DOI Number: 10.5958/0974-9357.2019.00057.6

A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Universal Precaution among Basic B.sc Nursing First Year Student of State College of Nursing, Dehradun, Uttarakhand

Dhasmana Shivani[1], Yadav Rashmi[2]

[1]Lecturer Gangasheel School of Nursing, Bareilly, Uttar Pradesh, [2]Principal State College of Nursing Dehradun

Abstract

Introduction : Changing technologies & expanding knowledge are increasing the responsibilities of nurses in complex health care environment. Nursing students take maximum responsibility of providing care in the inpatient department of any nursing college across the world in their professional career and express the most vulnerable group to exposure to all types of blood borne pathogens.

Methodology: A pre experimental one group pre test post test design was used for the study. The subjects were 5o basic b.sc nursing students selected by non probability conveniences sampling technique. Structured teaching programme (STP) was administered after the assessment of pre test knowledge on universal precaution. Post intervention knowledge was assessed on the 7 day of the administration of STP through the same structured knowledge questionnaire.

Result: The study shows that the out of 50 samples most of the students 32(64%) was having average knowledge, 15(30%) of samples were having poor knowledge and 3(6%) of the samples were having good knowledge. Pre test mean score was 19.46 with 3.53 of SD. After administering structured teaching programme 45 (90%) samples were having good knowledge, 5(10%) of the samples were having average knowledge and none of the samples were having poor knowledge. The post test mean score was 28.96 with 2.51 SD with a mean difference of 9.5 as evidence from‘t’ value of 15.57 at 49 df at < 0.05 level of significance. The independent‘t’ test depicts that only gender is associated with the pre test knowledge score, else no demographic variable show any significant association with their knowledge regarding universal precaution.

Conclusion: The study concluded that structured teaching programme was effective in increasing the knowledge regarding universal precaution among Basic B.sc Nursing students. Findings of the study focuses that there should be such type of teaching programme for all the health care workers so that they can practise according to the knowledge and prevent the risk from infectious materials.

Keyword:- *Universal precaution, effectiveness, knowledge, association, structured teaching programme, B.sc Nursing First year students.*

Introduction

Nursing has always been at the forefront of preventing the spread of infection among patient and personnel in the health care setting. [1]

Nurses are considered as the important and largest group in health care delivery system. Due to their numerous job responsibilities and the nature of their

Coresponding Author :
Ms. Shivani Dhasmana
29 Ballupur Near Shiv Mandir Dehradun
Uttarakhand, Mobile : 7895287902
Email : shivani.da23@gmail.com

work, they are frequently exposed to the blood and body fluids of the patients.[2]

Nursing students plays a very important role in delivering care to the patients in the hospitals and are potentially exposed to blood and body fluids in the time of their clinical posting; therefore they are at the risk of getting infection with blood borne pathogens. The activities that basically put the students at a risk of blood borne infections are percutaneous injury (e.g. Needle stick or cut with a sharp instruments), contact with mucous membrane of eyes or mouth, contact with non intact skin (particularly when exposed skin is chapped, abraded or afflicted with dermatitis), contact with intact skin when the duration of infected blood or body fluid is prolonged (several minutes to hours). [3]

Nursing students take maximum responsibilities to provide nursing care in the inpatient and outpatient department of any nursing college across the world in their early period of professional career and express the most vulnerable group to the exposure to all types of blood borne pathogens including human immunodeficiency virus (HIV) and hepatitis B virus (HBV). [4]

Nursing students are accidentally exposed to blood borne pathogens and body fluids because of many reasons i.e. nature of their work, extensive contact with the sick patients, lack of experience and curiosity in learning new things. The nursing students require the knowledge about the policies and procedures of the hospital and the institute to avoid these exposures i.e. universal precautions and others. [5]

