



A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING NEEDLE STICK INJURY AMONG FIRST YEAR BSC NURSING STUDENTS IN NIMS COLLEGE OF NURSING, NEYYATTINKARA

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ABSTRACT

Effectiveness of structured teaching programme on knowledge regarding Needle Stick Injuries among first year Bsc nursing students in NIMS college of nursing Neyyattinkara. **Objectives:** Assess the knowledge and attitude on prevention of Needle Stick Injuries among students. Evaluate the effectiveness of structured teaching programme on Knowledge regarding prevention of Needle Stick Injuries. Determine the association between knowledge and attitude scores of Nursing. **Methods:** The study was conducted in NIMS College of Nursing, Neyyattinkara and the research method adopted was pretest -post test design. As per the Inclusion criteria 60 samples were selected. The pretest score of knowledge and attitude was assessed by the structured questionnaire. A structured teaching program On prevention of Needle Stick Injuries (duration 30-45 minutes) was given and the Post test assessment was done after 1 week using the same tool. Post test it was done on the same tool. **Results:** The study revealed an increase in the knowledge and attitude level following the structured teaching program. In this study the statistical analysis showed that there was a significant improvement, in the level of knowledge and attitude after implementation of structured teaching programme and significant association between pre test score of knowledge and attitude on Prevention of Needle Stick Injuries with gender, year of studying, past history of Needle Stick Injuries. **Conclusion:** Structured Teaching Programme was helpful in improving knowledge and attitude among students regarding prevention of Needle Stick Injuries.

KEYWORDS :

BACKGROUND OF THE STUDY

A Needle Stick Injury is the penetration of the skin by the sharp object which has been in contact with blood, tissue or other body fluid of person who may be carrying infectious disease. Injuries from needles used in medical procedures or sharp injuries are sometimes called needle stick injury.

A needlestick injury is the penetration of the skin by a hypodermic needle or other sharp object that has been in contact with blood, tissue or other body fluids before the exposure. Even though the acute physiological effects of a needlestick injury are generally negligible, these injuries can lead to transmission of blood-borne diseases, placing those exposed at increased risk of infection from disease-causing pathogens, such as the hepatitis B virus (HBV), hepatitis C virus (HCV), and human immunodeficiency virus (HIV). Among healthcare workers and laboratory personnel worldwide, more than 25 blood-borne infections have been reported to be caused by needlestick injuries. In addition to needlestick injuries, transmission of these viruses can also occur as a result of contamination of the mucous membranes, such as those of the eyes, with blood or body fluids. Their main risk comes from the use and disposal of injection syringes. The prevention of needlestick injuries should focus on those health care workers that are most at risk. Education with training for at-risk healthcare workers can reduce their risk of needlestick injuries. Health care workers are more prone to blood-borne pathogens following Needle Stick and sharps injuries. A thorough understanding of the safe practices while handling needles is crucial for health care workers to create a risk-free work place environment. Healthcare workers are exposed to blood-borne infections, such as HIV, and Hepatitis B and C viruses, due to routine clinical procedures in the hospital. Acquiescence with universal precautions demonstrated to reduce the risk of exposure to blood and body fluids. It is vital that every health care personnel must be well informed about the exposure risks and educated regarding prevention of needle stick injuries.

Need For Study

Needle stick injuries commonly occur during blood collection procedure, recapping of the needles, and improper disposal of sharps. Due to needle stick injuries, the risk of infection

ranges from as low as 0.2 to 0.5 % for HIV, 3 to 10 % for hepatitis C Virus and 40 % for hepatitis B Virus. Nursing students and nurses are more prone to get needle stick injuries due to the lack of work experience and poor awareness of occupational protection.

