 hepatitis B, and 200 to 5000 HIV infections annually. More than 90% of these infections are occurring in low income countries and most are preventable[6].

The standard precautions were established mainly to prevent and control healthcare-associated infections (HAIs) which are infection acquired within 48 hours or more after admission in healthcare setting while receiving treatment for other conditions. Getting infection at healthcare setting leads to health care-associated sepsis. The mortality of health care-associated sepsis among the hospitalized adults was estimated between 20% and 30%[1].

A cross-sectional study was conducted to assess knowledge and degree of compliance regarding standard precautions among student nurses.The sample size was 58 Student nurses. The data was collected with the help of self report questionnaires regarding standard precautions. The results revealed majority (89.7%) of the student nurses have good knowledge (students are satisfactorily well versed with the concepts of standard precautions) (m = 14.45/19) and high compliance (m = 3.59) of standard precautions. The use of mask has the highest degree of compliance (m = 3.95) while the use of eye goggles has the lowest degree of compliance (m = 3.19). Findings suggest no significant association between knowledge and compliance with standard precautions. The study concluded that teaching approaches must be geared towards intensifying further the compliances especially with the use of other protective equipments such eye goggles and gloves[2].

Objectives:

1. To assess the knowledge regarding standard precautions among Final Yr B.sc Nursing students.
2. To analyze the effectiveness of planned teaching programme regarding standard precautions.
3. To find out the association between knowledge score regarding standard precautions with selected demographic variables.

Hypothesis:

H1: There is significant difference between pre-test and post-test knowledge score among Final Yr. BSc nursing students regarding standard precautions.

H2: There is significant associations between knowledge score of Final YrB.Sc nursing students regarding standard precautions with selected demographic variables.

Variables under study:

Dependent Variable: Knowledge on Standard Precautions.

Independent Variables: Planned Teaching Program on Standard Precautions

Demographic Variables: Age, Gender, Previous Knowledge on Standard Precautions.

Assumptions:

1. Students will be having limited knowledge on Standard precautions.
2. Student nurses are often exposed to various infections during their clinical education.

Delimitations: The study was limited to under graduate students who are studying in Final Year Bsc Nursing.

Materials & Methods:

Sources of Data: The data was collected from Final Yr B.ScNursing studentsstudying in selected Nursing College.

Research Approach: Quantitative research approach is used to assess the Effectiveness of Planned teaching program among Final Yr. BSc Nursing students on standard precautions

Research Design: A Pre- Experimentalone group Pre-test and Post-test Research Designwas adapted for the present study.

Research Setting: The Study was conducted in selected Nursing college of Bangalore.

Populations: The Target Population of Study were Final Yr. B.Sc. Nursing Students.

Sampling Technique: The sampling technique used in this study was Non probability purposive sampling technique.

Sample Size: Sample size for the study was 30 subjects.

Inclusion Criteria:

- Subjects who are all studying Final Yr. BSc nursing
- Subjects who are available at the time of data collection

Exclusion Criteria:

- Subjects who were not available at the time of data collection

Description of the tool:

Section – A: Demographic variables 3 questions (Age, Gender, Previous Source of knowledge on Standard Precaution).

Section– B: Knowledge questionnaire on standard precautions comprised of 25 questions.

Results:

Section I: Demographic characteristic:

Table No 1: Distribution of subjects according to frequency and percentage:

N= 30

Sl.No	Demographic variables		Frequency	Percentage
1	Age in Years	18-20	01	3.33
		21-23	27	90.0
		Above 23	02	6.66
2	Sex	Male	09	30.0
		Female	21	70.0
3	Previous Source of knowledge on Standard Precaution	Teacher	11	36.66
		Journals	04	13.33
		Books	11	36.66
		Clinical field	04	13.33

From the above table-1, demographic characteristic of samples found that majority (90.0%) of the samples were in the age group of 21-23 Years, 70.0 % of the samples were females, 36.66 % of the samples received information on standard precautions from teachers and Books respectively.

Section II: Comparison of Pre-test and Post-test knowledge score of subjects on Standard Precaution.

