ASSESSMENT OF KNOWLEDGE REGARDING NEEDLE STICK INJURY AMONG NURSING STUDENTS

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ABSTRACT

As needle stick injury is the penetrating wound in the skin by a hypodermic needle or other sharp objects that has been in contact with the blood tissue or other body fluids before the exposure. The acute physiological effects of needle stick injury are generally negligible, these injuries can lead to transmission of blood borne disease, placing those exposed at increased risk of infection from disease causing pathogens such as Hepatitis B, Hepatitis C and Human Immunodeficiency Virus among healthcare workers, laboratory personnel's and nursing students worldwide. The objectives of the study were to assess the level of knowledge of needle stick injury among nursing students and to find an association between the levels of knowledge on needle sticks injury among nursing students with selected demographic variables. A quantitative research approach was used for the study. The sample size was 100 nursing students of selected nursing college were selected by using purposive sampling. The knowledge regarding needle stick injury was assessed using a self-structured questionnaire. Major finding of the study was, 9% of nursing students having good knowledge, 87% of nursing students having average knowledge and 4% of nursing students having poor knowledge regarding needle stick injury. The study reported that there is a significant association with the year of study of nursing students. There is no association with age of nursing students, gender of nursing, source of information. Study concludes that the sample population has average knowledge about needle stick injury.

Keywords: Assess; knowledge; needle stick injury; nursing students.

INTRODUCTION BACKGROUND OF THE STUDY

As needle stick injury is the penetrating of skin by a hypodermic needle or other sharp objects that has been in contact with the blood tissue or other body fluids before the exposure. Acute physiological effects of needle stick injury are generally negligible, these injuries can lead to transmission of blood borne disease, placing those exposed at increased risk of infection from disease causing pathogens such as Hepatitis B, Hepatitis C and Human immunodeficiency virus among healthcare workers, laboratory personnel's and nursing students worldwide[1].

These injuries can occur at any time when people use, disassemble or dispose of needles. When not disposed of properly, needle can hide in linen or garbage and injure other workers who encounter them unexpectedly. Eyes, nose and mouth should be protected if splashes with blood or body fluids are anticipated. Immediately perform first aid if someone has been exposed to blood or body fluids. Report the incident and exposure immediately to your employer. Follow instructions for further treatment and follow up from medical professionals, where necessary. Now more than 25 blood-borne virus infections have been reported to have been caused by needle stick injuries. In addition to needle stick 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, but needle stick injuries make up more than 80% of all percutaneous exposure incidents in the United States[1].

Needle stick injuries occur in the healthcare environment. When drawing blood, administering an intramuscular or intravenous drug or performing any procedure involving sharps, accidents can occur and facilitate the transmission of blood-borne diseases. Injuries also commonly occur during needle recapping or via improper disposal of devices into an overfilled or poorly located sharps container. Lack of access to appropriate personal protective equipment or alternatively, employee failure to use provided equipment increases the risk of occupational needle stick injuries. Needle stick injuries may also occur when needles are exchanged between personnel, loaded into a needle driver or when sutures are tied off while still connected to the needle[2].

Various procedures such as needle recapping, injuries sustained in the operating room, blood collection, and intravenous line administration, suturing and checking blood sugar can accidentally lead to needle stick injury. Nowadays needle stick injury is

increasing in student nurses due to the lack of knowledge about the prevention strategy of needle stick injury. The prevalence of needle stick injury among nursing students was 14.7% and the incidence of needle stick injury among healthcare workers during the previous 12 months was (91/786) 11.57%. The occurrence rate of needle stick injury among nursing students was 35%, so this study is conducted for assessing the knowledge of needle stick injury among nursing students.

STATEMENT OF THE PROBLEM

A descriptive study on assessment of knowledge regarding needle stick injury among nursing students at selected college Pathanamthitta district Kerala.

OBJECTIVES

1. Assess the level of knowledge of needle stick injury among nursing students.
2. Find out association between the level of knowledge on needle stick injury among nursing students with selected demographic variables.

OPERATIONAL DEFINITION

Assess – In this study assess refer to identification and evaluation of the knowledge related to needle stick injury among nursing students.
Knowledge - In this study, knowledge refers to awareness or familiarity about needle stick injury.
Needle stick injury - A needle stick 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.
Nursing students - In this study, students belonging to the year of study of 2nd and 3rd semester BSc Nursing

ASSUMPTION

a) Majority of nursing students may have average knowledge of needle stick injury.
b) Knowledge of nursing personnel may vary according to demographic variables.

