ISSN: 0975-833X

Available online at http://www.journalcra.com

International Journal of Current Research
Vol. 11, Issue, 09, pp.6890-6892, September, 2019

DOI: https://doi.org/10.24941/ijcr.36479.09.2019

INTERNATIONAL JOURNAL OF CURRENT RESEARCH

RESEARCH ARTICLE

EVALUATION OF SKILL TRAINING PROGRAMME ON PREVENTION OF NEEDLE STICK INJURY IN B.S.C. NURSING STUDENTS OF TIRUPATI

Leela lavanya T. and *Dr. Nagarathnam, M.

Department of Medical and Surgical Nursing, College of Nursing, Sri Venkateswara Institute of Medical Sciences, Tirupati, Chittoor, Andhra Pradesh, 517501, India

ARTICLE INFO

Article History:
Received 17th June, 2019
Received in revised form
20th July, 2019
Accepted 28th August, 2019
Published online 30st September, 2019

Key Words:
Needle stick,
Prevention,
Nursing students.

Corresponding author:* **Dr. Nagarathnam, M.

ABSTRACT

Introduction: Occupational accidents are common in any area of work, including hospitals. Every year, hundreds and thousands of health care workers are exposed to deadly diseases like HIV and Hepatitis C through needle stick injuries. ***Objectives:*** To assess the knowledge on prevention of needle stick injury before and after the skill training program, to determine the effectiveness of skill training program by comparing pre test and post test level of knowledge and to associate the knowledge on prevention of needle stick injury with skill training programme on needle stick injury. ***Materials and methods:*** Quasi experimental one group pre and post-test research design was used for the study. 143 B.Sc. nursing students of 1st and 2nd years were selected as participants by simple random lottery sampling technique. A structured questionnaire was used to assess the knowledge and skill on prevention of needle stick injury. ***Results:*** In pre-test 43.4% of the students had inadequate knowledge, 49% showed moderate knowledge and 7.7% had adequate knowledge. After the administration of skill training programme 47.6% had moderate, 52.4% had adequate knowledge, 40.6% had moderate skill and 59.4% had high skill in practicing safe recapping techniques and disposal methods after the skill training program in post test. ***Conclusion:*** The skill training programme was an effective mode to create awareness and helps to improve the knowledge and practice of safety measures to prevent needle stick injury among nursing students.

***Citation: Leela lavanya, T. and Dr. Nagarathnam, M.*, 2019.** "Evaluation of skill training programme on prevention of needle stick injury in B.S.C. nursing students of Tirupati", *International Journal of Current Research*, 11, (09), 6890-6892.

INTRODUCTION

Health care workers in all health care setting are at risk for acquiring infection because of exposure to number of types of diseases. Health workers can protect themselves from contact with infections in arterial or exposure to communicable diseases by having knowledge on the infectious process and appropriate barrier protection (Potter and Perry). Every year, hundreds and thousands of health care workers are exposed to deadly diseases like HIV and Hepatitis C through needle stick injuries (American Nurses Association's needle stick injury prevention guide, 2002). One of the most potentially hazardous procedure that health care personnel face is using and disposing of needles and sharp instruments. Needle stick injuries present's a major risk for infection with hepatitis B virus, hepatitis C virus and HIV (Barbara kozier and Andreyberman, 2007). Needle stick injuries may be defined as the parental introduction of blood or other potentially infectious material by a hollow bore needle or sharp instrument, including but not limited to needles, lancets, scalpels and contaminated broken glass. Body fluids other than blood which also pose a risk of infection include cerebral spinal fluid, peritoneal fluid, pleural fluid, synovial fluid, amniotic fluid, semen, vaginal discharge, saliva and unfixed tissues and organs (Rishi buli and Aprveen Sharma, 2008). Needle stick injuries are a common event in a health care environment when drawing blood, performing other procedures involving sharps, the needle can slip and injure the health care worker. Injuries also commonly occur during needle recapping or improper disposal of devices into an overfilled or poorly located sharp containers .This sets the stage to transmit viruses from the source person to the recipient. Needle stick injuries are more common among health care workers during night shifts. For less experienced people fatigue, high work load, high pressure, or high perception of risk can also increase the risk of chances of needle stick injury. During surgery, a surgical needle may inadvertently penetrate the glove and skin of the surgeon or assistant with the scalpel or other sharp instruments are handled as a needle stick injury (Sarrazin *et al.,* 2005). Nursing students as other health care workers who came in to contact with patients blood and body fluids may be exposed to fatal infections when they perform their clinical activities in the hospital (Ayranci and Kosgoreglu, 2004; Smith and Legget, 2005). The physical effects of needle stick injury are pain, redness, swelling, physiological effects of occupational needle stick injuries are anxiety about disclosure or transmission to asexual partner, trauma-related emotions and depression.

These effects cause self-destruction behaviour or functional impairment in relationship daily life (Ferguson, 2012). As Sri Venkateswara Institute of Medical Sciences where Iam persuing M.Sc.(N) has got the first level National Accreditation for Board of Hospitals recognition and as a part of infection control to prevent transmission of diseases like HIV, Hepatitis-B, Hepatitis-C and other blood borne diseases all the health care workers need to be trained on infection control measures on needle stick injury which made me to select the present topic to train the nursing students on measures for prevention and management of needle stick injury.