An observational prospective study conducted from January 2011 – December 2013 by the academic health organization of North India shows that the incident rate of needle stick injury at the international level is around 3 million, national (India) level is 79.5 %, state (Kerala) level is 35 % and district (Trivandrum) level is 19.1 %. Cross-sectional study was conducted among 422 nursing students where, 393 completed questionnaires were submitted. Out of them 237(60.3%) nursing students reported needle stick injuries and most of them were female students who were working in frequent night shifts. Students who were not following the safety training program and not using personal protective equipments, 59.95 were injured by needle. Researchers found that needle stick injury is a common issue among nursing students. To avoid these problems among nursing students, researchers are planned to select this study. An investigation estimates the rates of injuries on a global level to affect about 3.5 million individuals. Needle sticks are virtually undocumented in developing countries, but probably equal or exceed those in the industrial world. In the absence of statistics from India, statistics from the United States provide some insight into the occupational risk. American health workers suffer 800,000 to 1 million needle sticks annually, not including the vast number that goes unreported. There are more than 100,000 needle stick injuries in UK hospitals each year.

- A health protection agency (HPA) report regarding health care professional, released in 2012 stated that :-
- Between 2002 and 2011; 4,381 significant occupational exposures were reported (Increased from 276 in 2002 to 541 in 2011)
- Between 2008 and 2011, there were 5 HCV hospital acquired transmissions from patients to health care workers following percutaneous exposure injuries, 3 reported from England and 2 in Scotland.
- Even though percutaneous injuries remain the most commonly reported occupational exposures, they have

decreased over time as a percentage of all exposures, whilst mucocutaneous exposures have shown on increase.

The Ontario Hospital association (2012) estimate that after an injury from needle contaminated with Hepatitis B virus, there is a 6-30% chance that an exposed person will get infected. In a similar situation with HIV, there is about 0-3% chance of infection and there is about a 20% chance of infection for Hepatitis C. Note also that because of Hepatitis B virus may survive on environmental surfaces for more than a week, indirect exposure can occur via contaminated inanimate objects. Injuries have transmitted many other diseases involving viruses, bacteria, fungi and other microorganisms to health care workers, laboratory researchers and veterinarian staff.

- Needle stick injuries are among the most important occupational injuries for the nursing professionals.
- Training the students and developing good sharps management plans can ensure safety from sharps. A standing order procedure should be formulated regarding sharp injuries in all health institutions.

Since needle stick injuries were highest in students and waste handlers due to lack of knowledge. Nursing students should made aware of hazards and preventive measures against needle stick

Statement Of The Problem:

A study to assess the effectiveness of structured teaching programme on level of knowledge regarding needle stick injury among first year Bsc Nursing students in Nims college of Nursing, Neyyattinkara

Objectives:

- 1 To assess the level of knowledge regarding needle Stick injury among first year Bsc Nursing Student before and after structured teaching programme
- 2 To find out the association between the pretest score of knowledge regarding needle stick injury among First year Bsc Nursing students and their selected demographic variables.

Operational Definition:

Assess: In this study assess refers to the organized systematic and continues process of collecting information regarding the level of knowledge on needle stick injury among first year Bsc nursing students.

Structured Teaching Programme: It refers to the planned teaching method which helps to provide knowledge regarding needle stick injury

First Year Bsc Nursing Students: It refers to the first year Bsc nursing students at Nims college of nursing,

Needle Stick Injury: It refers to percutaneous injuries, or percutaneous exposure incident or sharps injuries by a needle

Selected College: It refers to Nims college of nursing. An average of 250 students are studying

Hypothesis:

H1: There will be a significant difference between the mean pretest and post test scores on level of knowledge regarding needle stick injury among the first year Bsc nursing students.

H2: There will be a significant association between the pretest scores on level of knowledge regarding needle stick injury among first year Bsc nursing students and their selected demographic variable

Delimitation:

The study is limited to:

Assess the level of knowledge regarding needle stick injury. Selected college neyyattinkara.

A sample size of 30 students.

Conceptual Framework

Health Belief Model

Review Of Literature

Review of literature enables one to get an insight into various aspects of the problem under study. Review of literature is an essential step in the development of the research project.

