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A study to assess the effectiveness of self-instructional module on needle stick injuries among nursing personnel in Rama Hospital Kanpur, UP

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Abstract
AIM of the study: To assess the effectiveness of self instructional module on needle stick injury among nursing personnel.
Objectives of the study
- To assess the pre-test and post-test knowledge regarding needle stick injuries for nursing personnel.
- To assess the effectiveness of self-instructional module on needle stick injuries for nursing personnel.
- To find out the association between pre-test level of knowledge and selected demographic variables of nursing personnel.

Method: In this research Study, the research approach adopted for the study was quantitative research approach and the research design was one group pre-test design. Setting of the study was selected in Rama Hospital, Kanpur and the population was nursing personnel working in Rama Hospital Kanpur. The sample size were 30, selected by convenient sampling technique. Consent was taken from the sample before data collection. Demographic data were collected by structured questionnaire. The pre-test knowledge was assessed and self instructional module was given to the participants after pre-test knowledge assessment.
Results: The study shows that among 30 nursing personnel, level of knowledge on needle stick injuries, 80% gained adequate knowledge, 20% gained moderate knowledge.
Conclusion: The study concludes that self instructional module is very effective in improving knowledge of the nursing personals on needle stick injuries.

Keywords: nursing personnel, needle stick injuries, self instructional module

Introduction

"CARING FOR THOSE WHO CARE"

A safe injection is one that does not harm the recipient, does not expose the provider to any avoidable risk, and does not result in any waste that is dangerous to the community. Each day thousands of health worker around the world, suffer accidental occupational exposures during the course of their role of caring for patients.

These injuries can result in a variety of serious and distressing consequence ranging from extreme anxiety to chronic illness and premature death. The health care workforce, 35 million people worldwide, represents 12% of the working population The misconception exists that health care industry is without hazards, but in fact blood borne exposures encountered can be career and life-ending2.

Need for the study

It is estimated that sharp injuries cause about 66,000 HBV, 16000 HCV and 200- 5000 HIV infections among health care workers every year. For health care workers worldwide the attributable fractions for percutaneous occupational exposure to hepatitis B, hepatitis C and human immunodeficiency virus are 37%, 39% and 44% respectively. These blood borne diseases have serious consequences, including long term illness, disability and death. In addition care workers by sharp injury including those that cause tuberculosis, diphtheria, herpes and malaria6.

Hypothesis

H_1: There is significant difference between pre-test and post-test knowledge scores regarding needle stick injuries among nursing personnel.

H_2: There is significant association between pre-test knowledge scores with their demographic data regarding needle stick injuries among nursing personnel.

Assumption

- Nursing personnel may not have adequate knowledge on needle stick injuries.
- Knowledge of nursing personnel may vary according to demographic variables.
- Self instructional module may improve the knowledge of nursing personnel on needle stick injuries.

Delimitation

This study is delimitated to nursing personnel who are

- Willing to participate in the study
- Able to read and write English
- Present during data collection period

Research methodology
Research approach: Quantitative research approach.

Research Design: One group pre test post test research design.

Setting of the study: Rama hospital & research center in Kanpur.

Variables
Independent variable: Self-instructional module regarding needle stick injuries.

Dependent variable: Nursing personnel knowledge regarding needle stick injuries.

Demographic variable: Age, sex, qualification, type of working area, income, vaccination status, special infection control training program are the demographic variables.

Population: All the nursing personnel in Rama Hospital.

Sample: nursing personnel in selected departments in Rama Hospital, Kanpur.

Sample size: 30 nursing personnel in Rama Hospital, Kanpur.

Sampling technique: Convenient sampling technique.

Sampling criteria
Inclusion criteria: Nursing personnel who are:
- Willing to participate in the study
- Able to write and speak English

Exclusion criteria: Nursing personnel, who is:
- Not present during data collection
- Not working in Rama Hospital, Kanpur

Development and description of tools used in the study
The tool to assess the knowledge of nursing personals on needle stick injuries was developed by the investigator by submitting to the review. validity and reliability of the tool was checked.

The tool consists of 2 sections
Section A: consist of demographic data includes age, sex, qualification, type of working area, income, vaccination status, special infection control training program is the demographic variables.

Section B: Consist of question related to needle stick injury (closed ended multiple choice questionnaire which consist of 30 items pertaining to knowledge regarding needle stick injury among staff nurses).

Scoreing key
To assess the level of knowledge of nursing personals regarding needle stick injuries.

