



“A pre-experimental study to assess the effectiveness of SIM (Self Instructional Module) on universal precautions to prevent HIV/AIDS at labour room among nursing students in selected college, Hisar, Haryana”.

Mrs. Bharat¹, Dr. Victor Devasivadam²

¹Ph.D (Nursing) Scholar, Desh Bhagat University, Mandi Govindgarh (Punjab).

²Dr. Victor Devasivadam, Director, Faculty of Nursing, Desh Bhagat University, Mandi Govindgarh (Punjab)

Abstract

Background: Universal precautions as defined by Centre for Disease Control are a set of precautions designed to prevent transmission of Human immunodeficiency virus (HIV), hepatitis B virus (HBV), and other blood borne pathogens while providing health care in any health care setup. Under Universal precautions, blood and certain body fluids of all patients are considered potentially infectious for HIV, HBV and other blood borne pathogens¹.

Methods: In this Pre experimental study, 40 students of G.N.M. III year of Savitri Jindal Institute of Nursing, Hisar, Haryana who were selected by using convenience sampling technique. Participants were administered self structured questionnaires to assess the effectiveness of Self Instructional Module on universal precautions to prevent HIV/AIDS at labour room.

Results: The Mean knowledge score of the pre-test was 13 whereas, the mean knowledge score of the post-test was 22, further the Mean difference was found to be 09 from the pre-test and post-test. The “t” value was 6.401 which was greater than “t” (theoretical) value at 0.05 level of significance. Thus the self instructional module was effective in enhancing knowledge on Universal Precautions to prevent HIV/AIDS at labour room.

Conclusion: It reveals that self instructional module was effective in enhancing knowledge on Universal Precautions to prevent HIV/AIDS at labour room. Hence Hypothesis (H₁) is accepted. Demographic variable such as care given to HIV positive patient was associated with pre-test knowledge score regarding Universal Precautions to prevent HIV/AIDS at labour room at 0.05 level of significance.

Keywords: Self instructional module, effective, knowledge, Universal Precautions, HIV/AIDS

Introduction: In current healthcare systems, nursing students are expected to learn to care for a variety of types of patients with complex medical needs. Nursing students are also required to develop strong self-efficacy and vast knowledge to safely provide patient care¹.

According to Diesel, Ercole, and Taliaferro students lack knowledge and have misconceptions regarding treating HIV positive patients. When nursing students are faced with caring for HIV positive patients they often are scared, as well as unsure of modes of transmission, and how to treat the patient. This lack of knowledge and self-efficacy may result in poor patient care. HFS may be used as a teaching method to increase nursing students' knowledge and self-efficacy regarding treating patients with HIV².

HIV stands for Human Immunodeficiency Virus. Once someone is infected with HIV the virus will remain in their body for the rest of their life. There is currently no cure for HIV and no vaccine to prevent people from becoming infected. However, treatment can help most people with HIV to live much longer and feel well³.

WHO (1992), two types of HIV have been firmly defined; HIV-1 which is pandemic and HIV-2 which is more geographically restricted in distribution. That HIV enters the body system through unprotected sex with an infected person; through contaminated blood and blood products (blood transfusion); infected medical instruments or skin piercing equipment and through an infected mother.

Universal precaution (UP) is a method of infection control recommended by the Centre for Disease Control (CDC) in which all human blood, certain body fluids, as well as fresh tissues and cells of human origin are handled as if they are known to be infected with HIV, HBV and or other blood-borne pathogens⁴.

Universal Precautions" should be followed by ALL personnel at ALL times on ALL patients. The use of Universal Precautions is based on an individual's skills and interaction with patient's body substance, non-intact skin, and mucous membrane. This applies to all personnel at all times regardless of the patient's diagnosis. These precautions apply to personnel performing all "invasive procedures⁵.

Standard precautions are recommended when delivering the care to all clients, regardless of their health condition. It is also recommended that when handling equipment and instruments are contaminated or suspected of contamination, and in situations of contact risk with body fluids, blood, secretions and excretions except sweat, without considering the presence or absence of visible blood and skin with solution of continuity and mucous tissues. They included precautions against agents that are transmitted by the following routes of transmission: droplet, air-borne, and contact routes⁶.

According to CDC guidelines universal precaution are set of actions which are required to prevent infections from blood borne or body fluid borne infection. Main aim of universal precaution is to protect health workers and patients from infection. Body fluids to be treated in universal precaution are blood, CSF, pleural cavity fluid, pericardial cavity fluid, synovial fluid, semen, amniotic fluid, urine, vaginal secretion and saliva. Four important practices recommended in universal precaution are- Hand washing, Use of protective barriers to prevent direct contact, Safe handling and disposal of sharps, Safe decontamination of instruments and other contaminated instruments.

