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A Study to Assess the Effectiveness of Structured Teaching Programme on Knowledge Regarding Universal Precautions and the Prevention of Blood Borne Infections among the Final Year B.Sc. Nursing Students of Selected Nursing Colleges at Datia

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ABSTRACT

"A study to assess the effectiveness of structured teaching program on knowledge regarding universal precautions and the prevention of blood borne infections among the final year Bsc nursing students of selected nursing colleges of Datia. The aim of the study is to identify the level of knowledge regarding universal precautions and the prevention of blood borne infections among the final year B.Sc. Nursing students before and after structured teaching programme. 2. To develop and administer structured teaching programme on the knowledge regarding universal precautions and the prevention of blood borne infections among the final year B.Sc. Nursing students. 3. To evaluate the effectiveness of structured teaching programme on the knowledge regarding universal precautions and the prevention of blood borne infections by comparing pre and Post-test knowledge scores. 4. To find out the association between pre-test level of knowledge with selected socio- demographic variables.. The research approach adopted for this study is a quantitative approach. The research design adopted for this study was a pre experimental one group pretest post test design. The investigator had utilized probability simple random sampling for the selection of the subjects. A sample of 60 students from selected colleges who are willing to participate in the study selected for the study. Study revealed that the overall mean pre-test knowledge of final year B.Sc. Nursing students was 15.42 with standard deviation of 3.35. The mean knowledge gain by the final year B.Sc. Nursing students was 20.94 with standard deviation of 8.17. It was significant at the level of 0.05. It means there are gain in knowledge level of final year B.Sc. Nursing students. The results also showed that significant association between the knowledge of the final year B.Sc. Nursing students with selected demographic variables like income of parents and parent"s occupation. This supports that structured teaching programme on knowledge regarding universal precautions and the prevention of blood borne infections is effective in increasing the knowledge level of final year B.Sc. Nursing students.

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***KEYWORDS*:** Structured Teaching, Universal Precautions, Blood Borne Infections, Datia

Need for the study: -

Health care workers are at risk of various occupational hazards in the hospital, including exposure to blood – borne pathogens such as HIV, HBV and HCV infection from sharp injuries and contact with body fluids. Developing countries, which account for the highest prevalence of HIV- infected patients in the world, also record the highest rate of needle-stick injuries. The World Health Organization estimates that about 2.5% of HIV cases and 40% of HBV and HCV cases among health care workers worldwide are the result of these exposure.6 The risk of seroconversion following a needle-stick injury from an HCV-antigen-positive patient is estimated to range from 1.2% to 10% and there is no

immunization currently available for HIV and HCV infection. It is therefore important to prevent infection using appropriate personal protective measures.

Worldwide, about three million health care workers receive percutaneous exposure to blood-borne pathogens each year. Further, about 40% of HBV and HCV infections and 2.5% of HIV infections in health care workers are attributable to occupational sharps exposures, which are mainly preventable. Hepatitis B is a potentially life threatening liver infection caused by HBV. It is a major global health problem and the most serious type of viral Hepatitis. It can cause chronic liver disease and puts people at high risk for death from cirrhosis of liver and liver cancer. Worldwide, an estimated 2 billion people have been infected with HBV and more than 240 million have chronic liver infections. About 6 lakhs people die every year due to the acute or chronic consequences of Hepatitis B. high rate of chronic infections are also found in the Amazon and the Southern parts of Eastern and Central Europe. In the Middle East and Indian subcontinent, an estimated 2-5% of the general population is chronically infected.

Hepatitis C is another global infectious disease caused by HCV. Figures from epidemiological studies in different regions of the world show wide variance in HCV prevalence patterns. The prevalence of Hepatitis C is lowest in Northern European counties. Higher rates have been reported in South East Asian countries, including India (1.5%), Malaysia (2.5%), and the Philippines (2.3%). These studies concluded that over 200 million people around the world are infected with Hepatitis C- an overall incidence of around 3.3% of the world‟s population.

An exploratory study was conducted in West Bengal to assist the occupational exposure to HIV and practices of universal precautions among doctors. A total of 105 samples were selected by convenient sampling method. The study findings revealed that 51.4% were exposed to potential infectious material and 56.9% were aware of universal precaution. Further, 67.7% were not practicing protective methods during various procedures. The study concluded the need for an education program regarding universal precaution to all health care workers.

In view of the available statistics, the investigator found that the incidence rate of blood-borne infections is increasing each year and majority of the health care workers are unaware about the preventive measures. Therefore there is a great need of education to improve their knowledge level. Education should start from the ground level, that is from the final year of their course. So the researcher motivated to select this topic for her study.