Universal precautions are a set of effective practices that are designed to protect the health care workers and patients from getting infection with a wide range of the pathogens including blood borne pathogens. These practices are used when a health care worker is caring for all the patients regardless of their respective diagnosis, these were applied universally. It is not feasible, effective or even cost effective to test all the patients for all the pathogens before providing the care to identify that who are infected and for whom these precautions should be taken.[6]

The statement given by the centre of disease control is the concept of universal precaution stresses that the entire patient should be treated as though they have potential blood borne infection & can infect the caring health care workers. The aim of universal precaution is to protect both the health care workers from being infected & the uninfected patients from getting infected by the health workers. [7]

Universal precautions involves good hand hygiene habits, such as hand washing and the use of personal protective equipments(PPE) such as gloves, gown , mask, caps and other barriers, correct handling of sharps and aseptic techniques. [8]

Method

Design, Sample and Setting: A quantitative evaluative approach with pre experimental design (one group pre test post test design) was used for the study to assess the knowledge of basic b.sc nursing first year students. The study was conducted in basic b.sc nursing first year students of State college of nursing, chander nagar Dehradun. The total numbers of 50 students were selected by the non probability convenient sampling techniques who were fulfilling the selection criteria. The tool used for conducting the study was a set of demographic variables and self structured inventory on universal precaution. Structured teaching programme on universal precaution was prepared . Pre test was conducted by administering the structured questionnaire then structured teaching programme was given and after 7 days post test was conducted. Data was analysed with the help of descriptive and inferential statistics.

Description of tool : the tool consist of two part. **Section I: Socio- demographic variables :** it was developed to collect information regarding sample characterstics such as age, gender, educational qualification, family background, previous knowledge regarding universal precaution and source of information.

Section II : this section consist of structured question regarding universal precaution which was divided into following categories-

General question about universal precaution

Questions regarding knowledge about blood borne pathogens

Questions regarding knowledge about hand washing

Questions regarding knowledge about personal protective equipments.

Questions regarding knowledge about safe handling and disposal of sharps.

Questions regarding knowledge about post exposure prophylaxis (PEP)

The structured questionnaire is of multiple choices consisting of four options for each question. Only one option is correct. For each correct answer, the score of 1 was given. The highest score was 34. Based on percentage gained by the basic b.sc nursing first year students, the knowledge of respondents was grouped into following categories.

Score Interpretation

SCORING	INTERPRETATION
Below 50%	Poor knowledge
51% – 75%	Average knowledge
76 %– 100%	Good knowledge

Reliability : Reliability coefficient of the tool was 0.87 ($p<0.05$)

Data collection procedure : The formal permission was obtained from the principal of State College of Nursing. The researcher informed the sample about purpose of the study, informed consent was taken from the samples and confidentiality was assured. Pre test was given to the sample to know the prior knowledge regarding universal precaution. After pre test structured teaching programme was administered to the samples. After 7 days the post test was collected by administering the same tool.

Results and Discussion

SECTION I – Description of demographic variables samples.

Table 1. – Frequency and percentage distribution of socio- demographic characteristics of basic b.sc nursing first year students. N = 50

S.no.	Demographic Variable		Freq-uency(F)	Percen-tage (%)
1.	Age	Below 20 years 21- 25 years 26 – 30 years 31 – 35 years	40 8 2 0	80% 16% 4% 0%
2.	Gender	Male Female	7 43	14% 86%
3.	Educational qualification	Intermediate Graduate	47 3	94% 6%
4.	Family background	Medical Non – medical	3 54	6% 94%
5.	Previous knowledge related to universal precaution	Yes No	42 8	84% 16%
6.	Source of information	Class teaching Clinical area Mass media Workshop Others	35 5 2 0 0	83.3% 11.9% 4.7% 0% 0%

The present table reveals the frequency and percentage distribution of demographic variables of basic b.sc nursing first year students.

According to age the table reveals that 40 (80%) basic b.sc nursing first year students belongs to age group of below 20 years. 8 (16%) belongs to the age group of 21 to 25 years, 2 (4%) belongs to the age group of 26 to 30 years and 0% of the basic b.sc nursing first year students belong to 31 to 35 years of age.