The sources to obtain information on the topic were books, journals, abstracts, unpublished dissertations, Medline and internet. The literature reviewed has been presented under the following categories.

- Studies related to Needle stick injuries
- Studies related to knowledge on Needle stick injuries among nursing students
- Studies related to effects of Needle stick injuries

Research Methodology

Research methodology designed to develop or refine procedure for obtaining organizing and analyzing data . Research methods are the steps , procedure and the strategies for gathering and analyzing the data in a research investigation . This chapter deals with the methodological approach adopted to evaluate the knowledge of first year BSc nursing students on needle stick injury .

Research methodology organized all the components of the study deals with the type of research approach used , the setting of the study , the population , sampling technique , sample selection , the inclusion and exclusion criteria , the development of the tool , collection of data, pilot study , procedure of data collection and plan for data analysis .

Research Approach

Research approach is the basic procedure for the research enquiry . The research approach helps the researchers to determine what data to collect and how to analyze it . It also suggests possible conclusions to be drawn from the data . A descriptive survey approach was considered as the most appropriate and adopted for assess the knowledge on needle stick injury among first year BSC nursing students in nims college of nursing neyyattinkara .

Research Design

The research design refers to the researcher's overall plan for obtaining answers to the research question or for testing the hypothesis . Research design helps the researcher in selection of subjects , identification of variables , their manipulation and control . The research design adopted for this study was Non experimental descriptive design .

Setting Of The Study

The study was conducted in first year BSC nursing students in nims nursing college of neyyattinkara. The setting were choosen based in terms of availability if sample and feasibility for conducting study.

Variables Under Study

Variable is a an attribute of a person or object that to various, that is taken on different values

Dependent Variable

Knowledge of first year BSC nursing students regarding effect of needle stick injury

Extraneous Variables

Age, sex, educational qualification, previous class.

Independent Variable

Structured teaching programme

Population

The population refers to aggregates or totality of all the objects subject or members that conform to set of specification.

First year BSC nursing students (60)

Sample

Sample consist of the sunset of the population selected to participate in research study, sampling refers to the process of selecting the position of population which represents the entire population Sample for the study will be first year BSC nursing students in nims college of nursing.

Sample Size

Total sample size selected for the present study is 60

Sampling Technique

Convenient sampling technique is used for the present study

Sampling Criteria

Inclusion Criteria

Students there who are willing to participate in the study

Exclusion Criteria

Students who are not present on the day of the study.

Data Collection Tool

Selection and Development of the Tool

The data collection technique is through structured questionnaire. It was prepared to assess knowledge of first year B.Sc. nursing students regarding needle stick injury. Based on the research problem and objective of the study the following steps were under taken to select and develop the data collection tool.

The tool consists of 2 sections. Section 1

*Socio demographic variables consists of educational qualification, experience, age. Section 2

*The structured questionnaire in knowledge related to needle stick injury.

Description Of Data Collection Instrument

The data collection instrument is a questionnaire that consists of 2 sections. Part 1: demographic data

Part 2: knowledge regarding needle stick injury

Part 1 Demographic data

These parts of questionnaire. Deals with Socio-demographic characteristics of the study participants It include variables Such as age, occupation, educational status

Part 2: knowledge regarding needle stick injury

It deals with the questions to assess the knowledge of the participants regarding the needle stick injury. It consists of 20 questions comprising the risk factors and common signs and symptoms of needle stick injury

Ethical Consideration

Permission was obtained from institution (NIMS) ethical committee. Informed consent was obtained from every participant after brief explanation, regarding the study by the researcher.

Pilot Study

"Pilot study is a small scale version or a trial run, done in preparation for a major study". Knowledge about needle stick injury was assessed by using structured questionnaire on selected aspects. The time taken for the completion of the tool was in between 30-40min.