Objectives of the study:

1. To assess the level of knowledge regarding universal precautions and the prevention of blood borne infections among the final year B.Sc. Nursing students before and after structured teaching programme.
2. To develop and administer structured teaching programme on the knowledge regarding universal precautions and the prevention of blood borne infections among the final year B.Sc. Nursing students.
3. To evaluate the effectiveness of structured teaching programme on the knowledge regarding universal precautions and the prevention of blood borne infections by comparing pre and Post-test knowledge scores.
4. To find out the association between pre-test level of knowledge with selected socio-demographic variables.

Material and method: -

Research approach and design: - quantitative approach with one group pretest post test design was adopted.

Setting of the study: - study conducted at Shri Swamiji Maharaj College of nursing, Datia.

Study population: - Bsc nusing students studying at nursing college of Datia.

Accessible population: - Bsc nusing students studying at shri Swamiji maharaj college of nursing Datia.

Sample size: - 60

Sampling technique: - Probability simple random sampling technique.

Inclusive criteria:

- Students who are studying in final year B.Sc. Nursing.
- Students who are present at the time of data collection.
- Students who are willing to participate in the study.

Exclusion criteria:

- Students who are absent at the time of data collection.
- Students not willing to participate.

Variables under study

Independent variables:

An independent variable is the variable that stands alive and it is not depend or any other. Structured teaching programme on knowledge regarding universal precautions and the prevention of blood borne infections among final year B. Sc. Nursing students.

Dependent variables:

A dependent variable is the variable the researcher interested in understanding, explaining or predicting. Knowledge of final year B. Sc. Nursing students regarding universal precautions and the prevention of blood borne infections.

Extraneous variables

In this study extraneous variables are age, gender, income of parents, type of parents, parents occupation, place of residence, relatives working in health sector and previous knowledge about universal precaution.

Description of Tools

The tool used for the data collection was organized into two sections:

Section A:

It consists of items to collect socio demographic variables of the final year B.Sc. Nursing students which includes age, gender, income of the parents, type of family, parents occupation, place of residence, any relatives working in health sector, previous knowledge about universal precautions.

Section B:

It consists of 11 items to assess the knowledge of final year B.Sc. Nursing students prevention of blood borne infections and 19 items to assess the knowledge of final year B.Sc. Nursing students universal precautions. Each question carries 1 mark and the total score was 30.

Data collection procedure: -

Prior to data collection, permission was obtained from the concerned authority to conduct the study. The data collection period was from 13th June 2020 to 20th June 2020. The researcher decided to carry on the study at Shri Swamiji Maharaj College of Nursing, Datia. 60 Samples were selected by using simple random sampling (lottery) who fulfill the selection criteria for this study. Before administering the tool, self introduction and purpose of data collection was explained to the sample and informed consent was obtained. Data collected from the sample regarding knowledge of universal precautions and prevention of blood borne infections among final year B.Sc. Nursing students by using structured knowledge questionnaire with demographic data during pre-test. Duration of data collection was 20-30 minutes. Education intervention on universal precaution and prevention of blood borne infections was also given on the same day after pre-test for 45 minutes. Post-test was conducted on 8th day by using same tool to determine the effectiveness of structured teaching programme.

Limitations of the study

1. The study is limited to the persons who are willing to participate.
2. The study limited to the undergraduate bsc nursing students of selected colleges of Dhatia.
3. Sample size is limited to 60.
4. Period of study is limited to 4-6 weeks.

Analysis and interpretations

Section I:- Base line characteristics of participants.

Table 1: - Baseline characteristics of the participants

Sl.no	Demographic variables	frequency	percentage
1.	**Age in years**		
	21-22 years	56	93.33
	23-24 years	04	6.67
2.	**Sex**		
	Male	02	3.33
	Female	58	96.67
3.	**Income of parents (Rupees)**		
	<10000	17	28.33
	10001-20000	28	46.67
	20001-30000	07	11.66
	>30000	08	13.34
4.	**Type of family**		
	Nuclear	53	88.33
	Joint	07	11.67

5.	**Parents occupation** Daily wages	36	60
	Private sector	17	28.33
	Government sector	04	6.67
	Un employment	03	5.00
6.	**Place of residence** Urban	19	31.66
	Rural	41	68.34
7.	**Any relatives working in health sector** Yes	35	58.33
	No	25	41.67
8.	**Previous knowledge about universal precaution** Class room	53	88.33
	Mass media	03	5.00
	Hospital	04	6.67

Section II: - Description of knowledge of final year B.Sc. Nursing students regarding universal precautions and the prevention of blood borne infections.

