International Journal of Nursing Research (IJNR)

International Peer Reviewed Journal

Research article

A study to evaluate the effectiveness of planned teaching programe regarding universal precaution among nursing students at sumandeep nursing college, Waghodia, Vadodara

Vaishnavi Rana, Rhitikpuri Goswami, Puja Shah, Heer Sheth, Sonal Patel*

Department of Medical-Surgical Nursing, Sumandeep Nursing College, India.

Abstract

Aim: The study to assess the effectiveness of planned teaching program regarding universal precaution to improve knowledge among nursing students of Sumandeep nursing college. **Method:** The selection of design depends upon the purpose of the study, the research approach, and variable to be studied. One group pre-test, post-test research design, which belongs to pre-experimental design, was selected to assess the effectiveness of planned teaching program regarding universal precaution among final year nursing students. The evaluation of planned teaching program was done through post-test on the 8th day of implementation of the planned teaching program. **Results:** The effectiveness of planned teaching program. The mean, mean difference, standard deviation, t-value and a significant level of pre-test and post-test knowledge score of respondents. As "t" value of knowledge (3.99) is highly significant at 0.05 level. Hence, researcher found an association between pre-test and post-test score regarding universal precaution on the nursing student. Among all the selected demographical variables: level of study (X^2=0.74), Age (X^2=0.74), Gender (X^2=0.74), Participated in workshop/conference (X^2=2.33), stream in 12th (1.05), place of residence (0.49), showed significant at 0.05 level of significance. It can be interpreted that there is a significant association between knowledge score regarding the study, Gender, Participated in workshop/ conference, stream in 12th, place of residence. Were demographic variable such as Gender (X^2=0.74) showed no significant association between knowledge score of nursing students regarding universal precaution. **Conclusion:** Post day was conducted the 8th day after implementation of planned teaching program to find out the effectiveness. The‘t’ test indicates that there was an improvement in the level of knowledge among nursing students. Hence, it indicates that planned teaching program was effective.

Keywords: Universal Precaution among Nursing Students

***Corresponding author: Mrs. Sonal Patel,** Department of Medical-Surgical Nursing, Sumandeep Nursing College, India.. Email Id-ranavaishnavi5@gmail.com

1. Introduction

Healthcare workers, especially nursing students in the health care profession, are at increased risk of occupational exposure to blood and bodily fluids. Proper knowledge and practice of the Universal Precautions (UPs) can significantly decrease the incidence of occupational exposure amongst students.

Access this article online

Website:www.innovationalpublishers.com/journal/ijnr | e-ISSN: 2456-1320

DOI: https://doi.org/10.31690/ijnr/48

How to cite this article: Vaishnavi Rana, Rhitikpuri Goswami, Puja Shah, Heer Sheth, Sonal Patel, A study to evaluate the effectiveness of planned teaching programe regarding universal precaution among nursing students at sumandeep nursing college, Waghodia, Vadodara. Int J Nur Res. 2018; 4(3): 144-148.

The Universal precautions proposed by the Centers for Disease Control and Prevention (CDC) require that healthcare workers treat the blood and body fluids of all persons as potential sources of infection, irrespective of perceived risk or diagnosis (Siegel et al. 2007:93). The UPs are a set of guidelines that need to be followed in order to prevent transmission of blood-borne pathogens, for example, the HIV, when a person is exposed to blood or other bodily fluids, or if there is a risk of potential exposure (Siegel et al. 2007:66). [1]

Universal precaution is an approach to infection control to treat all human blood and certain all human body fluid as if they were known to be infectious for HIV, HBV other blood bond pathogens. Universal precaution refers to the

practice of medicine of avoiding contact with patient's bodily fluids, by means of the wearing of non-purposes articles such as medical gloves, goggles and face shields [2].

Body fluids to which universal precautions apply

Apply to blood and to other body fluids containing visible blood. Occupational transmission of HIV and HBV to health-care workers by blood is documented [3,4]. Blood is the single most important source of HIV, HBV, and other bloodborne pathogens in the occupational setting. Infection control efforts for HIV, HBV, and other bloodborne pathogens must focus on preventing exposures to blood as well as on delivery of HBV immunization.

Also, apply to semen and vaginal secretions. Although both of these fluids have been implicated in the sexual transmission of HIV and HBV, they have not been implicated in occupational transmission from patient to health-care worker. This observation is not unexpected, since exposure to semen in the usual health-care setting is limited, and the routine practice of wearing gloves for performing vaginal examinations protects health-care workers from exposure to potentially infectious vaginal secretions.