The pilot study result shows that the study is necessary on the

selected sample in the selected setting. Pilot study was conducted among 60 participants who met the inclusion criteria. No modification had done in the tool after the pilot study. The investigator do not faced any problem is conduction the pilot study, and the tool was found to be feasible.

Data Collection Procedure

Data collection is the gathering of information to address the research problem. The word data means information that is systematically collected is the course of study.

We obtained permission from the principal of NIMS college of Nursing to conduct a research study among first year B.Sc. Nursing students. Structured questionnaire were prepared to assess the knowledge regarding needle stick injury. It consist of 20 objectives such a way that research question can be answered. This chapter deals with the analysis and interpretation of data collected to asses the knowledge regarding needle stick injury. Type of multiple-choice questions

Plan Of Data Analysis

Analysis is a process of organizing and synthesizing data in descriptive and inferential statistics are used for the analysis of data. The data were coded and analyzed as per objectives of the study under the following readings.

Section A

Descriptive of samples according to their demographic variables

Section B

Assess the knowledge regarding needle stick injury

Analysis And Interpretation

Analysis and interpretation of data is an important phase of the research process, which involves the computation of certain measures along with searching for patterns of relationship that exists among the data group. Analysis is the process of organizing and synthesizing the data to answer research questions and test hypothesis.

The chapter deals with the analysis and interpretation of data collected using structured knowledge questionnaire to determine the effect of structured teaching programme on knowledge regarding prevention of Needle stick injury. Data collected from 60 samples were organized, tabulated, analysed and interpreted using descriptive and inferential statistics. The findings are organized and presented with the tables and figures. The details of each section are represented below to correlate with the objectives.

Organization and presentation of data

Section 1: Distribution of first year BSc nursing students according to socio demographic variables

Section 2: Assessment of pre-test and post-test knowledge scores on prevention of Needle stick injury.

Section 3: Effect of structured teaching programme on prevention of Needle stick injury.

Section 4: Association between pre-test knowledge with selected sociodemographic variables.

Section 1: Socio demographic variables of first year Bsc nursing students.

Table 1: Frequency and percentage distribution of socio demographic variables of first year BSc nursing students.

DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1) AGE		
a) 18	23	38.3
b) 19	24	40
c) 20	11	18.3
d) Above 20	2	3.33

2) GENDER		
a) MALE	7	11.6
b) FEMALE	53	88.3
3) EDUCATIONAL QUALIFICATION		
a) +2	55	91.6
b) DEGREE	5	8.33
4) RESIDENCE BELONG TO		
a) URBAN	13	21.6
b) RURAL	47	78.33
5) PARENT EDUCATION		
a) HEALTH PROFESSIONALS	5	8.33
b) OTHERS	55	91.6

Section 2: Assessment of pre-test and post-test knowledge scores on prevention of Needle stick injury.

Table 2: frequency and percentage distribution of pre-test and post-test level of knowledge scores regarding prevention of Needle stick injury

KNOWLEDGE LEVEL	PRE - TEST		POST - TEST	
	FREQUENCY	PERCENTAGE	FREQUENCY	PERCENTAGE
POOR	1	1.66	0	0
AVERAGE	32	53.33	3	5
GOOD	27	45	25	41.6
ADEQUATE KNOWLEDGE	0	0	32	53.3

Table shows that during pre-test, 1.66% of the students had poor knowledge, 53.33% had average knowledge, 45% had good knowledge and 0% had adequate knowledge. After structured teaching programme, none had poor knowledge, 5% had average knowledge, 41.6% had good knowledge and 53.3% had adequate knowledge. It reveals that there is an improvement in knowledge after structured teaching programme.

Section 3: Effect of structured teaching programme on prevention of Needle stick injury.

Table 3 : Mean, Standard deviation and t value for difference between pre-test and post- test knowledge scores.

VALUE	MEAN	STANDARD DEVIATION	T VALUE	D.F	TABLE
PRE - TEST	11.16	2.16	0.06	59	2
POST - TEST	15.25	2.18			

Section 3:- Table 3 shows calculated paired t test value with 59 degree of freedom at 0.05 level of significance is 0.06, which is greater than table value.

