



# **A PRE EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF NURSES LEAD INTERVENTION REGARDING PREVENTION OF NEEDLE STICK INJURY AMONG B.SC NURSING 1<sup>ST</sup> YEAR STUDENT OF SELECTED COLLEGE OF DEHRADUN”**

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**ABSTRACT** - Clinical exposure is considered as the one and most important path that the nursing students get expertise on caring patient. Stressing on the nature of the work load of the hospital, nursing students need to step forward to learn and acquire skills which puts them in number of occupational hazard, out of which needle stick injury is in the topmost rank. Statistics states that nurses and the nursing students are the higher risk group for sharp injuries in the health care sector. The objective formulated for the study was :- 1. To assess the knowledge regarding needle stick injury among B.Sc nursing 1<sup>st</sup> year students 2. To determine the effectiveness of the nurses lead intervention and 3. To determine the association of pre test knowledge score with their selected demographic variables. The methodology adopted for the study was quantitative approach with pre experimental design followed by one group pre test post test design with 60 samples that met the inclusion criteria was selected through purposive sampling technique. The study was conducted in the selected nursing college of Dehradun. The self structured tool on needle stick injury was formulated and administered to the sample after determining its validity and reliability. The analysis of the data was done through

descriptive and inferential statistics. The findings of the study reveals that in the pre test knowledge score 23(46%) were having average knowledge, 27(54%) were having poor knowledge and 0(0%) sample possess good knowledge regarding needle stick injury , the post test knowledge score reveals that 16(32%) were having average knowledge and 34(68%) were having good knowledge , it shows that the nurses lead intervention is beneficial in enhancing the knowledge of the samples. There is no significant association was found with the demographic variables with the pre test knowledge sore in the study. The study concluded that the first year nursing students should have the knowledge regarding needle stick injury before they are posted in the clinical area. The topic should be covered in the initial classes so that the chance of getting infection from the blood borne pathogens should be reduced to nil. Workshops, hands on skill training should be organised for the students at regular interval so that they develop skills in performing procedures.

Key words:- Pre- Experimental study, assess, knowledge, nurses lead intervention, needle stick injury, B.SC nursing 1 year students.

## INTRODUCTION:-

**Wikipedia** A needle stick injury is defined as the injury caused due to the penetration of the hypodermic needle or sharp object into the skin, that comes in contact with blood, tissue or other body fluids before the exposure. The effect of these injury is that it leads to the transmission of the blood borne infectious disease such as Hepatitis B, Hepatitis C & Human Immunodeficiency Virus (HIV). Needle stick injury accounts more than 80% of all the percutaneous exposure incidents in the United States.

**World Health Organization (2015)** has defined needle stick injury (NSI) as a penetrating stab wound from a needle or other sharp object that may result in exposure to blood or other body fluids.

. **Hilla Bahat, et al. (2021)** has conducted a cross sectional study on the prevalence and under reporting of needle stick injury among hospital workers. A total 2205 sample of housekeeping workers (HWs) were selected, out of which only 844 samples were participated. The total of 443 (53%) samples get the needle stick injury at the bedside which is caused by the needle. The higher prevalence (75%) of needle stick injuries were caused among physician who are working in the emergency, 66% of NSI were caused among the workers in surgical unit and 28% of NSI were observed in the workers who did not deal with the needles directly. The study concluded that the NSI are underreported among all the health care workers and preventive measures should improved by reducing the bedside procedures.

. **Rahul Shil, U.P Shivaleela (2021)** has conducted “A quantitative study on nursing student regarding NSIs : effectiveness of structure teaching plan conducted at Dhanantri college of nursing”. A total of 30 nursing student were selected through random sampling. A quasi experimental one group pre test post test design was adopted. The knowledge questionnaire tool was use to collect data. The study result showed that on pre test 6 students (30%) had in adequate, knowledge 24 student (80%) had moderate knowledge. And none of the student had good knowledge. The structure teaching program was administered and found highly significant with 24 student have good knowledge, and 6 student possess moderate knowledge. The study concluded that structured teaching program highly effective in improving student knowledge that is helpful in reducing mortality and morbidity rate of blood borne disease.