It is Apply to tissues and to the following fluids: cerebrospinal fluid (CSF), synovial fluid, pleural fluid, peritoneal fluid, pericardial fluid, and amniotic fluid. The risk of transmission of HIV and HBV from these fluids is unknown; epidemiologic studies in the health-care and community setting are currently inadequate to assess the potential risk to health-care workers from occupational exposures to them. However, HIV has been isolated from CSF, synovial, and amniotic fluid [5, 6], and HBs Ag has been detected in synovial fluid, amniotic fluid, and peritoneal fluid [7, 8]. One case of HIV transmission was reported after a percutaneous exposure to bloody pleural fluid obtained by needle aspiration[9]Whereas aseptic procedures used to obtain these fluids for diagnostic or therapeutic purposes protect health-care workers from skin exposures; they cannot prevent penetrating injuries due to contaminated needles or other sharp instruments.

Body fluids to which universal precautions do not apply

Do not apply to feces, nasal secretions, sputum, sweat, tears, urine, and vomits unless they contain visible blood. The risk of transmission of HIV and HBV from these fluids and materials is extremely low or nonexistent. HIV has been isolated, and HBs Ag has been demonstrated in some of these fluids; however, epidemiologic studies in the health-care and community setting have not implicated these fluids or materials in the transmission of HIV and HBV infections [10, 11]. Some of the above fluids and excretions represent a potential source of Nosocomial and community-acquired infections with other pathogens and recommendations for preventing the transmission of non-blood borne pathogens have been published.

Universal precaution was typically practiced in any environment where work was exposed to bodily fluids, such as Blood, Semen, Vaginal secretions, Synovial fluid, Amniotic fluid, Cerebrospinal fluid, Pleural fluid, pericardial fluid, Peritoneal fluid, Feces, Urine. The bodily fluid that did not require such precautions: Nasal secretions, Vomit, Perspiration, Sputum, Saliva, sweat. Universal Precaution was the infection control Technique that was Recommended following AIDS; every patient was treated as if Injected and there for Precaution where taken to minimize risk.

Worker education and training in preventive measures should be carried out and safe work procedures developed for all activities having the potential for exposure.

In additional precautions:

- Disease with air born transmission (Tuberculosis)
- Disease with droplet transmission (mumps, rubella, influenza, pertussis)
- Transmission by direct or indirect contact
- Essentially universal precautions were good hygiene habits, such as hand washing and the use of gloves and other barriers correct handling of hypodermic needles and aseptic techniques.
- Wash hands immediately after gloves are removed.
- Avoid accidental injuries that can be caused by needles, scalpel blades, laboratory instruments, handling sharp instruments and disposing of used needles, etc.
- Worker education and procedure developed for all activities having the potential for exposure.

Every day while caring for patients, nursing students are at risk for exposure to blood borne pathogens which result in infections such as HIV/AIDS has stimulated a focus on health care workers, health and safety and has galvanized efforts towards the prevention of occupational injury and illness.

All the sharps should be handled with extreme care. They should never be passed directly from one person to another, and there used should be kept to a minimum. do not recap used needles by hand; do not remove used to needles from disposable syringes by hand; and do not been, break, or otherwise manipulate used needle by hand. Place used disposable syringes, scalpel blades and other sharps items in puncture-resistant containers for disposal. Puncture resistant containers must be readily available, close at hand, and out of rich of children. The sharp object should never be thrown into ordinary waste bins or bags, or to rubbish heaps or in to waste pits or latrines [12].

Though many studies could be quoted from developed nations there is a paucity of data related to nursing student's knowledge, attitude, and practice regarding universal precaution, especially in the Indian scenario. Thus the present study was undertaken with the main objective to assess the knowledge and practice of nursing students

regarding universal precaution and thereby planning to develop required interventional strategies.

2. Materials and methods

Study designing and setting

This study was pre-experimental one group pre-test post-test research design. The data was collected from a nursing student on 15/09/2017 to 20/09/2017. The study was conducted from Final year Nursing Students at Sumandeep Nursing College. On the first day pre-test is conducted, tool or questionnaire regarding universal precaution was given to sample before administered planned teaching program. On the same day administer planned teaching program regarding universal precaution. On the seventh day, post-test is conducted, same questionnaires are given to same final year nursing students to evaluate the effectiveness of planned teaching program regarding universal precaution.

Sample size and sampling method

The sample size constitutes 50 nursing students from Sumandeep nursing college who full fill the inclusion criteria. The sample of the study will be selected by using purposive sampling technique according to inclusive criteria as well as the availability of samples from Sumandeep nursing college.

Data collection tool and technique

The tool consisted of two sections.

- **Section A: Socio-demographic variable data**

Section A consists of selected demographic variable such as Level of study, Gender, Age in the year, Participate workshop, Stream of study, Place of residence.