Table no 2: Distribution of Subjects based on Pre-test Knowledge level

N=30

Sl.No	Level of Knowledge	Frequency	Percentage
1	Moderate(10-18)	25	83.33
2	Adequate(19-25)	05	16.66

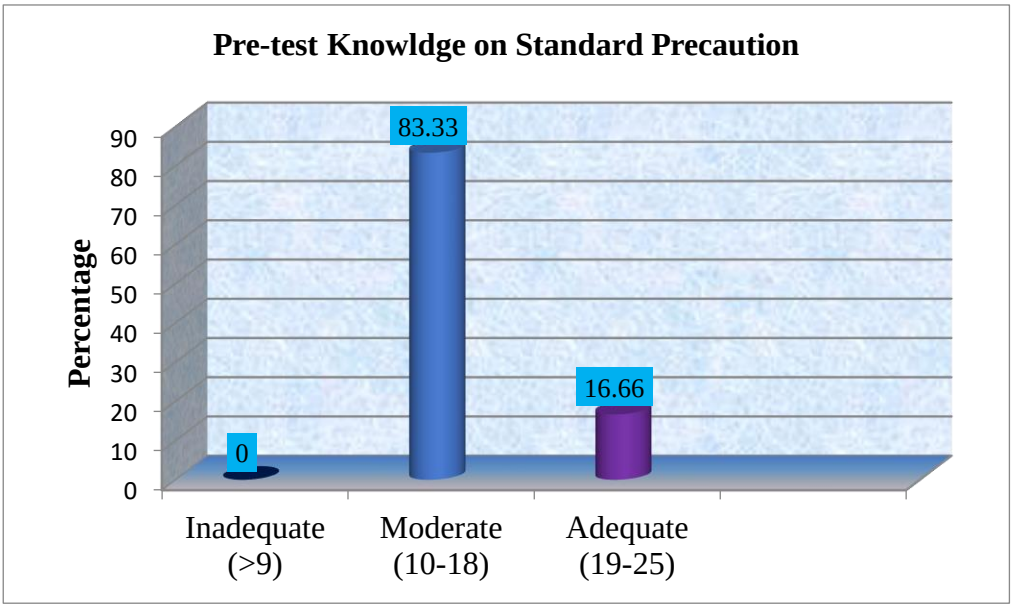

Fig no1: Cylindrical diagram showing Pre-test knowledge levels of the Final Year Bsc Nursing students on Standard Precaution.

The above diagram shows that among the 30 respondents; Most of respondents25 (83.33%) had Moderate level of knowledge and (16.66%) subjects had adequate knowledge on Standard Precaution.

Table no 3: Distribution of Subjects based on Post-test Knowledge level

N=30

Sl.No	Level of Knowledge	Frequency	Percentage
1	Moderate(10-18)	07	23.33
2	Adequate(19-25)	23	76.66

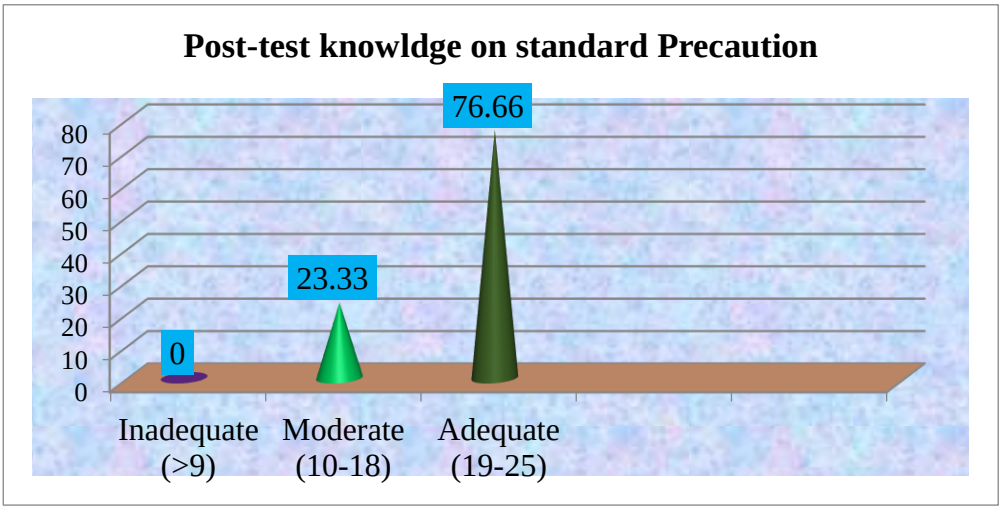

Fig no 2: Cone diagram showing Post-test knowledge levels of the Final Year Bsc Nursing students on Standard Precaution.

