



“A QUASI EXPERIMENTAL STUDY TO ASSESS THE EFFECTIVENESS OF LAPTOP ASSISTED TEACHING ON KNOWLEDGE REGARDING NEEDLE STICK INJURY AMONG STAFF NURSES WORKING IN PAEDIATRIC UNITS OF SELECTED HOSPITALS OF DISTRICT PATIALA, PUNJAB.”

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Abstract: Needle Stick Injury is a common occupational hazard among Health Care Workers. Most Needle Stick Injuries arise out of unsafe practices and are thus preventable. The study aim to assess the effectiveness of laptop assisted teaching on knowledge regarding needle stick injury among staff nurses working in paediatric units.

Methods of data collection procedure: The research approach adopted for the study was quantitative, with Quasi-experimental design. 60 staff nurses were selected (30 experimental and 30 control group) from selected hospitals by Purposive sampling technique. self-structured knowledge questionnaire regarding knowledge on needle stick injury. Was used to data collection. The data obtained was analyzed and interpreted in terms of objectives of the study.

Results: this study results reveals that, the post-test mean knowledge score (19.57) was significantly higher than the pre-test mean knowledge score (10.07). As the calculated value (20.148) was greater than table value (2.05) of unpaired t test at significant ($p < 0.001$), suggesting that laptop assisted teaching was effective in increasing the knowledge scores among study subjects. The conclusion of the study was staff nurses had significant gain in knowledge after the administration of laptop assisted teaching regarding Needle Stick Injury.

INTRODUCTION

“Health is a crown that the healthy waer, but only the sick can see it.”

“-Imam Shaf’ee”

Hospital staff are at a much higher risk of NSIs than the general public because needles are an everyday reality of their work. Members of the general public may be familiar with the idea of needle stick injury because it has been heavily debated and sensationalized by the media.¹ it is estimated that out of the total of 35 million Health Care Workers worldwide, 3 million experience Needle Stick Injuries every year, of these, nurses are at the greatest risk, with up to 50% of all Needle Stick Injuries being sustained by this group.²

Every year, hundreds of thousands of health care workers are exposed to dangerous and deadly blood borne pathogens through contaminated needle stick and sharps injuries. The risk of infection following needle stick exposure is 1.9% to greater than 40% for HBV infections, 2.7% to 10% for HCV infections, and 0.2% to 0.44% for HIV infections. NSIs are frequent and important cause of morbidity and mortality in health care workers who come into contact with patient blood and body fluids.³

There is need for health workers to adhere to universal safety precautions in order to avoid injury from needles and other sharp instruments that have been exposed to body fluids or blood products. It is estimated that about 2 million Needle Stick Injuries occur annually among staff nurses resulting in Hepatitis B Virus, Hepatitis C Virus, and Human Immunodeficiency Virus infections.⁴

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. Increasing recognition of the unique occupational hazard posed by needlestick injuries, as well as the development of efficacious interventions to minimize the largely preventable occupational risk, encouraged legislative regulation to causing a decline in needlestick injuries among healthcare workers.⁵

Keywords:

Effectiveness, Knowledge, Needle Stick Injury, laptop assisted teaching, Staff nurses working in Paediatric units.

Population and Sample

Target population was the staff nurses who were working in Paediatric units of selected hospitals of District Patiala, Punjab. The sample size of the study comprised of 60 staff nurses (30 Experimental group, 30 Control group) working in Paediatric units of selected hospitals of District Patiala, Punjab.

MATERIAL AND METHODS

The research approach adopted for the study was quantitative, with Quasi-experimental design. 60 staff nurses were selected (30 experimental and 30 control group) from selected hospitals by Purposive sampling technique. The tool developed and used for the data collection was self-structured knowledge questionnaire that comprised of 25 items related to knowledge regarding Needle Stick Injury. Validity was established by a qualified person. Formal permission from institutional ethical committee of college. The obtained data was organized in a statistical way to summarize result was visualized scientifically.