According to the gender the table depicts that 7(14%) of the basic b.sc nursing first year students were male and 43 (86%) of the students were female

According to the educational qualification the table shows that the 47(94%) of the basic b.sc nursing first year students possess intermediate, while 3 (6%) of the students completed their graduation before joining the nursing course

According to the family background the table reveals that 3 (6%) of the basic b.sc nursing first year students belongs to medical family and rest of the students i.e. 47 (94%) belongs to non medical family

According to the previous knowledge regarding universal precaution the table depicts that 42(84%) of the basic b.sc nursing first year student states that they are having prior knowledge related to the topic of the study but 8(16%) of the student does not possess any prior knowledge regarding universal precaution.

According to the source of information the table shows that 35(83.3%) gain knowledge by attending the class teaching, 5 (11.9%) states that they gained the knowledge while working in the clinical area, 2(4.7%) of the students received the knowledge from mass media and none of the students reported of having knowledge through workshop.

SECTION II- Findings related to the pre test and post test knowledge score regarding universal precaution among Basic B.sc Nursing students.

Table No.2 – Frequency and percentage distribution of pre test and post test knowledge score. N= 50

KNOWLEDGE SCORE	POOR (0- 17)		AVERAGE (18 - 25)		GOOD (26 - 30)	
	FREQUENCY	%	FREQUENCY	%	FREQUENCY	%
Pre test	15	30%	32	64%	3	6%
Post test	0	0%	5	10%	45	90%

The above table shows the frequency and distribution of pre test and post test knowledge score of basic b.sc nursing first year students regarding universal precautions. The table depicts that in pre test 15 (30%) of the students had poor knowledge, 32(64%) of the students had average knowledge and only 3 (6%) of the students possess good knowledge.

Table No . 3 Frequency distribution of mean and Standard deviation (SD) of pre test and post test knowledge score. N=50

KNOWLEDGE SCORE	MINIMUM SCORE	MAXIMUM SCORE	MEAN	SD
Pre test	12	27	19.46	3.53
Post test	23	33	28.96	2.51

The table shows the mean and SD distribution of pre test and post test knowledge score of the sample.

The table reveals that in pre test the minimum score of the basic b.sc nursing first year student was 12 and maximum score was 27. The pre test mean was 19.46 with 3.53 SD

In post test the minimum score was 23 and the maximum score was 33. The post test mean was 28.96 with 2.51 SD.

SECTION –III. This section deals with the effectiveness of the structured teaching programme.

Table No.4 – Analysis of pre test and post test knowledge score of basic b.sc nursing first year student regarding universal precaution.

N=50

KNOWLEDGE SCORE	MEAN	SD	MEAN DIFFERENCE	df	't' value
Pre test	19.46	3.53	9.5	49	15.57*
Post test	28.96	2.51			

*Significant association at $p<0.05$

The table shows the comparison of the pre test and post test knowledge score. The paired't' test was used to find out the comparison between pre test and post test knowledge score. The mean difference was 9.5. The't' value was 15.57 at df 49.

H1- There will be a significant difference between the pre test and post test knowledge score of basic b.sc nursing first year students regarding universal precautions.

The calculated value "t" value was 15.57 at df 49, the tabulated value at 0.05 level was 2.00, hence the calculated value was greater than tabulated value, so the research hypothesis is accepted. This shows that there was statistically significant difference between pre test knowledge and post tests knowledge score.

SECTION IV- This section deals with the association of data with socio demographic variables.

Table No.5 Distribution of basic b.sc nursing I year students based on association between demographic variables (Age) and the pre test knowledge score regarding universal precaution.