Due to the risk of acquiring life-threatening blood borne pathogens, it would be reasonable to expect that the HCW working in the potentially hazardous environment of labour and delivery rooms would adhere to strict precautions against such exposures.

Standard precautions are set of measures formulated to prevent Transmission of blood borne pathogens when providing health care. Standard precautions include hand washing; use of barriers (gloves, gown, cap and mask); care with devices, equipment and clothing used during care; environmental control (surface processing protocols and health service waste handling); adequate discarding of sharp instruments; and patient's accommodation in accordance to requirement levels as an infection transmission source⁷.

The World Health Organization (WHO) reports that among the 35 million health workers worldwide, about 3 million sustain percutaneous exposures to the blood borne pathogens each year, including, 2 million to hepatitis B virus (HBV), 0.9 million to hepatitis C virus (HCV) and 170,000 to human immune deficiency virus (HIV). These injuries may result in 70,000 HBV, 15,000 HCV and 5,000 HIV infections. In addition, more than 90% of the occupational infections occur in developing countries. Thoughtful adherence to UP remains the primary means of preventing occupational exposures and thus of reducing occupational risk of infection with blood borne pathogens⁸.

Globally it is estimated that about 40% of HBV and HCV infections and 2.5% of HIV infections in HCWs are attributable to occupational sharps exposures. As exposure is a constant premise for professionals, intervention measures have been proposed to minimize this situation, with the implementation of standard precautions as one of the strategies.

Objectives:-

1. To assess the level of knowledge on universal precautions to prevent HIV/AIDS at labour room among nursing students before and after administer self instructional module (SIM).
2. To evaluate the effectiveness of self instructional module (SIM) on universal precaution to prevent HIV/AIDS at labour room among nursing students.
3. To find out the association between pre-test knowledge score with their selected demographic variables.

Hypothesis:

H₁: The mean post-test knowledge score on universal precaution to prevent HIV/AIDS at labour room is significantly higher than the mean pre-test knowledge score among nursing students.

H₂: There is significant association between pre-test knowledge score with selected demographic variables.

Methods: A quantitative research approach with pre-experimental research design was used to assess the effectiveness of SIM (Self Instructional Module) on universal precautions to prevent HIV/AIDS. The study was conducted at Savitri Jindal Institute of Nursing, Hisar, Haryana after getting formal approval. The subject of the study includes nursing students. The sample size for the study was 40 nursing students who were selected by using convenient sampling technique. In pre test, Self structured questionnaires were administered to students in classroom with proper seating space to ensure privacy. Then Self Instructional Module was administered among

participants. After seven days, post test was conducted among participants. The tool consists of two parts. Part I consisted demographic variables such as Age, Religion, Marital status, Care given to HIV positive patient, Main source of your knowledge on universal precaution to prevent HIV/AIDS. Part II consisted self structured knowledge questionnaires regarding universal precautions to prevent HIV/AIDS at labour room. The students were allowed to ask any doubt. However, none asked for any clarification. Each right item scored one and wrong response scored zero. The maximum score was 30 and minimum score was zero. Descriptive and inferential statistics were used in data analysis.

Results: Table No. 1 shows the details of the socio demographic variables of the study population. The majority of students (70.00%) were in the age group of 20-22 years. 12.5% students were >25 years, 10% in age group of 23-25 years, 7.5% in age group of 17-19 years. Most of students (97.5% were belongs to Hindu religion, only 2.5% were from Muslim and no one students were from Sikh, Christian. Majority of students (90%) were unmarried and only 10% were married. Majority of students (65%) have given care to HIV positive patient but 35% students have not given care to HIV positive patient. Most of students (72.5% were gain knowledge on universal precaution to prevent HIV/AIDS from books/magazines, 17.5% from other sources, 7.5% students from internet and 2.5% from TV and mass .

Table-1.1 Description of demographic variables

S. No.	Demographic variable	Categories	Frequency (f)	Percentage (%)
1	Age	a) 17 -19 years	03	7.5
		b) 20-22 years	28	70
		c) 23-25 years	04	10
		d) >25 years	05	12.5
2	Religion	a) Hindu	39	97.5
		b) Muslim	01	2.5
		c) Sikh	00	00
		d) Christian	00	00
		e) Other	00	00
3	Marital status	a) Married	04	10
		b) Unmarried	36	90
4	Care given to HIV positive patient	a) Yes	14	35
		b) No	26	65
5	Main source of your knowledge on universal precaution to prevent HIV/AIDS	a) Family members	00	00
		b) Books/Magazines	29	72.5
		c) Internet	03	7.5
		d) TV and mass media	01	2.5
		e) Friends	00	00
		f) Any others	07	17.5

Table -1.2: Pre test knowledge levels on universal precautions to prevent HIV/AIDS at labour room among nursing students.