Table 1

S. No.	Level of knowledge	Scoring
1.	Adequate	21-30
2.	Moderate	11-20
3.	Inadequate	0-10

Data collection procedure
The data collection was completed within the period of 2 weeks, from 24/03/2017 to 7/04/2017. After obtaining permission from the ethical committee the investigators approached staff nurses and explained to them the purpose of the study. They were assured the all the data would be kept strictly confidential and would be used only for the study purpose. After obtaining their willingness data were collected from 30 staff nurses working in Rama hospital by using the structured questionnaire. After conducting the pretest, Self-instructional module was given on the same day and post-test was conducted on 5th day after self instructional module with the same pretest questionnaire.

Plan for data analysis
The data obtained from 30 samples was analyzed by adopting the Descriptive statistics as frequency and percentage of samples, mean, standard deviation and inferential statistics as t test, chi-square test was prepared in accordance with various characteristics under study and percentage analysis was found.
Section I: Socio-demographic data
Section II: Pretest & post test knowledge level on needle stick injuries.
Section III: Effectiveness of Self Instructional Module on knowledge regarding NSI.
Section IV: Association between pre-test knowledge score with their Socio demographic variables.

Data Analysis and Interpretation
The data were analyzed based on the objectives of the study.
The data collected from the 30nursing personnel in Rama Hospital.
Section I: Demographic data

Section II

Table 2: Pretest & post test knowledge level on needle stick injuries. N=30

Knowledege	pretest		Post test	
	frequency	percentage	frequency	percentage
Adequate	0	0%	24	80%
Moderate	26	86.67%	6	20%
Inadequate	4	13.33%	0	0%
Total	30	100%	30	100%

Section III

Table 3: Effectiveness of SIM on needle stick injuries N=30

Knowledge score	**Pre test**	**mean**	**SD**	**T**	**P**
		13.8	3.5	11.46	2.02
	Post test	23.43	3.15		

Section IV

Association between pre-test knowledge and selected demographic variables of nursing personnel. There was no association of knowledge score with selected variables like age, sex, qualification, types of working area, income, vaccination status, total year of experience and special infection control training program among nursing personnel

Discussion

Major Findings of the study

1. Among the total samples, most of the samples (43.33%) belongs to the age group of 20 -25 years, 36.67% belongs to the age group of 26-30 years, 10% belong to the age group of 31 -35 years and 10% belongs to the age group of 36 years or above.
2. About the gender, majority (73.33%) of the sample were female and only 26.67% of the sample was male.
3. Distribution of the samples as per designation, most of the samples (66.67%) were as nursing staff, 26.66% were as ward in charge, and only 6.66% were as floor in charge.
4. Distribution of samples as per their educational status, showed most of the samples (80%) of the sample belongs to GNM, 20% of the sample belongs to ANM.
5. Among the total samples, (43.33%) of the samples belonged to the total years of experience of 1-3 years, 30%of the sample belonged to <1 years of experience, 13.33% of the sample belongs to 4-6 years, 6.67% of the sample belongs to 7-8 years and 6.66% of the belongs to >10 years.
6. Distribution of the samples as per the working area, most of the samples (26.67%) were from medicine ward, 23.33% were from surgery ward, 10% were from TB Chest ward, 6.66% were from OBG/Gyneward, 6.66% were from ENT ward, 6.66% were from ophthalmology ward, 6.66% were from ICU, 6.66% were from pre/postoperative ward, 3.33% were from dermatology ward and 3.33% were from pediatrics ward.
7. Distribution of the sample as per their previously attended teaching program on needle stick injury, most of the sample (86.67%) did not attend and only 13.33% attended teaching program on NSI previously.
8. Distribution of the sample as per their receiving immunization against Hepatitis B, most of the sample (60%) received and 40% did not receive immunization against Hepatitis B
9. The overall pre- test knowledge scores regarding NSI among nursing personnel shows that majority (86.66%) of the samples had moderate knowledge score and only (13.33%) of the sample had inadequate knowledge score regarding NSI. The overall mean score and standard deviation of pretest knowledge score regarding needle stick injury among staff nurses were 13.8 and standard deviation +_3.48 respectively.
10. The post- test assessment reveals that, 80% of nursing personnel have adequate score, 20% of nursing personnel have moderate knowledge score, and 0% 0f the staff nurses had inadequate knowledge score. This shows that Self-Instructional Module is effective.

Conclusion

1. Nursing personnel did not have adequate knowledge regarding needle stick injury.
2. Self-Instructional Module was very effective in improving the knowledge regarding needle stick injury.
3. There was no significant association between knowledge about needle stick injury and socio- demographic variables like age, sex, qualification, types of working area, income, vaccination status, special infection control training program.

Recommendations

Based on the findings of the study the following recommendations have been made for further study.

- A large scale study can be carried out to generalize the findings.
- A similar study can be conducted by true experimental approach.
- A similar study can be conducted by using the Self-Instructional Module for educating the paramedical professionals.

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