RESEARCH APPROACH

Research approach means the description of a plan to investigate the phenomenon under study. Research approach is a frequently used term in research which is an important element of the research design. Research approach used in the study was **Quantitative Research Approach.**

RESEARCH DESIGN

The term research design refers to the researchers overall plan for obtaining answers to the research questions and it spells out strategies that the researcher adopted to develop the information that is accurate, objective and interpretable. The research design used in the study was **Descriptive research design.**

POPULATION

In this study, population consists of 2nd and 3rd semester nursing students in selected college at Pathanamthitta district.

SAMPLE AND SAMPLING TECHNIQUE

Sample: Nursing students of 2nd and 3rd semester B.Sc. nursing Sample size: 100 nursing students
Sampling technique: Purposive sampling technique

DESCRIPTION OF THE TOOL

Section A consists of items in demographic variables including age, gender, year of study, previous knowledge regarding needle stick injury, exposure to needle stick injury.
Section B consists of 30 questions related to needle stick injury. Scoring consists of 18-25 - Good Knowledge

9-17 - Moderate Knowledge0-8 - Poor Knowledge
For section B score 1 was awarded for all the correct responses and score 0 was given for the wrong response. This maximum possible score was30.

CONTENT VALIDITY

Refers to the degree to which the items of an instrument adequately represent the universe of content for the concept being measured. To establish content validity the tool along with the objectives, assumptions, operational definition and structured questionnaires were submitted to five experts from nursing education (child health department, Medical and Surgical department, Community health department and mental health department). Suggestions and recommendations given by experts were accepted and necessary modifications were done. The research tool was finalized according to the expert's opinion.

DATA COLLECTION PROCESS

Data collection is a precise, systematic gathering of information relevant to the research through objective questions before the purpose of validating the hypothesis of the study. The study was conducted at MGM Muthoot college of nursing, Kozhencherry on 10-08-2023 and the data was collected using self-structured questionnaire among 100 nursing students who in the age group of 17 to 20years. After obtaining a formal permission from the principal of the college, the students from 2nd and 3rd semester B.Sc. nursing were selected for the data collection. The students were selected on the basis of inclusion and exclusion criteria by purposive sampling technique. Written informed consent from the participants was obtained after explaining the purpose and the need of the study. The confidentiality of the information was maintained. Data was collected using self-structured questionnaire. Time period of 15minutes was provided for completing the questionnaire. The subjects were cooperative during the study.

PLAN FOR DATA ANALYSIS

Analysis is a process of organizing and synthesizing data so as to answer research questions and test the hypothesis. Data analysis is planned based on the objectives of the study. After collection of data were organized, tabulated by using descriptive and inferential statistics manually in MS Excel 2007 version frequency and percentage were used to define baseline data and knowledge scores. As the knowledge was in the ordinal data, on-parametric test were adopted for the association of the knowledge score with demographic variables, chi-square test was computed. The research methodology is making an overall plan for the research problem to solve it in a systemic and scientific manner. This chapter dealt with the description of the research approach and design, setting of the study, population and sample, sampling technique, sampling criteria, description of the tool and the validity of the tool, pilot study, data collection process and plan for the data analysis.

FINDINGS OF THE STUDY

Distribution of samples according to socio demographic data.
In the present study, the distribution of nursing students of selected college according to age revealed that 7% nursing students were in the age group of 17-18 years, 90% of nursing students were in the age group of 19-20 years, 3% nursing students were in the age group of 21-22 years and0% of nursing students were in the age group of 23-24years.
Distribution of nursing students according to gender, 12% of nursing students were male, 88% of nursing students were female and 0% of nursingstudents were transgender.
Distribution of nursing students according to their year of study, 51% of nursing students were in 2nd semester BSc nursing and 49% of students were in 3rd semester B.Sc. nursing.
Distribution of nursing students according to previous source of information, 75% nursing students have previous source of knowledge from book, 1% nursing students have previous knowledge from journals, 16% nursing students have previous knowledge from online database and 8% nursingstudents have previous knowledge from newspaper.
Distribution of nursing students according to exposure to needle stick injury, 2% nursing students have exposed to needle stick injury and 98% nursing students were not exposed to needle stick injury.

Assessment of the level of knowledge regarding needle stick injury among nursing students of selected college
Description of self-structured questionnaire to assess the knowledge of needle stick injury, 9% of nursing students were having good level of knowledge, 87% nursing students were having average level of knowledge and 4% nursing students were having poor level of knowledge.