**Dr. Rajesh J. et al, (2019)** has conducted a cross sectional study on study on “Needle stick injury, its associated factors and prophylactic measures among nursing staff and student of a tertiary care hospital Chennai”. A total of 354 samples were selected which include 218 nursing staff and 136 nursing students. A pre designed semi structured questionnaire was used to collect the data through interview schedule. The result shows that 58.1% nursing students experienced NSI, 38.1% injuries occurred in the in – patient wards. Majority of the samples 59% had never reported their NSI. The study concluded that recapping of needles, non usage of gloves, lack of assistance & inattentiveness during procedures especially among nursing students are the major associated risk factors for the occurrence of needle stick injury.

**Sudha.B, Dr.Selvanayaki.V (2019)** reported in their study that every year, about 16 billions of injectables are administered during the care of the patient in the health care setting due to which 3 millions health care workers get injured due to the needle stick & sharp injuries. Globally 3 millions health care workers experience percutaneous exposure to blood borne virus each year in which hepatitis B accounts for 20,00,000, hepatitis C accounts for 9,00,000 & HIV accounts for 3,00,000. (<https://ijrar.com> , A study to assess the knowledge of first year nursing students on needle stick injuries at selected college of Puducherry ).

## **PROBLEM STATEMENT:-**

“ A study to assess the effectiveness of nurses lead interventions regarding knowledge on prevention of needle stick injury among B.sc nursing 1<sup>st</sup> year students of selected college of Dehradun, Uttarakhand”.

**OBJECTIVES OF THE STUDY:-**

1. To assess the knowledge regarding needle stick injury among B.sc nursing 1<sup>st</sup> year students.
2. To administer nurses lead interventions to the B.sc 1<sup>st</sup> year students.
3. To determine the effectiveness of the nurses lead interventions.
4. To determine the associations of knowledge of score with the selected demographic variables.

**RESEARCH HYPOTHESIS:-**

H1:- There will be significant increase in the knowledge score of B.Sc nursing 1 year students in post test.

**RESEARCH METHODOLOGY:-**

The reaserch group comprises of total 50 samples of B.Sc nursing students from selected nursing colleges of Dehradun Uttarakhand. The study was conducted at Doon Institute of Medical Sciences , Sahaspur, Shankarpur Dehradun. The samples were selected through non probability purposive sampling technique after taking permission from the authority of the college. The data was collected through self structured knowledge questionnaire on needle stick injury . The research approach opted for the study was quantitative approach with one group pre test post test design.

**Table: 1 frequency & percentage distribution of samples characteristics .**

**N=50**

S.NO.	DEMOGRAPHIC VARIABLES	FREQUENCY	PERCENTAGE
1.	<b>Age</b>		
	<ul style="list-style-type: none"> <li>• 17-21 years</li> <li>• 22-26 years</li> </ul>	34 16	68% 32%
2.	<b>Gender</b>		
	<ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> </ul>	19 31	38% 62%
3.	<b>Educational Qualification</b>		
	<ul style="list-style-type: none"> <li>• Intermediate</li> <li>• Graduate</li> </ul>	48 2	96% 4%
4.	<b>Previous knowledge regarding needle stick injury</b>		
	<ul style="list-style-type: none"> <li>• Yes</li> </ul>	30 20	60% 40%

	<ul style="list-style-type: none"> <li>No</li> </ul>		
<b>5.</b>	<b>Source of information</b>		
	<ul style="list-style-type: none"> <li>Media</li> </ul>	15	50%
	<ul style="list-style-type: none"> <li>Class room</li> </ul>	4	14%
	<ul style="list-style-type: none"> <li>Seminar</li> </ul>	5	16%
	<ul style="list-style-type: none"> <li>Others</li> </ul>	6	20%

The data presented in table reveals the frequency and percentage distribution of demographic variables of student.

According to age the table reveals that 34 (68%) student belongs to age group of 17-21 years. 16 (32%) belongs to the age group of 21 to 25years. The gender depicts that 19 (38%) of the student were male and 31 (62%) of the student were female. It shows that the majority of the student were female. According to the educational qualifications the table shows that the 48 (96%) student possess intermediate, while 2 (4%) of the student completed their graduation. It that majority of the samples in the study completed their intermediate. The data of the previous knowledge regarding needle stick injury depicts that 30 (60%) student that they are having prior knowledge related to the topic of the study but 20 (40%) of the student does not possess any prior knowledge regarding needle stick injury. It shows that majority of the student were having knowledge regarding needle stick injury. The data from source of information shows that 10(20%) gain knowledge through mass media, 3(66%) that they gained the knowledge from classroom, 5(10%) student received the knowledge other. And 2(4%) gained the knowledge from seminar. It shows that majority of the student received knowledge from their classroom.