The above diagram shows that among the 30 respondents; Most of respondents 23 (76.66%) had adequate level of knowledge. It shows the planned teaching programme was effective in improving the knowledge of respondents on standard precautions.

Table 4: Comparison between Pre-test and Post-test knowledge scores

N=30

Aspects	Max Score	Respondents knowledge			Paired 't' Test
		Mean	SE of mean	Mean%	
Pre-test	25	**14.4**	**0.48**	**57.6%**	**12.46****
Post-test	25	**19.2**	**0.38**	**76.8%**	

Maxi score = 25 **Table valve t29=2.045, P< 0.05).**

Highly Significant**

The findings in the above table reveal that the Post-test Mean percentage knowledge score (Mean percentage =76.08 and SE = 0.38) was found higher than Pre-test Mean percentage knowledge score (Mean percentage = 57.6 and SE = 0.48). Enhancement of Mean Percentage was 19.2%. It is evident from the data presented in Table 4 that calculated t value (12.46) was greater than table valve (t29=2.045, P< 0.05). Hence research hypothesis was

accepted. This indicates that planned teaching programme was effective in improving the knowledge of nursing students on standard precaution.

Section III: Association of the Pre-test knowledge scores and selected demographic variables.

Table no 5: Association between Pre-test knowledge score of Final Year Bsc Nursing students on Standard Precaution and selected demographic variables

N =30

Sl No	Demographic variables		Median and below	Above median	Total	Chi square value	df	p value	inference
1	Age in Years	18-20	0	1	01	0.673	1	< 0.05	NS
		21-23	19	10	29				
2	Sex	Male	04	06	10	0.117	1	< 0.05	NS
		Female	10	10	10				
3	Previous source of Knowledge on universal Precaution	Teacher/ Clinical Field	07	07	14	1.093	1	< 0.05	NS
		Books/ Journal	05	11	16				

χ 2 (1) =3.841, P<0.05

NS = Not significant

The data presented in Table 5 shows the association between Pre-test knowledge score of subject onstandard precautions with selected demographic variable. The calculated chi-square value for all variables was less than table value. Hence it was concluded that Pre-test knowledge score of Final Year Bsc Nursing students on standard precaution had no association with the selected demographic characteristics.

Discussion: In the present study demographic characteristic of samples found that majority (90.0%) of the samples were in the age group of 21-23 Years, (70.0) % of the samples were females, (36.66) % of the samples received information on standard precautions from teachers and Books respectively.In pre test Most of respondents 25 (83.33%) had Moderate level of knowledge and (16.66%) subjects had adequate knowledge on Standard Precaution.In post test Most of respondents 23 (76.66%) had adequate level of knowledgeon Standard Precaution.Post-test Mean percentage knowledge score (Mean percentage =76.8 and SE = 0.38) was found higher than Pre-test Mean percentage knowledge score (Mean percentage = 57.6 and SE = 0.48). Enhancement of Mean Percentage was 19.2%.The calculated t value (12.46) was greater than table valve (t29=2.045, P< 0.05).Hence research hypothesis was accepted. This indicates that planned teaching programme was effective in improving the knowledge of Final Year B.scNursing students on Standard Precaution.The study findings are consistent with study conducted by Angeloni NLN et al. The study findings revealed that there was a significant difference between the scores of healthcare professionals before (16.20 ± 1.51) and after (16.90 ± 1.31) the educational intervention standard precautions (W=3.336; p < 0.05).

Conclusion: The world health organizations (WHO) emphasizes the need for effective education and training programs to promote adherence to standard precautions. It is undeniable that knowledge of standard precautions is important for a proper practice of the standard precautions. This study was aimed to evaluate the effectiveness of planned teaching program on standard precautions among nursing students, with the goal of enhancing their knowledge and their by practices. To ensure continuous knowledge acquisition and skill enhancement, it is necessary to have regular training sessions for nursing students. TheParticipation in any specific standard precaution trainingshould be emphasized.

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