Objectives:

- To assess the knowledge on prevention of needle stick injury before and after the skill training program
- To determine the effectiveness of skill training program by comparing pre test and post test level of knowledge.
- To associate the knowledge on prevention of needle stick injury with skill training programme on needle stick injury.

MATERIALS AND METHODS

A Quasi experimental approach with one group pre-test post-test design was used to assess the knowledge and skill on prevention of needle stick injury, which include 143 1st and 2nd year B.Sc. Nursing students by probability simple random technique. Students who are present at the time of data collection and willing to participate in the study were included. The intervention introduce was a planned teaching programme on needle stick injuries and its prevention and skill training programme on safe recapping techniques and disposal methods of needles. The setting of the study was College of Nursing, Sri Venkateshwara Institute of Medical Sciences, Tirupati. The structured questionnaire consists of two sections, section-I deals with the demographic data of samples, section II- deals with assessment of knowledge on needle stick injuries and prevention and an observational checklist was used to assess the skill level on safe recapping techniques and disposal methods of needles in post test. The research investigator obtained formal permission from the authorities of the institution. Participants were given adequate information about the data collection procedure, informed and written consent was obtained from the participants. After obtaining written consent the tool was administered to the students for pre-test. After answering the questionnaire, a structured teaching programme on causes, prevention, management of needle stick injury and disposal of needles and a skill training programme on safe recapping techniques, and disposal methods of needles was given. Time schedule was planned for collecting the data. The average time taken for each data collection was 15-20 minutes. After the skill training programme doubts were clarified and an information booklet was given to all the students which contains the information regarding the needle stick injury causes, prevention, management and disposal of needles in order to reinforce what had been taught. The data obtained was analyzed in terms of the objectives of the study using descriptive and inferential statistics.

RESULTS

The study findings revealed that majority 46.2% were in the age group of 19 years, 89.5% were females, 56.6% were studying 2nd year B.Sc. Nursing, 86% had knowledge on needle stick injury and 82.1% acquired knowledge through medical and nursing personnel, 95.1% were immunized against Hepatitis-B vaccine and 84.6% had taken two doses of Hepatitis-B vaccine. In comparing of pre-test and post-test knowledge on needle stick injury 62(43.4%) had inadequate knowledge, 70(49%) showed moderate knowledge and 11(7.7%) had adequate knowledge in pre-test and 68(47.6%) had moderate knowledge and 75(52.4%) had adequate knowledge in post test. In assessing the skill level 58(41%) had moderate skill and 85(60%) had high skill in performing the recapping techniques and disposal methods of needles and also revealed that in pre test the mean score is 23.9 $\pm$6.16 and in the post test the mean score is 36.41$\pm$4.31 which is statistically significant at $p<0.01$ level. This indicates that there was significant difference between pre and post test knowledge levels as assessed by the paired t-test value of 27.179.hence the hypothesis which states that there is no significant difference between pre and post test was rejected. The association between the post-test level of knowledge with skill training programme was assessed by the chi square test 58.458 which was statistically significant at $p<0.01$ level. Hence the hypothesis which states that there is no significant association between the level of knowledge and skill level was rejected.

Table 1. Frequency and percentage distribution of demographic variables among B.Sc. Nursing students

N=143

S.NO	Demographic variables	Frequency (f)	Percentage (%)
	Age in years		
	17	17	11.9
	18	48	33.6
1	19	66	46.2
	20	12	8.4
	Gender		
2	Male	15	10.5
	Female	128	89.5
	Year of studying course		
3	B.Sc. 1st year	69	43.4
	B.Sc. 2nd year	74	56.6
	Previous knowledge on needle stick injury		
4	Yes	123	86
	No	20	14
	If, yes source of information		
5	News paper	1	0.8
	Internet	21	17.1
	Medical and nursing personnel	101	82.1
	Immunized against Hepatitis B vaccine		
6	Yes	136	95.1
	No	7	4.9
	If, yes specify the no. of doses taken		
7	1	9	6.6
	2	115	84.6
	3	10	7.4
	4	2	1.5

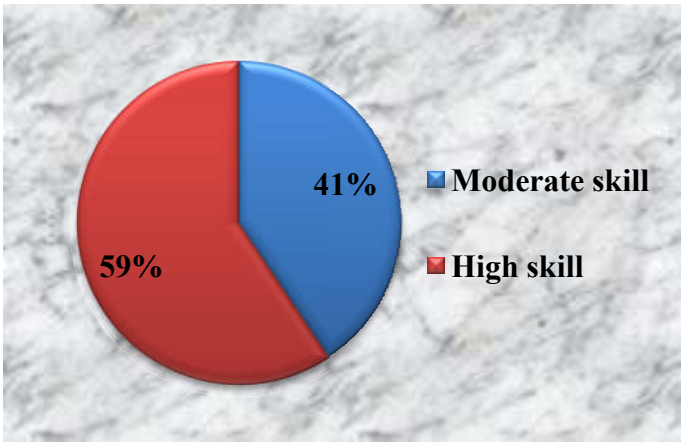

Fig. 1. Percentage of level of skill among B.Ss. nursing students after post-test