- **Section B: Structured knowledge questionnaire on universal precaution.**

Section B consists of structured knowledge questionnaire to assess the knowledge on universal precaution.
After obtaining formal permission from the principal of Sumandeep Nursing College, Piparia, Vadodara. A pilot study was conducted on 6 randomly selected subjects. Samples were selected based on the convenience sampling. In order to ascertain the reliability and validity of the tool. The split-half method was used. The score was analyzed and the value of r = 0.9 for knowledge, was found which indicates the high degree of positive correlation.

Data management and analysis

This chapter deals with the analysis and interpretation of the data collected from 50 final years B.Sc. and P.B.B.Sc nursing students through purposive sampling technique. The data collected by structured knowledge questionnaire to evaluate the effectiveness of Planned teaching program regarding Universal precaution to improve knowledge among nursing students of Sumandeep Nursing College at Piparia, Vadodara.
Purpose of data analysis is to translate the information collected during the course of the study into interpretable form so that the research question could be answered. The analysis is to summarize, compare and test the proposed relationship and infer findings. The collected data were tabulated on the master sheet and analyzed using descriptive and inferential statistics. Analysis of the present study has been organized in relation to the objectives and hypotheses of the study
The data collected from nursing students has been organized and presented under the following headings based on the objectives of the study.

- **Section I:** Frequency and percentage distribution of socio demographic variables.
- **Section II:** Analysis of pre-test knowledge scores regarding universal precaution.
- **Section III:** Effectiveness of planned teaching program on knowledge regarding universal precaution among final year nursing students.
- **Section IV:** To find the association between pre-test knowledge scores with selected demographic variables

Ethical and cultural considerations

Ethical approval was principal of the sumandeep nursing college

3. Results

Characteristics

Frequency and percentage distribution of socio-demographic variables.

In this section, the socio-demographic variables of the respondents have been displayed to show the frequency distribution of the various attributes of nursing students. Frequency and percentage distribution of samples are as follows: 1 figure indicates that 82% respondents studying B. Sc Nursing while only 18% studying PBBSc Nursing course, 2 figure indicates the 18 % students are male and 82 % students are female, 3 figure shows that 82% respondent belongs to the age group 19-21 years, and 18% respondent belongs to 21-23 years, 4 figure indicate the attendants only 40% of them have attended the seminar while 60% have not attended it, 5 figure indicates that 82 % respondents are from Science, 16% are from Commerce and only 2% are from Arts, 6 figure indicates that 21 (42 %) respondents are residing at Hostel, 22(44%) is Day Scholar and 7(14%) living as PG (Table 1).

Table no 1: Frequency and percentage distribution of socio demographic variables.

	Variables	Frequency	Percentage
1.	Level of study		
	B.Sc.	41	82
	P.B.B.Sc	9	18
2.	Gender		
	Male	9	18
	Female	41	82
3.	Age		
	17-19 year	0	0
	19-21 year	41	82
	21-23 year	9	18
4.	Did you participated in any workshop regarding		
	Yes	20	40
	No	30	60
5.	Which stream / medium in 12th std you studied		
	Science	41	82
	Commerce	8	16
	Arts	1	2
6.	Residence		
	Hostel	21	42
	Day scholar	22	44
	PG	7	14

Deals with the analysis of the knowledge score before administration of planned teaching program regarding Universal precaution.

The knowledge score of the sample before and after administration of planned teaching program. According to the pre-test knowledge score, 48(96%) have the average knowledge, 2(4%) have good knowledge regarding universal precaution. According to the posttest knowledge score after administration of planned teaching program, 4(8%) have the average knowledge, and 46(92%) have good knowledge regarding universal precaution (table 2).

Table no 2: Distribution of frequency & percent of nursing students on their pre & posttest knowledge level

N=50

Level of knowledge	Pre–test Frequency (%)	Level of knowledge	Post-test Frequency (%)
Poor	0(0)	Poor	0 (0)
Average	48(96)	Average	4(8)
Good	2(4)	Good	46(92)
Total	50(100)	Total	50(100)

Table 2 indicates that the knowledge score of sample before and after administration of Planned teaching program. According to the pre-test knowledge score, 48(96%) have average knowledge, 2(4%) have good knowledge regarding universal precaution. According to the posttest knowledge score after administration of planned teaching program, 4(8%) have average knowledge, and 46 (92%) have good knowledge regarding universal precaution.

Comparison of overall pre & post test knowledge scores of nursing students.

The obtained t value is (3.993) greater than the table value of 2.009 at 0.05 level of significance with a degree of freedom 49. Therefore, there exists a significant difference between pre test and posttest knowledge scores of final year nursing students. Hence, H_1 is accepted (table 3).

