

AN EVALUATIVE STUDY WAS CONDUCTED TO ASSESS THE EFFECTIVENESS OF SELF-INSTRUCTIONAL MODULE ON PREVENTION OF NEEDLE-STICK INJURIES FOR STAFF NURSES AT SELECTED HOSPITAL IN MYSORE.

Mrs. Tamilselvi* | Dr. Santosh Sharma**

*Research Scholar in Himalayan University, Itanagar in Arunachal Pradesh, India.

**Research Supervisor in Himalayan University, Itanagar in Arunachal Pradesh, India.

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ABSTRACT:

Needle stick injuries are very common and an occupational hazard for all the health care workers in India. Worldwide, approximately 2 million workers experience a needle – stick injuries each year. A needle stick injury could transmit hepatitis –B, hepatitis-C or the human immunodeficiency virus (HIV). This study was aim to determine the effectiveness of self-instructional module on prevention of needle –stick injuries for staff nurses at selected hospital in Mysore. The conceptual frame work was based on System Theory by Von Bertalanffy. The research design adopted for the present study was non- equivalent control group quasi experimental design. A knowledge questionnaire was developed to assess knowledge of staff nurse regarding prevention needle stick injury. To find the significance of this value a “t” test was computed an obtained value of ‘t’ (29) = 7.9893, $p < 0.05$ is found to be significant. Hence, null hypothesis (H_0) was rejected and research hypothesis (H_1) was not rejected. Keeping in view the findings of the present study, the following recommendations were made. Since this study was carried out on a small convenience sample, the results can be used only as a guide for further studies.

Key Words: Self-instructional module.

ABOUT AUTHORS:



Author, Mrs. Tamilselvi is a Ph.D. Scholar at Himalayan University, Itanagar, Arunachal Pradesh, India.



Author, Dr. Santosh Sharma is Research Supervisor at Himalayan University, Itanagar, Arunachal Pradesh, India.

INTRODUCTION:

The primary route of occupational exposure to bloodborne pathogens is percutaneous needle stick injuries. Health care workers (HCWs) handle sharp devices and equipment such as hypodermic and suture needles, intravenous blood collection devices, phlebotomy devices and scalpels. In the United States approximately 800,000 needle stick injuries are estimated to occur in the hospital setting annually an average of one injury every 10 seconds. However, the true incidence of sharps injuries is known because many injuries go unreported in both health care and public safety setting. Centers of Disease Control and Prevention (CDC) studies have estimated that the rate of sero conversion following occupational parenteral exposure to infected blood is approximately 6% to 30% for HBV exposures, 5% to 10% for HCV exposure, and 0.3% for HIV exposure.

MATERIAL AND METHODS:**Research approach:**

An evaluative approach was selected for the study.

Research design:

The research design adopted for the present study was non-equivalent control group quasi experimental design.

Setting of the study:

The study was conducted at a hospital in Mysore.

Population:

The population represents the entire group under study. In the present study the population was defined as the staff nurses working in selected hospital.

Sample size:

The sample for the study consisted of 60 staff nurses (30 in experimental group and 30 in control group).

Sampling technique:

Nonprobability convenience sampling technique was used for the selection of the sample.

Instrument and scoring procedure:

The tool consists of 3 parts

Part I

Structured knowledge questionnaire to assess the knowledge of staff nurses regarding the prevention of needle stick injuries.

Part II:

Observational checklist to assess the practices of staff nurses regarding prevention of needle stick injuries.

Part III:

An opinionnaire to evaluate the self- instructional module in terms of its acceptability and utility.

Validity:

The tools prepared were given to nine experts from the field of nursing and clinical microbiology.

Reliability:

The reliability co-efficient was found to be 0.93 which indicated that knowledge questionnaire was reliable. The reliability co- efficient for the structured observation checklist was found to be 0.96 which was considered to be highly reliable.

Data collection procedure:

The investigator conducted the study in two phases. In first phase the study was conducted for control group and in second phase for the experimental group. In first phase for control group day 1 knowledge was pretested by administering the knowledge questionnaire and day 2 practices were pretested by administering the observation practices checklist through non-participant overt observation technique. On 14th day post test was administered by using the same structured knowledge questionnaire and practice observation checklist. In experimental group, day 1 knowledge was pretested by administering the knowledge questionnaire and day 2 practice were pretested by administering the observation practice checklist and subject in experimental group were given copies of SIM to read.

The following instructions were given to them regarding the SIM:

1. To keep the SIM with them for 130 days.
2. To study the SIM thoroughly and systematically.
3. To come prepared for the post test on 14th day.

Thus, the subject had 13 days to go through the SIM, and learn the content themselves. The post- test was administered individually on the 14th day by using the same structured knowledge questionnaire and practice observational checklist.