RESULTS:

Socio demographic variable of staff nursing

Note: Number of staff nursing (N=60)

SECTION-1 SOCIO DEMOGRAPHIC PROFORMA		Experimental f (%)	Control f (%)	Experimental (N=30)	Control (N=30)
AGE IN YEARS	21 – 30	86.7%	86.7%	26	26
	31 – 40	13.3%	10.0%	4	3
	41 – 50	0.0%	0.0%	0	0
	Above 50	0.0%	3.3%	0	1
GENDER	Male	6.7%	3.3%	2	1
	Female	93.3%	96.7%	28	29
PROFESSIONAL QUALIFICATION	GNM	63.3%	70.0%	19	21
	Post Basic B.Sc. Nursing	10.0%	13.3%	3	4
	B.Sc. Nursing	26.7%	16.7%	8	5
	M. Sc. Nursing	0.0%	0.0%	0	0
PLACE OF POSTING	Pediatric Surgical ward	0.0%	0.0%	0	0
	Pediatric Medicine ward	46.7%	40.0%	14	12
	Nursery	30.0%	36.7%	9	11
	Neonatal ICU	23.3%	23.3%	7	7
WORKING EXPERIENCE	0 – 5	80.0%	83.3%	24	25
	6 – 10	13.3%	13.3%	4	4
	11 – 15	6.7%	3.3%	2	1
	Above 15	0.0%	0.0%	0	0
SOURCE OF INFORMATION	Classroom instructions	33.3%	40.0%	10	12
	Colleagues	56.7%	53.3%	17	16
	Others	10.0%	6.7%	3	2
EXPOSURE TO NEEDLE STICK INJURY	Yes	70.0%	66.7%	21	20
	No	30.0%	33.3%	9	10