Knowledge Level	Range of Score	No. of Respondent	
		Frequency (f)	Percentage (%)
Below Average	0 - 10	13	32.5
Average	11 - 20	27	67.5
Good	21 - 30	00	00
Total		40	100

Table 1.2 shows the distribution of pre-test level of knowledge among nursing students. Result shows that 32.5% nursing students having below average knowledge, 67.5% nursing students having average knowledge and no one nursing students having good knowledge regarding universal precautions to prevent HIV/AIDS at labour room.

Table -1.3: Post test knowledge levels on universal precautions to prevent HIV/AIDS at labour room among nursing students

Knowledge Level	Range of Score	No. of Respondent	
		Frequency (f)	Percentage (%)
Below Average	0 - 10	00	0.00
Average	11 - 20	16	40
Good	21 - 30	24	60
Total		40	100

Table 1.3 shows the distribution of post-test level of knowledge among nursing students. With regarding to scores, after the intervention, 16 (40%) nursing students having average knowledge, 24 (60%) of them had good knowledge and none of them had below average knowledge regarding universal precautions to prevent HIV/AIDS at labour room.

Table -1.4: Differences of Pre test and Post test Mean Knowledge scores on universal precautions to prevent HIV/AIDS at labour room among nursing students

Sr. No	Aspects of knowledge	Maximum score	Mean	S.D	Mean %	't' value
1	Pre test Knowledge score	30	13	3.449	43.33	6.401*
2	Post test Knowledge score	30	22	3.924	73.33	
3	Enhancement	30	09	0.475	30	

Table 1.4 reveals the comparison of overall pre and post test Mean knowledge scores of nursing students on universal precautions to prevent HIV/AIDS at labour room. The maximum score of tests was 30. The Standard Deviation of pre-test was 3.449, and post-test's Standard Deviation was 3.924, Difference of pre and post test's Standard Deviation was 0.475. The Mean knowledge score of the pre-test was 13 whereas, the mean knowledge score of the post-test was 22, further the Mean difference was found to be 09 from the pre-test and post-test. The "t" value was 6.401 which was greater than "t" (theoretical) value that 2.02 at 0.05 level of significance. It was concluded that there was a significant difference between Mean Pre-test and Mean Post-test knowledge score. It reveals that self instructional module was effective in enhancing knowledge on Universal Precautions to prevent HIV/AIDS at labour room.

Table -1.5: Association of Pre test Knowledge Scores with their selected demographic variables of nursing students on universal precautions to prevent HIV/AIDS at labour room.

S. No.	Demographic variable	Categories	Knowledge score				χ^2	P value	Df	
			Below average		Average					Total
			f	%	f	%				
1	Age	a) 17 -19 years	01	2.5	02	05	0.76	7.82	03	
		b) 20-22 years	08	20	20	50				
		c) 23-25 years	02	05	02	05				
		d) >25 years	02	05	03	7.5				
2	Religion	a) Hindu	13	32.5	26	65	0.49	9.49	04	
		b) Muslim	00	00	01	2.5				
		c) Sikh	00	00	00	00				
		d) Christian	00	00	00	00				

		e) Other	00	00	00	00	00			
3	Marital status	a) Married	03	7.5	01	2.5	04	3.65	3.84	01
		b) Unmarried	10	25	26	65	36			
4	Care given to HIV positive patient	a) Yes	01	2.5	16	40	14	9.55	3.84*	01
		b) No	12	30	11	27.5	26			
5	Main source of your knowledge on universal precaution to prevent HIV/AIDS	a) Family members	00	00	00	00	00	2.16	11.07	05
		b) Books/Magazines	09	22.5	20	50	29			
		c) Internet	01	2.5	02	05	03			
		d) TV and mass media	01	2.5	00	00	01			
		e) Friends	00	00	00	00	00			
		f) Any others	02	05	05	12.5	07			

Table 1.5 shows that there is significant association between care given to HIV positive patient and pre-test knowledge score regarding Universal Precautions to eg. age, religion, marital status, main source of your knowledge on universal precaution to prevent HIV/AIDS were found not significant at 0.05 level of significance. There by suggests that there is no association between these demographic variables with pre test knowledge score regarding Universal Precautions to prevent HIV/AIDS at labour room.