Table no 3: Comparison of overall pre & posttest knowledge scores of nursing students.

N=50

Variables		Mean	Mean difference	SD	t-value
Knowledge	Pre-test	62.4	26.1	1.46	3.993
	Post-test	88.5		0.88	

t (49, 0.05 level of significance)= 2.009, SD: Standard deviation

Table 3 shows that the obtained t value is (3.993) greater than the table value of 2.009 at 0.05 level of significance with degree of freedom 49. Therefore, there exists significant difference between pre test and posttest knowledge scores of final year nursing students. Hence, H_1 is accepted.

Association between pre-test knowledge scores with selected demographic variables.

The chi-square value computed between knowledge levels of nursing Student regarding universal precaution on selected socio-demographic variables.

Among all the selected demographical variables: level of study (X^2=0.74), Age (X^2=0.74), Gender (X^2=0.74), Participated in workshop/conference (X^2=2.33), stream in 12th (1.05), place of residence (0.49), showed significant at 0.05 level of significance. It can be interpreted that there is a significant association between knowledge score regarding the study, Gender, Participated in workshop/ conference, stream in 12th, place of residence. Were demographic variable such as Gender (X^2=0.74) showed no significant association between knowledge score of nursing students regarding universal precaution.

Conclusion

The study concluded that the planned teaching program was effective in improving their knowledge regarding universal precaution.

Acknowledgments

Dr. Ravindra H. N., our Principal, Sumandeep Nursing College, for his valuable suggestions, and constant encouragement is given throughout the period of study.

We would like to take this opportunity to express our profound gratitude, and deep regard to our guide, Mrs. Sonal Patel, Assistant professor of Medical-Surgical Nursing, for his expert guidance, valuable feedback and constant encouragement the We are grateful to all Experts for their valuable suggestions and for validating the data collection tool.

We also grateful to all Nursing students of Sumandeep Nursing College for willingly participated and co-operation in the study to make it a success.

We extend our cordial thanks to our family members for their constant encouragement, Guidance, Valuable suggestions and loving attitude to help us to complete this study. Last but not least, we express our heartfelt thanks to each and everyone who helped us to complete this study.

References

[1] Wikipedia the free encyclopedia. Universal precautions. Universal. Available from URL : http://:en.wikipedia.org/wiki/Universal_precautions

[2] https:// www.osha . gov > universal precaution.

[3] Department of Labor, Department of Health and Human Services. Joint advisory notice: protection against occupational exposure to hepatitis B virus (HBV) and human immunodeficiency virus (HIV). Washington, DC: US Department of Labor, US Department of Health and Human Services, 1987

[4] Centers for Disease Control. Update: Acquired immunodeficiency syndrome and human immunodeficiency virus infection among health-care workers. MMWR 1988; 37:229-34,239.

[5] Hollander H, Levy JA. Neurologic abnormalities and recovery of human immunodeficiency virus from cerebrospinal fluid. Annals of internal medicine. 1987 May 1; 106(5):692-5.

[6] Mundy D, Schinazi R, Gerber AR, Nahmias A, Randall H. Human immunodeficiency virus isolated from amniotic fluid. The Lancet. 1987 Aug 22; 330(8556):459-60.

[7] Onion DK, Crumpacker CS, Gilliland BC. Arthritis of hepatitis associated with Australia antigen. Annals of internal medicine. 1971 Jul 1; 75(1):29-33.

[8] Bond WW, Petersen NJ, Gravelle CR, Favero MS. Hepatitis-B virus in peritoneal-dialysis fluid-a potential hazard. dialysis & transplantation. 1982 Jan 1; 11(7):592.

[9] Oksenhendler ER, Harzic M, Le JR, Rabian CL, Clauvel JP. HIV infection with seroconversion after a superficial needlestick injury to the finger. The New England journal of medicine. 1986 Aug; 315(9):582-.

[10] Lifson AR. Do alternate modes for transmission of human immunodeficiency virus exist?: A review. Jama. 1988 Mar 4;259(9):1353-6.

[11] Friedland GH, Saltzman BR, Rogers MF, Kahl PA, Lesser ML, Mayers MM, Klein RS. Lack of transmission of HTLV-III/LAV infection to household contacts of patients with AIDS or AIDS-related complex with oral candidiasis. New England Journal of Medicine. 1986 Feb 6; 314(6):344-9.

[12] Koenig S, Chu J. Senior medical students' knowledge of universal precautions. Academic medicine: journal of the Association of American Medical Colleges. 1993 May; 68(5):372-4.