Table I: Mean, mean difference, S.D of the difference, standard error of the mean difference and “t” value of pre-test and post-test practice scores of staff nurses in experimental group. N=30

Knowledge scores	Mean	Mean _D	SD _D	SE _{MD}	Paired “t” test value
Pre test	5.16	1.8	0.21	0.328	-7.9893
Post test	6.96				

“t” (29) =2.04, $p \leq 0.05$

Table 1 shows that in experimental group, the mean difference between pre test and post test practice score is 1.8. This indicates an increase in practice score after the use of SIM. To find the significance of this value a “t” test was computed and obtained value of “t” (29) =7.9893, $p \leq 0.05$ is found to be significant.

Table II: Mean, mean difference, S.D of the difference, standard error of the mean difference and “t” value of pre-test and post-test practice scores of staff nurses in control group. N=30

Knowledge scores	Mean	Mean _D	SD _D	SE _{MD}	Paired “t” test value
Pre test	5.06	0.30	0.25	0.054	1.8094
Post test	5.36				

“t” (29) =2.04, $p \leq 0.05$

Table 1 shows that in experimental group, the mean difference between pre test and post test practice score is 0.30. To find the significance of this value a “t” test was computed and obtained value of “t” (29) =1.8094, $p \leq 0.05$ is not found to be significant at 0.05.

RESULT AND DISCUSSION:

Maximum number of staff nurses belonged to the age group between 21-25 years. Majority of staff nurses had 1-5 years of working experience. Similar findings were observed regarding the age group and total nursing experience in a study conducted by ayranic, it was seen that 62% of nursing staff included in the study were below 26 years of age and had below 5 years of experience. The pre test knowledge score varied from 7-14 in the experimental group and between 6-15 in control group. Whereas the maximum possible score was 20. The mean pre test knowledge score was 9.86 with standard deviation ± 2.262 in experimental group and 10.30 with standard deviation ± 2.54 in control group. The post test knowledge score varied from 11-8 in the experimental group and between 8-15 in control group. In experimental group coefficient value computed between the pre test knowledge and practice scores $r=0.25$ was not found to be significant for $df=28$. In control group coefficient of correlation value computed between the pre test knowledge and practice score $r=0.322$ was found to be significant at 0.05 level of significant. Correlation “r” value was computes between the post test knowledge and post test practice score were $r(28) =0.3017$ was found to be significant at 0.05 level of significance.

CONCLUSION:

The pre test conducted to identify the knowledge and practice of staff nurses regarding prevention of needle stick injuries showed that the staff nurses had very less knowledge on prevention of needle stick injuries. Further, they also lacked in practice to prevent the occurrence of needle stick injuries. This suggest that there was a need to educate these staff nurses regarding prevention of needle stick injuries in order to prevent the spread of deadly infections like HIV, HCV and HBV.

IMPLICATIONS:

The role of training and education is to improve the efficiency and effectiveness of safe and quality of care. The implication made in the study is vital concern to the nursing practice, nursing education, nursing administration and nursing research.

Nursing practice:

The SIM is a source of teaching strategy and can fulfill the role of uplifting the nurse’s knowledge. The international council nurses stated the importance of continuing nursing education in order to ensure safe and quality care. The findings also create awareness that the nurses are not self-sufficient in the area of prevention of needle stick injuries.

Nursing education:

The curriculum may be responsible for nurse's knowledge and practice on prevention of needle stick injuries but nurse's educator have the additional responsibility to update this knowledge in students and nursing staff in hospital.

Nursing administration:

The nursing administrator's responsibility is to provide In-service education programme to the nursing personnel. So that they can keep abreast in the advance technology. They should plan, organize and conduct educative sessions on prevention of needle stick injuries.

Nursing research:

Research is to assess the knowledge and practice of staff nurses regarding prevention of needle stick injuries which helps to reduce the incidence of and hazards (HIV, HBV, HCV) of needle stick injuries.

RECOMMENDATION:

Keeping in view the findings of the present study, the following recommendation were made.

- ✓ A similar study can be conducted for other health care workers in hospitals.
- ✓ The study can be repeated by taking a larger sample.
- ✓ An experimental study may be conducted to assess the knowledge, practice and attitudes of nurses after structured teaching programme on prevention of needle stick injuries.
- ✓ A comparative study to assess the effect of SIM and other teaching strategies in bringing the change in knowledge, practice and attitude of the nurses may be done.
- ✓ Studies to determine the cost effectiveness of the SIM may be conducted.
- ✓ Periodical updating of the SIM based on the revision may be taken up.

REFERENCES:

1. Smith J A Wilkinson W E, Jacqueline Agrew. Occupational health in hospitals, infection caused by needle stick injuries, Journal of occupational health and safety, 1990;4(4) p.103-117
2. Jagger, Rate of needle sticks injury caused by various devices in a university hospital, New England Journal of Medicine August 1998. Feb 19(1) p 41-59.
3. Armstrong S E, the cost of needle stick injuries and impact of safer medical devices, Journal of Nursing Economic Nov, 1991, Vol.9, p-381-394.
4. Shen C, Risk of needle stick and sharp objects injuries among medical students, American Journal of infection control, 1998 27: p. 435-437.
5. Centre disease control, preventing needle stick injuries in health care settings, department of health and human services, 1999 p. 2000-2008.