Table 2. Comparison of pre-test and post-test level of knowledge among B.Sc. Nursing students on prevention of needle stick injury

N=143

S.No	Pre-test						Post-test			
	Inadequate knowledge		Moderate knowledge		Adequate knowledge		Moderate knowledge		Adequate knowledge	
	F	%	F	%	F	%	F	%	F	%
1.	62	43.4%	70	49%	11	7.7%	68	47.6%	75	52.4%

Table 4. Overall mean and standard deviation on prevention of needle stick injury among B.Sc. Nursing students

N=143

S.NO.	Knowledge levels on prevention of needle stick injury				't' Value	'p' Value
	Pretest		Posttest			
	Mean	Standard deviation	Mean	Standard deviation		
1	23.98	6.16	36.41	4.34	27.179**	0.000

Table 5. Association of demographic variables level of knowledge with skill level among B.Sc. Nursing students on prevention of needle stick injury

N=143

S.No.	Post test levels of knowledge on needle stick injury		Level of skill		Chi square value	p value
	Moderate	Adequate	Moderate	High skill		
1.	47.6	52.4	41	60	58.458**	0.000

DISCUSSION

Among all health care personnel providing patients care in the health care facilities, nurses are the most susceptible group to suffer from needle stick injury. Student nurses are at high risk of blood-borne pathogens transmitted via needle stick injury. Understanding various aspects of needle stick injury is very essential if they are to avoid the risks associated with it. According to the present study the first objective was to assess the student nurses level of knowledge about prevention of needle stick injury. Overall, the results show that 62(43.4%) students had inadequate knowledge, 70(49%) had moderate knowledge, 11(7.7%) had adequate knowledge in pre assessment and in post-test shows that 68(47.6%) had moderate knowledge and 75(52.4%) had adequate knowledge. Similar findings were reported by Ujwala *et al.* conducted a study which show that 18.33% of the students had good knowledge, 63.33% showed average knowledge and 13.3% students showed poor knowledge in pre assessment. The second objective of the study was to determine the effectiveness of skill training programme by comparing pre and post-test levels of knowledge. In the current study the mean pre-test knowledge score regarding prevention and management of needle stick injury was 23.9 and the mean post-test score was 36.41 which was higher than the mean pre-test score the mean difference between pre-test and post-test is 12.5. There is a significant difference between the pre-test and post-test knowledge scores of nursing students regarding prevention of needle stick injury at $p<0.01$. Similar findings were revealed by Seham *et al.* showed the pre-test mean score of 18.5% and post-test mean score was 26% which is statistically significant at $p<0.01$. The third objective of the study was to associate the knowledge on prevention of needle stick injury with skill training programme among nursing students. The study findings revealed that 58(41%) have moderate skill, 85(60%) have high skill in performing safe recapping techniques and disposal methods of needles after the post test which show there is significant association between the knowledge on prevention of needle stick injury and skill training programme at $p<0.05$. Victor hugo Garcia conducted a preventive training among medical interns and its association with needle stick and sharp injuries revealed that untrained students were at higher risk to report needle stick injuries than those who received training about needle stick njury.

Conclusion

The findings of the study recommended that majority of students had gained adequate knowledge on prevention of needle stick injury and developed skills in practicing safe recapping techniques and disposal methods after the skill training program in post test. The skill training programme was an effective mode to create awareness and helps to improve the knowledge and practice of safety measures to prevent needle stick injury among nursing students. It is very effective to the students and they can use this knowledge in their work area.

Acknowledgement: The author is grateful to principal I/C and my guide Dr. M. Nagarathnam for granting permission to conduct the study in college of nursing, SVIMS, and I thank nursing students who participated in this study, despite of their busy schedule.

Conflicts of interest: There are no conflicts of interest.

REFERENCES

Potter and Perry "Fundamentals of nursing" 6th edition, Mosby publications, page no: 797-799.

American Nurses Association's needle stick injury prevention guide @ 2002.

https://www.who.int>activities.

Barbara kozier and Andreyberman "fundamentals of nursing" 1st edition, person education, 2007.

Rishi buli, Aprveen Sharma, Needle stick injuries in health care providers, The Nursing Journal of India, Nov-2008, page no. 251-254.

Sarrazin U., Brodt H.R., Sarrazin C., Zeuzem S. – Prohylaxis against HBV, HCV, and HIV, after occupational exposure. Dtsch Arztebl., 102(33):2234-2239, 2005.

Ayranci. U, Kosgoreglu N. 2004. Needle stick and sharp injuries among nurses, *J Hosp Infect.,* 58(3):216-23.

Smith DR, Legget PA. 2005. Needle stick and sharp injuries among nursing students, *Journal of Advanced Nursing,* 51(5):449-55.

Ferguson T J. 2012. Needlestick injuries among Health care professionals, *The Western Journal of medicine,* 4:156.

****