DEMOGRAPHIC VARIABLES		N Poor (0-50%)	KNOWLEDGE SCORE			df	f value	P value
			Average (51-75%)	Good (76-100%)				
Age	Below 20	40	10	24	6	2, 47	0.71	0.49
	21 - 25	8	5	2	1			
	26 - 30	2	1	1	0			

According to the age, the above table shows that in below 20 years there was 10 students having poor knowledge, 24 students had average knowledge and 6 students were above median, in age group 21 – 25 years 5 students were having poor knowledge, 2 students were having average knowledge and 1 student were having good knowledge and in age group 26 – 30 years 1 student were having poor knowledge, 1 student were having average knowledge and none of the student possess good knowledge. ANOVA calculated was 0.71 at df 2, 47, tabulated value at 0.05 level was 3.15. Tabulated value was greater than calculated value so null hypothesis was accepted, p value was 0.49 it was greater than 0.05, so it inferred that the knowledge regarding universal precaution was not associated with the age of the samples.

Table 6 Distribution of basic b.sc nursing I year students based on association between demographic variables and the pre test knowledge score regarding universal precaution. N = 50

S.NO.	DEMOGRAPHIC VARIABLES		N Poor (0-50%)	KNOWLEDGE SCORE			Df	"t" VALUE	P VALUE
				Average (51-75%)	Good (76-100%)				
1.	Gender	Male	7	4	3	0	48	2.28*	0.013
		Female	43	11	29	3			
2.	Educational qualification	Intermediate	47	33	7	7	48	1.12	0.134
		Graduate	3	1	2	0			
3.	Family background	Medical	3	3	0	0	48	1.98	0.026
		Non medical	47	12	28	7			
4.	Previous knowledge	Yes	42	12	23	7	48	1.01	0.158
		No	8	3	5	0			

*Significant at p<0.05 level.

Table No.6 Revealed the association of pre test score with the demographic variable making use of independent "t" test and shows that only gender has association with pre test knowledge score.

Conclusion

The study shows that the out of 50 samples most of the students 32(64%) was having average knowledge, 15(30%) of samples were having poor knowledge and 3(6%) of the samples were having good knowledge. Pre test mean score was 19.46 with 3.53 of SD. After administering structured teaching programme 45 (90%) samples were having good knowledge, 5(10%) of the samples were having average knowledge and none of the samples were having poor knowledge. This indicate that the structured teaching programme had improved the knowledge of the students regarding universal precaution .

Ethical Clearance: ethical clearance was obtained from the ethical committee of state college of nursing, Dehradun Uttarakhand.

Source of Funding: Self

Conflict of Interest: Nil

References

1. Lois White, Basic nursing foundation of skills & concept, 1st edition pg no:- 10.
2. Chan R, Molassiotis A,Chan E,Chan V,HOB,Lai CY, Nurses knowledge of and compliance with universal precaution in acute care hospital. International journal of nursing students,2002; vol.39(2), 157-163. www.ncbi.nlm.nih/gov/pubmed/11755446
3. Government of India; Ministry of Health & Family Welfare, Antiretroviral therapy guidelines for HIV infected adults and adolescents. National AIDS control Organisation 2011. http://nacoonline.org/upload/policies& guidelines.
4. Leon MP, Rivera A, Chinchilla A, Occupational accidents and knowledge about universal precaution in interns of coasta Rica.2003;vol.8(1) pg no:- 526-528
5. Khapre MP, Mudey A, Chaudhary S,Wagh V,Goyal R.C, Awareness and compliance with universal precaution guidelines among interns & residents: An interview based study in rural tertiary care teaching hospital, International Journal of Health Science & Research, vol:-1 (2) www.ijhsr.org/
6. World health organisation, "Health care worker safety,"2014, http://www.who.int/injection_safety/toolbox/en/AM_HCW_Safety_EN.pdf
7. Centre of disease control;Recommendation for the prevention of HIV transmission in health care setting,Morbidity and mortality report. http://www.cdc.gov.in.
8. Universal precaution http://en.wikipedia.org./wiki/universal _precaution.