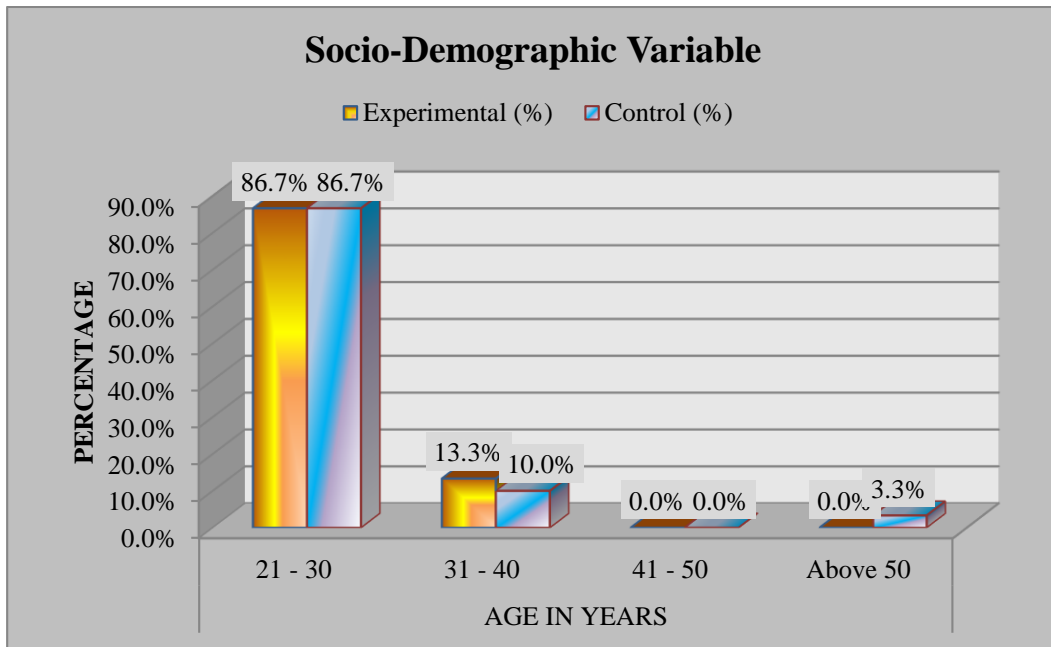


Figure No. 1: Percentage distribution of age

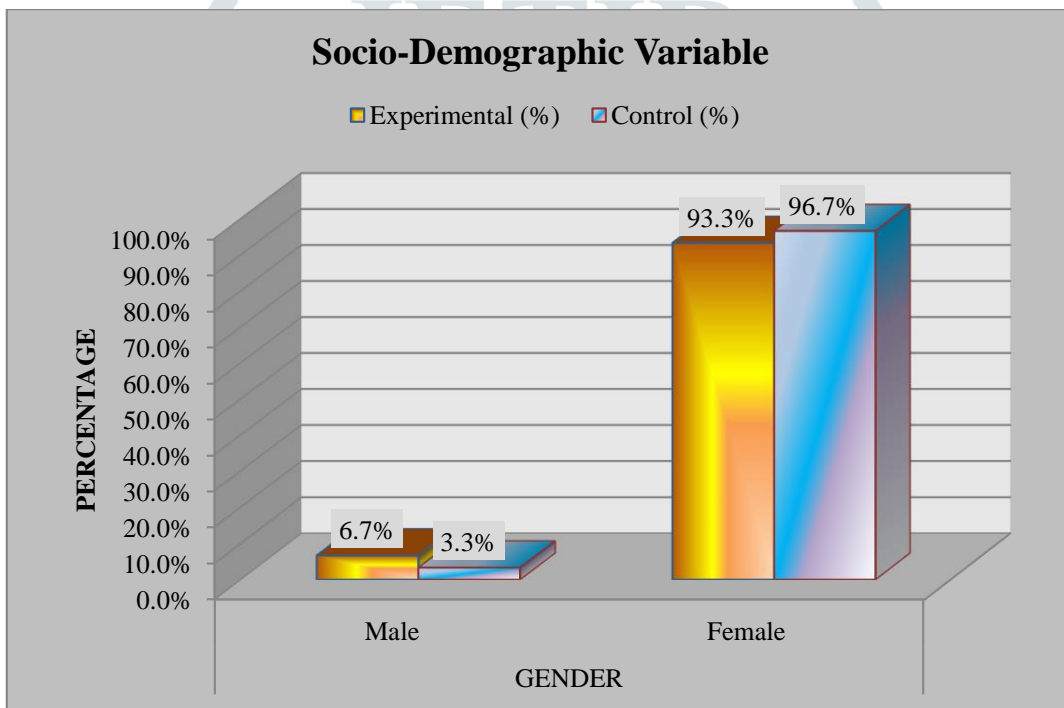


Figure No. 2: Percentage distribution of gender