Section 4: Association between pre-test knowledge scores with selected demographic variables.

Table 4: Association between pre-test knowledge scores of first year Bsc nursing students regarding prevention of needle stick injury with selected socio-demographic variables

Age	Frequency	df	X ²	p value
18	23	16	71.345	.000
19	24			
20	11			
>20	2			

Association Between Age And Pretest Score

Gender	Frequency	df	X ²	p value
Female	53	8	61.314	.000
Male	7			

Association Between Gender And Pretest Score

Educational qualification	Frequency	df	X ²	p value
Plus two	55	8	72.765	.000
Degree	5			

Association Between Educational Qualification And Pretest Score

Residence	Frequency	df	X ²	p value
Urban	13	8	65.015	.000
Rural	47			

Association Between Residence And Pretest Score

Parent education	frequency	df	X ²	p value
Health professionals	5	8	72.599	.000
Others	55			

Association Between Parent Education And Pretest Score

Table 4 : shows the calculated value of chi-square at 0.02 level of significance is less than table value. So, there is no significant association between pre-test knowledge score regarding prevention of Needle stick injury with selected socio-demographic variables.

Summary

The chapter 4 deal with the analysis and interpretation of the data collected using a structured knowledge questionnaire. Analysis of data which includes the objectives, hypothesis and major findings of the study and interpretation of the data with the help of figures and tables.

RESULT AND DISCUSSION

This chapter presents a detailed on the major objectives, corresponding findings and observations during the conduct of the study. These findings are also compared with the findings of similar studies. Every day health care workers and medical students are exposed to dangerous and deadly blood Borne pathogens through contaminated needle sticks, splash exposures. Unsafe Injection is one of the major risk factors in the occurrence of needle sticks injury and other sorts related injuries in health care workers and general public. The main objective of the study is to assess the knowledge regarding prevention of needle Stick injury among first year nursing students.

*Frequency and percentage distribution of study participants according to their demographic data.

There are total 60 samples in the study. According to demographic variables. About 2 (3.33%) are above 20 years of age. Among the samples females are more than males, that is about 53(88.3%). Educational qualification of 55(91.6%) them is +2. 47(78.33%) is from rural area and 5 (8.33%) parents are health professionals. These findings are similar to another study conducted by Daewin in most of the subject 60% were in the age group of 18- 19 years, 30 % were in the age group of 20 - 21 years and 10 % in the age group of 22-23 years. Regarding the previous Knowledge 100% of the populations have neither attended conference nor seminar on Needle Stick Injuries (Daewin Das 2017).

*Frequency and percentage distribution of knowledge score regarding prevention of Needle Stick Injuries.

The present study reveals that, study conducted with 60 samples, participants on pretest are 60 first year Bsc nursing students and among them only 1(1.66%) have poor knowledge, 32(53.33%) have average score and 27(45%) of

them are having good scores but no one have adequate knowledge in pretest. When conducting the post test after 1 week of pretest and structured teaching program the adequate knowledge is 32(53.3%), good score for 25(41.6%) and average scores for 3 (5%). No one have poor scores. That revealsthe effectiveness of structured teaching program.

This study finding was supported by another study conducted by Saleem, 2010. The study revealed that the response rate of the survey was 85.75 where 61 (33.9%) were from IIIrd and IVth Year while 58 students (32.2%) were from 5th year. Most than 85% students had HIV from Needle Stick Injuries. Only 16.4 % III year Students, 29.5% IV year students and 36.2% final year students knew the full details Of needle stick injury prevention protocols, 47 (26%) students had Needle Stick Injuries in the past, however only 14 students (29.7%) had reported the incident either to their consultant or the infection control office

***The effectiveness of the structured teaching program on knowledge and attitude regarding prevention of Needle Stick Injuries.**

In pretest the mean is 11.16 and standard deviation is 2.16. For the posttest mean is 15.25 and standard deviation is 2.18.