Table-2: Mean, standard deviation and mean percentage for the pre-test knowledge of final year B.Sc. Nursing students.

Sl. no	Knowledge aspect	Mean	Standard deviation	Mean percentage
1	Blood borne infections	5.12	1.42	8.52
2	Universal precautions	10.3	1.92	17.16
overall		**15.42**	**3.35**	**25.68**

Table–3: S. No Level of Knowledge Frequency and Percentage Distribution of Samples according to Pre-Test level of knowledge

Sl. no	Level of knowledge	Frequency	Percentage
1	Inadequate	3	5
2	Moderate	57	95
3	Adequate	0	0

Table-4: S.No Mean, standard deviation and mean percentage for the Post-test knowledge of final year B.Sc. Nursing students.

Sl. no	Knowledge aspect	Mean	Standard deviation	Mean percentage
1	Blood borne infections	8.37	2.86	13.94
2	Universal precautions	12.57	5.31	20.94
overall		**20.94**	**8.17**	**34.88**

Table–5: Distribution of Samples according to Post Test level of knowledge

Sl. no	Level of knowledge	Frequency	Percentage
1	Inadequate	0	0
2	Moderate	29	48.33
3	Adequate	31	51.67

Section-III : Comparison of pre-test and Post-test knowledge regarding universal precautions and the prevention of blood borne infections among final year B.Sc. Nursing students.

Table-6: Test Comparison of pre-test and Post-test knowledge scores of final year B.Sc. Nursing students regarding universal precautions and the prevention of blood borne infections.

Test	Mean	Mean difference	Standard deviation	t value
Pre test	15.42	5.52	3.35	13.3
Post test	20.94		8.17	

Table 6 reveals that the knowledge scores on universal precautions and the prevention of blood borne infections among final year B.Sc. Nursing students had improved after intervention. The difference between pre-test and Post-test knowledge score is large and it is significant. Statistical significance was calculated using student „t" test.

Hypothesis testing

H1: There will be a significant difference between the mean pre-test and Post-test level of knowledge regarding universal precautions and the prevention of blood borne infections among the final year B.Sc. Nursing students. It is revealed that there is significant difference between the pre-test and Post-test knowledge score. Comparison was done by using students paired „t" test and the value is 13.3 which is significant. Therefore the research hypothesis H1 has been accepted.

Section-IV: Association of the pretest knowledge scores of final year B.Sc. Nursing students with the selected demographic variables.

Table–7: Level of association between pre- test knowledge and selected demographic variables.

Sl. no	Demographic variables	Pretest knowledge		Chi square test value	P value
		Inadequate	Moderate		
1	**Age in years**			0.226	0.63 NS
	21-22 years	3	53		
	23-24 years	0	4		
2	**Sex**			0.109	0.74 NS
	Male	0	2		
	Female	3	55		
3	**Income of parents (Rupees)**			23.91	0.00 S
	<10000	0	17		
	10001-20000	0	28		
	20001-30000	3	4		
	>30000	0	8		
4	**Type of family**			1.43	0.23 NS
	Nuclear	2	51		
	Joint	1	6		
5	**Parents occupation**			19.13	0.00 S
	Daily wages	0	36		
	Private sector	1	16		
	Government sector	2	2		
	Un employment	0	3		
6	**Place of residence**			1.78	1.81 NS
	Urban	2	17		
	Rural	1	40		
7	**Any relatives working in health sector**			4.42	0.35 NS
	Yes	0	35		
	No	3	22		
8	**Previous knowledge about universal precaution**			3.69	0.15 NS
	Class room	2	51		
	Mass media	0	3		
	Hospital	1	3		

Table 7 reveals the association between the socio demographic variables and the pre-test level of knowledge regarding universal precautions and prevention of blood borne infections. All the selected demographic variables except income of parents and parent"s occupation are not significantly associated with the pre-test knowledge scores. The association was determined by using Chi-square test. Hypothesis testing

H2: There will be a significant association between the pre-test knowledge scores of the final year B.Sc. Nursing students with their selected socio demographic variables.

It is revealed that there is a significant association of pre-test knowledge scores with income of parents and parent"s occupation. For other socio demographic variables there was no significant association. The association was calculated using Chi square test. Therefore the research hypothesis H2 is accepted and rejected the null hypothesis.

CONCLUSION:

The present study attempts to assess the effectiveness of structured teaching programme on knowledge regarding universal precautions and the prevention of blood borne infections among the final year B.Sc. Nursing students of selected nursing colleges at Datia and concluded that there was a significant improvement in the knowledge after structured teaching programme. It is effective in improving the knowledge of the final year B.Sc. Nursing student.

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