Discussion:

A quantitative research approach with pre experimental research design was adopted to achieve the objectives of the study. The samples were collected by using the convenient sampling technique. The data was collected from participants by using a self structured knowledge questionnaire. These are considered the best ways to assess effectiveness of self instructional module (SIM) on knowledge on universal precaution to prevent HIV/AIDS in labour room among nursing students at Savitri Jindal Institute of Nursing. The mean post-test knowledge score of (22) on Universal Precautions to prevent HIV/AIDS at labour room was significantly higher than the mean pre-test knowledge score of (13) among students at Savitri Jindal Institute of Nursing. Calculated “t” value for knowledge score was (6.401) and found to be statistically significant at level of 0.05.

Conclusion:

The mean post-test knowledge score of (22) on Universal Precautions to prevent HIV/AIDS at labour room was significantly higher than the mean pre-test knowledge score of (13) among students in Savitri Jindal Institute of Nursing. Calculated “t” value for knowledge score was (6.401) and found to be statistically significant at level of 0.05. This indicates that self instructional module had improved the knowledge of students regarding Universal Precautions to prevent HIV/AIDS at labour room during delivery and care of HIV positive mother. There was a significant association of knowledge score with demographic variable such

as care given to HIV positive patient with pre test knowledge score. It was concluded that teaching strategies should be provided to students for improving their knowledge on universal precautions to prevent HIV/AIDS at labour room.

Implications:

This study has the following implication to nursing practice, nursing education, nursing administration and nursing research.

Nursing practice:

Several implications can be drawn from the present study for nursing practice. The expanded role of professional nursing students emphasizes the activities which promote health. If Universal Precautions to prevent HIV/AIDS become a part of care, it is expected that more nursing students will have secure and safe and satisfying at labour room during delivery, decrease in no. of having HIV infection during delivery at labour room. The role of researcher is crucial in directing students toward universal precautions to prevent HIV/AIDS at labour room. Health education should be considered as a major part of daily nursing practice.

Nursing education:

The nursing students working in various health setting should be given education regarding universal precaution to prevent HIV/AIDS. There must be adequate guidance supervision and evaluation of students to ensure adequate knowledge regarding Universal Precautions to prevent HIV/AIDS at labour room.

Nursing administration:

The administrator has a responsibility to provide simulation training programme to nursing students specially related to Universal Precautions to prevent HIV/AIDS at labour room.

Nursing research:

There is a need to extend intensive nursing research in the area of nursing education especially to assess the knowledge regarding Universal Precautions to prevent HIV/AIDS at labour room.

Recommendations:

On the basis of findings of the study, the following recommendations are offered for further research.

- The similar study can be conducted on large sample to validate the findings and make generalization.
- A similar study may be conducted with pre-test and post-test control group design.
- A study can be conducted to assess the knowledge and practice regarding Universal Precautions to prevent HIV/AIDS at labour room among staff nurses also.

Limitation of the Study

- The sample size is limited to 40.
- The study limited to GNM III year students of one institute only.

Acknowledgement:

Researcher would like to acknowledge support and guidance of Desh Bhagat university along with my PhD Supervisor.

Ethical clearance: Ethical clearance was taken from Institutional Ethical Committee, Savitri Jindal Institute of Nursing.

Source of Funding: Self-funded project

Bibliography:

1. Fashasheh I, Ayed A, Hussein S, Thultheen I, Midwives and Nurses Compliance with Standard Precautions, *Open Journal of Nursing*, 2016, 6, 294-302
2. Diesel HJ, Taliaferro DH, Ercole PM (2017) Comparison of perceptions of HIV/AIDS between Cameroonian, Honduran and American nursing students after Peer-led Education. *Arch Nurs Pract Care* 3(1): 057-063.
DOI: <http://dx.doi.org/10.17352/anpc.000027>.
3. Pete Schauer, *AIDS and Other Killer Viruses and Pandemics*, Greenhaven Publishing LLC, 2017, ISBN 1534501401, 9781534501409
4. <https://quizlet.com/179540750/standard-precautions-universal-precautions-flash-cards>
5. <https://science.blurtit.com/216334/what-is-universal-precaution-and-why-is-it-so-important>
6. Imad Fashafsheh, Ahmad Ayed, Mahdiah Koni, Safaa Hussein, Imad Thultheen, *Open Journal of Nursing* > Vol.6 No.4, April 2016, DOI: 10.4236/ojn.2016.64030
7. Abdulraheem IS, Amodu MO, Saka MJ, Bolarinwa OA, Uthman MMB (2012) Knowledge, Awareness and Compliance with Standard Precautions among Health Workers in North Eastern Nigeria. *J Community Med Health Edu* 2:131. doi: 10.4172/jcmhe.1000131
8. Johnson OE, Asuzu MC, Adebisi AO, Knowledge and practice of universal precautions among professionals in public and private health facilities in Uyo, southern Nigeria- A comparative study.
9. <https://ibommedicaljournal.org/index.php/imjhome/article/view/95/193>