Here the standard deviation is improved to 2.18 from 2.16. It concludes That there was a gradual increase in the mean and standard deviation of all Observations. The present study, the findings revealed that there is an increase in the Knowledge of the study participants after being exposed to the structured teaching Program. The results show that there was a significant improvement in the posttest Knowledge of the study participants. Hence H1 was statistically accepted, showing That the structured teaching programme was effective regarding prevention of Needle Stick injuries.

It Is supported by another study conducted to assess the effectiveness of Structured teaching programme on knowledge regarding needle stick, sharp injuries and their prevention among I st year B.Sc Nursing students. The data on sample Characteristics revealed that the pretest knowledge score was 18.33% of the students Had good, 63.33% showed average and 18.33% students showed poor knowledge. After the structured teaching program 28.33% students had good, 68.33% had average And 3.33% students had poor knowledge. It showed that the knowledge level Improved after the structured teaching programme (Sheetal Kadam, 2015).

***Association between pre test knowledge and attitude of study participants regarding prevention of Needle Stick Injuries and their selected demographic Variables.**

It was concluded that there was a significant association between pre-test Scores of knowledge of the study participants regarding prevention of Needle Stick Injuries with gender, year of studying and past history of needle stick injuries of Study participants. The calculated chi square value was greater than table value. The research Hypothesis was accepted.

CONCLUSION

The present study assessed the knowledge regarding needle stick injury among the first year BSc(N) students. After assessing the knowledge of students through structured questionnaire. It is found that 32(53.3%) had get adequate knowledge regarding needle stick injury.

Nursing Implications

The findings of the study have implications in the field of nursing education, nursing practice, nursing administration and nursing research. The nurse educators can make significant changes in improving the knowledge level of students regarding the prevention of needle stick injury in clinical practices, and thereby improving the knowledge

among the students.

Nursing Education

Nursing curriculum play an important role in the preparation of future nurse. Nursing curriculum must be focused on a holistic approach to incorporate preventive, promotive and rehabilitative services to these students. This study to assess the knowledge as it provides information regarding the knowledge of students in prevention of needle stick injury.

Nurse educator could use the findings of the study during their period of teaching. Nurse tutor can use the findings of this study as an example for the improvement of individualized nursing care and demonstrate autonomous nursing.

Nursing Practice

Nursing personnel's are challenged to provide standard and quality nursing care. These must be met only by keeping a touch with current trends in the ever changing advanced health technology. Nurses play a major role in the preventive aspects rather than the curative aspects.

Nursing Administrator

Nurse administrator could prepare a new protocol for preventing needle stick injury. The nurse administrator can introduce the measures to prevent the needle stick injury. Nurse can audit the incidence of needle stick injury and improve the preventive measures.

In collaboration with the education department, nursing administrators should take imitative ness in organizing services and for continuing education programmed for the nurse educators regarding the prevention of needle stick injury. Education based on applied theories in clinical practice based on evidence care important for autonomy.

Nursing Researcher

The study unwinds the knowledge regarding the prevention of needle stick injury. There is a lot of scope for exploring the area. More and more research can be carried out different aspect of preventive measures for needle stick injury. Other researchers conducting further studies in the same field could utilize the suggestions and recommendations.

Studies can be undertaken to develop programs that promote the use of appropriate preventive measures to satisfy nursing field.

Recommendations

Similar study can be conducted on large sample for wider generalization. The study period can be extended to get more intensified intervention.

- Experimental studies can be conducted.

The study can be repeated in government and private nursing colleges.

CONCLUSION

The knowledge regarding the preventive measures of needle stick injury was assessed. The study revealed that most of the patient has moderate knowledge regarding the preventive measures of needle stick injury and association between level of knowledge and demographic variables such are found to be not significant. A nurse should be able to identify preventive measures of needle stick injury as early as possible & able to apply evidence based practice in situation.

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