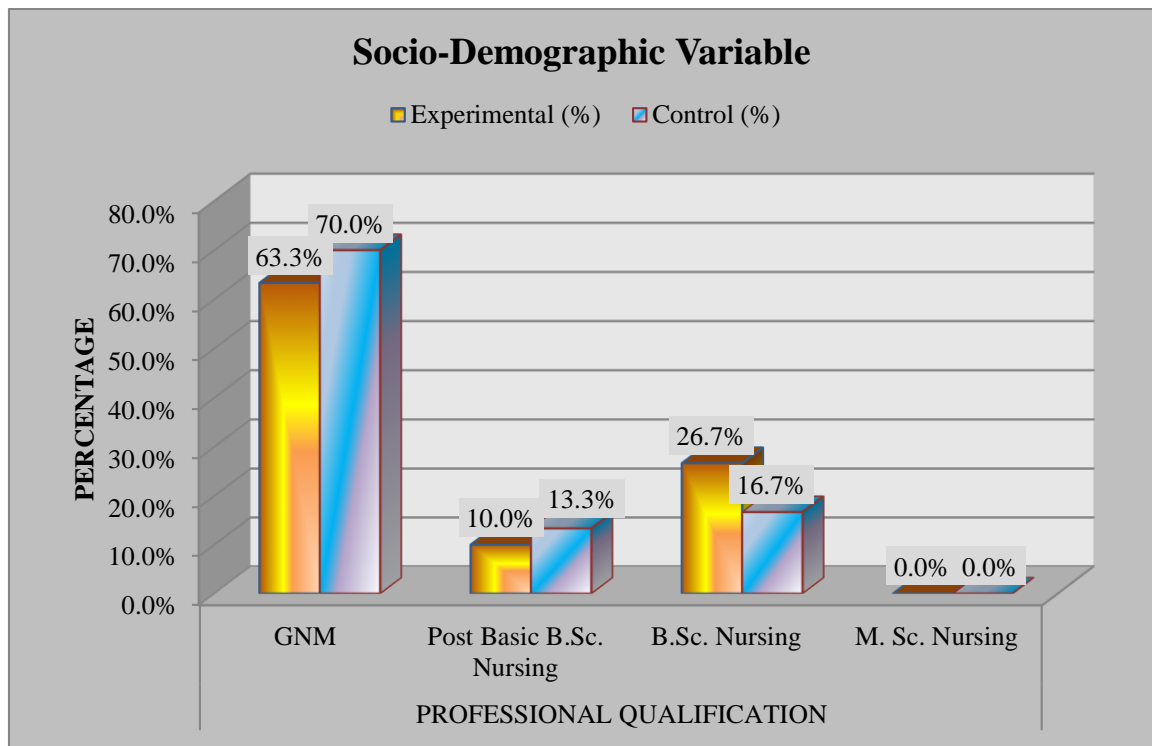


Figure No. 3: Percentage distribution of professional qualification

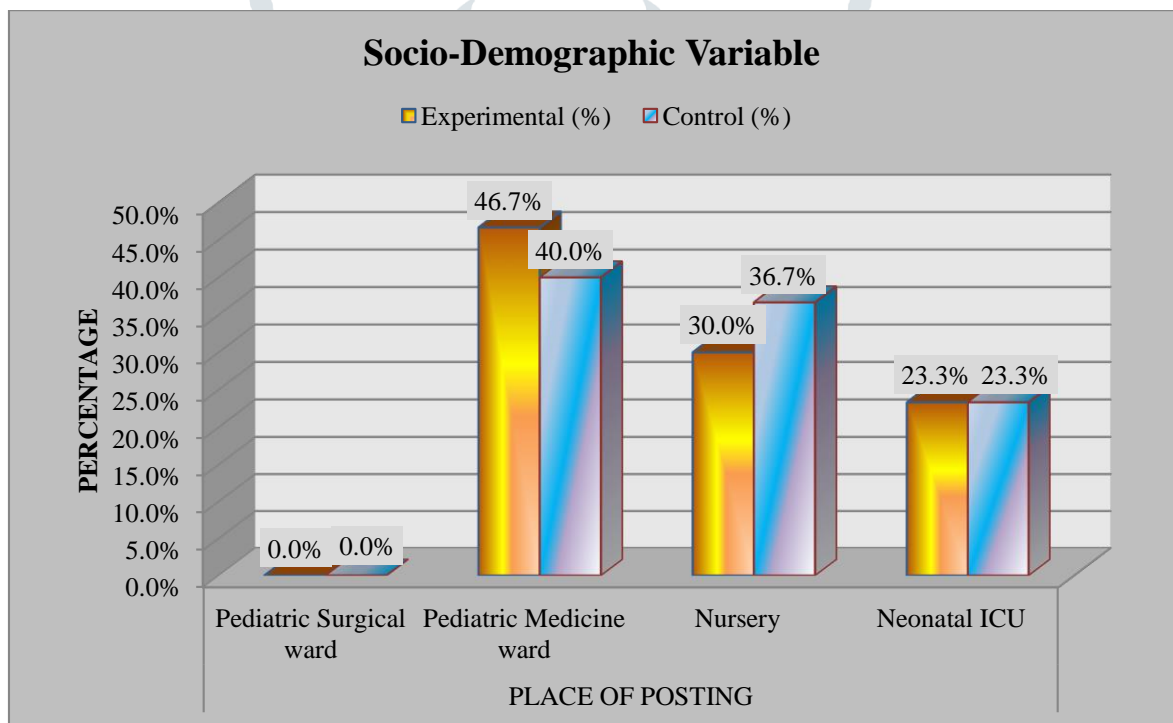


Figure No. 4: Percentage distribution of place of posting