Association of knowledge of nursing students with demographic variables
The chi-square value showed that there was a significant association between the knowledge score of nursing students in selected college with year of study, and has no association with age of students, gender of students, previous source of information and exposure to needle stick injury

Table 1: Distribution of nursing students according to year of study

N=100

Year of study	Frequency	%
a) 2 nd semester	51	51%
b) 3 rd semester	49	49%

The data presented in the Table 1 depicts that 51% of nursing students from 2nd semester BSc. nursing and 49% of nursing students from 3rdsemester B.Sc nursing.
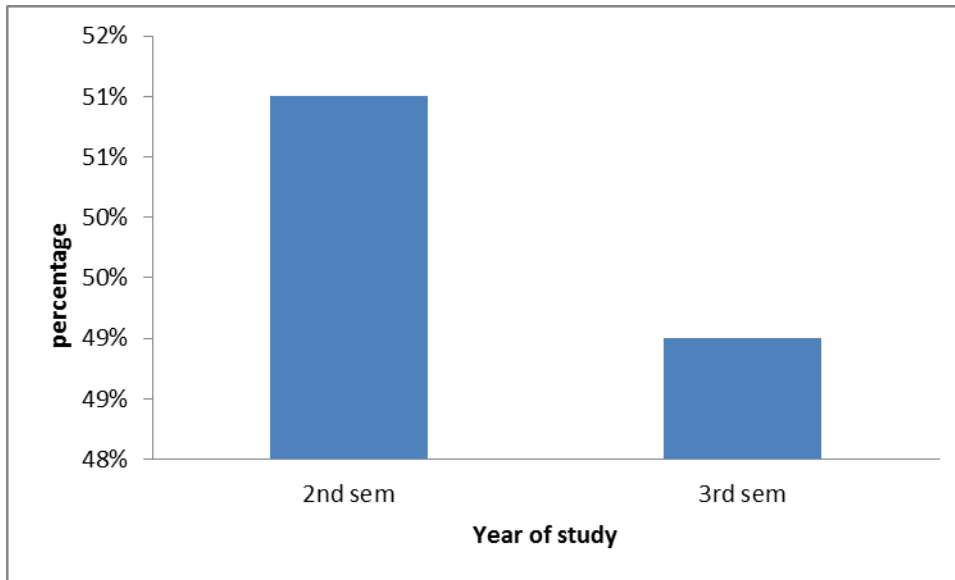

Figure 1: Bar diagram showing distribution of students based on year of study.
Figure 1 depicts that 51% of nursing students were within 2nd semester B.Sc. nursing and 49% of nursing students were within 3rd semester B.Sc.nursing

NURSING IMPLICATIONS

The findings of the present study generate some implications to the health care delivery system. It has implications in nursing practice, nursingadministration nursing education and nursing research.

Nursing Practice
1. Nurses can increase the knowledge regarding needle stick injury among nursing students and it helps them for early identification and treatment.
2. Greater understanding of needle stick injury may facilitate immediate and emergency health interventions.
3. Nurses should inform the nursing students about needle stick injury and its management, in order to make a knowledgeable choice of alternatives.
4. Specific guidelines regarding needle stick injury should be implemented among the nurses.
5. Health education should be provided for the nurses in clinical area, for the early identification and management of needle stick injury.

Nursing Administration
1. Nurse administrator can encourage the nursing personnel to use most effective learning practices.
2. Improve the knowledge level of staff nurses by conducting continuous nursing education programs.
3. Clinical nurse should prepare effectiveness of learning practices to provide information to the public.

Nursing Education
1. The nurses also can act as an educator by educating the nursing students.
2. Nurse educator should focus on the needs of patients, along with the practice sections, in order regarding the needle stick injury.
3. The knowledge level of student nurses regarding needle stick injury should be improved by conducting webinar, orientation

programs, quizcompetitions.

Nursing Research

1.   The nurse researcher can work towards developing a tool to measure various dimensions in terms of knowledge, attitude and practice towardsearly identification and treatment of needle stick injury.

2. There is a need for research in this area so that the strategies for educating nurses regarding various aspects of prevention of needle stick injuries.

Limitations

1. Sample size was small, this limits the generalization of the study

2 The study included only 2nd and 3rd semester of BSc nursing students.3 The study was limited to nursing students.

Recommendations

1 Similar study can be conducted among large sample to generalize the findings.

2. Similar study can be conducted among different colleges.

3. There is a need to explore many similar studies in different settings

CONCLUSION OF THE STUDY

The study was aimed to assess the knowledge regarding needle stick injury among nursing students and find out the association between the levelof knowledge and selected demographic variables.

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