**Table :- 2 frequency & percentage distribution of pre test & post test knowledge score**

**N=50**

S.N O.	KNOWLEDGE SCORE	POOR (0-8)		AVERAGE (9-16)		GOOD (17-24)	
		FREQUENCY	%	FREQUENCY	%	FREQUENCY	%
<b>1.</b>	<b>PRE TEST</b>	23	46	27	54	0	0
<b>2.</b>	<b>POST TEST</b>	0	0	16	32	34	68

The data presented in the table depicts that In pre test majority of the students 27 (54%) was having average knowledge, 23(46%) of students possess poor knowledge and none of the students had good knowledge, but in the post test majority of the students 34 (68%) had good knowledge, 16(32%) students had average knowledge and none of the students possess poor knowledge. This shows that the score attained by the students I post test was increased and suggest that nurses lead intervention proves beneficial in enhance of knowledge of the students regarding needle stick injury. Hence research hypothesis H1 was accepted.

**Table: - 3 frequency distribution of mean & standard deviation of pre test and post test knowledge score.**

N=50

S.NO .	KNOWLEDGE SCORE	MINIMUM SCORE	MAXIMUM SCORE	MEAN	STANDARD DEVIATION
1.	PRE TEST	8	21	14.62	3.03
2.	POST TEST	11	24	19.24	3.83

The table depicts that in pretest the minimum knowledge score was 8 and the maximum knowledge score possess by the students was 21 with the calculated mean was 14.62 and standard deviation was 3.03. on the other hand in the post test the minimum score gained by the students was 11 and the maximum score was 24 with the mean was 19.24 and the standard deviation was 3.83.

**Table 4:- association of the pre test knowledge score with demographic variables**

N=50

S.N O.	DEMOGRAPHIC VARIABLE	KNOWLEDGE SCORE		CHI SQUARE	dF	INFERENCE
		BELOW MEDIAN	ABOVE MEDIAN			
1.	Age <ul style="list-style-type: none"> <li>• 17-21 years</li> <li>• 22-26 years</li> </ul>	17 7	17 9	0.0089	01	Not Significant



2.	<b>Gender</b> <ul style="list-style-type: none"> <li>• Male</li> <li>• Female</li> </ul>	9 15	10 16	0.0532	01	Not Significant
3.	<b>Educational Qualification</b> <ul style="list-style-type: none"> <li>• Intermediate</li> <li>• Graduate</li> </ul>	25 1	23 1	0.3341	01	Not Significant
4.	<b>Previous knowledge regarding needle stick injury</b> <ul style="list-style-type: none"> <li>• Yes</li> <li>• No</li> </ul>	14 9	16 11	0.0019	01	Not Significant
5.	<b>Source of information</b> <ul style="list-style-type: none"> <li>• Media</li> <li>• Class room</li> <li>• Seminar</li> <li>• Others</li> </ul>	9 2 3 4	6 2 2 2	0.6147	03	Not Significant

The table shows that the demographic variables shows no association with the pre test knowledge score which was revealed with chi square test

## CONCLUSION:-

The result of the study point to the fact that there were high percentage of student expose to needle stick and this is a serious indicator. As well as the consequences this confirms the lack of knowledge and experience among students towards recapping the needle, reporting and doing a blood test after the injury. The hospital administration has a duty to provide a safe environment, to create awareness and educate student about the risk of viral transmission and post exposure prophylaxis and to enforce reporting of all incidents. Recapping of needles should be discouraged and sharp containers should be provided in each ward. Practice safe use of sharps and adhere to recommended guidelines while using sharps.

## RECOMMENDATIONS:-

- Similar study can be conducted by using true experimental design.

- This study can be conducted among large population regarding the prevention of needle stick injury among fresher nursing student in all colleges so that generalization of the findings can be done.
- Further study can be conducted by using variables such as attitude.
- A comparative research can be conducted among fresher nursing students and senior nursing students regarding the effectiveness of nurses lead interventions regarding prevention of needle stick injury.

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