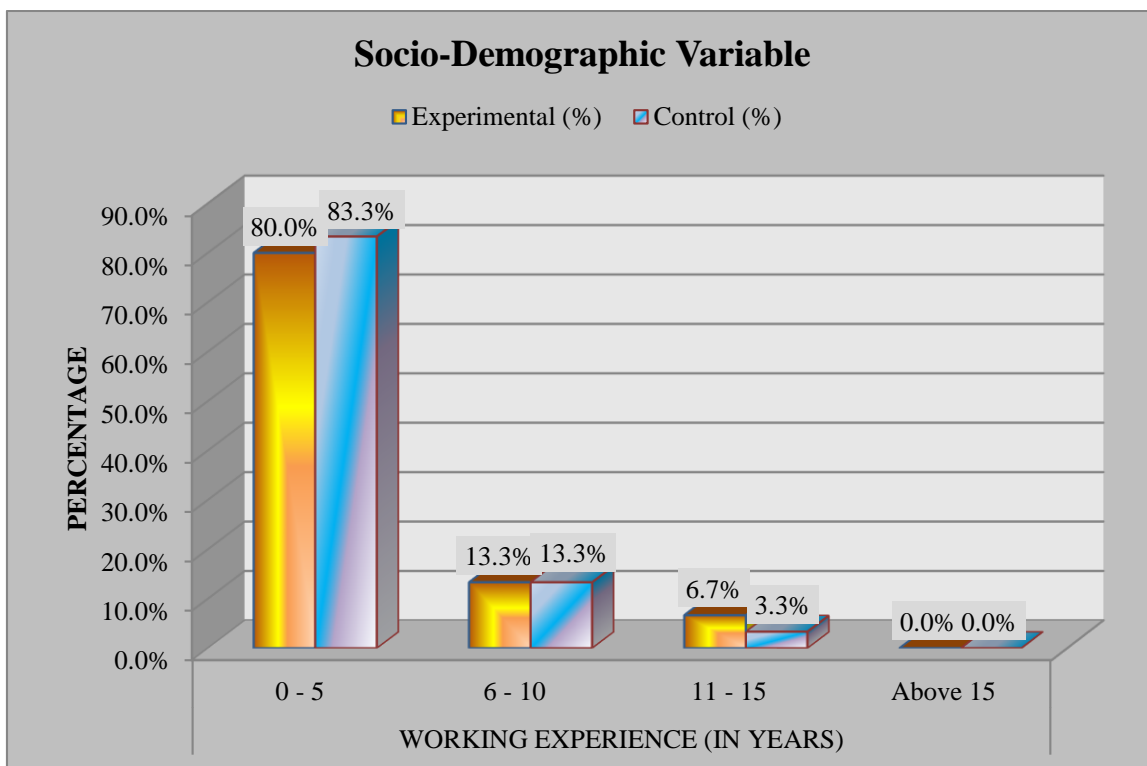


Figure No. 5: Percentage distribution of working experience

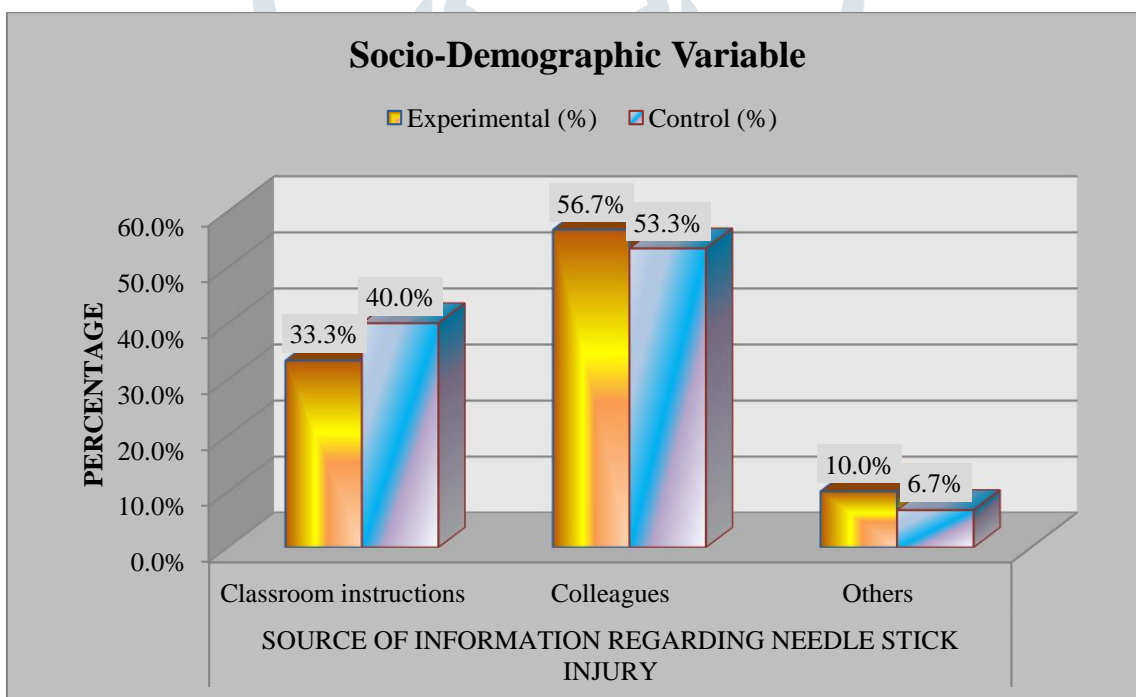


Figure No. 6: Percentage distribution the source of information

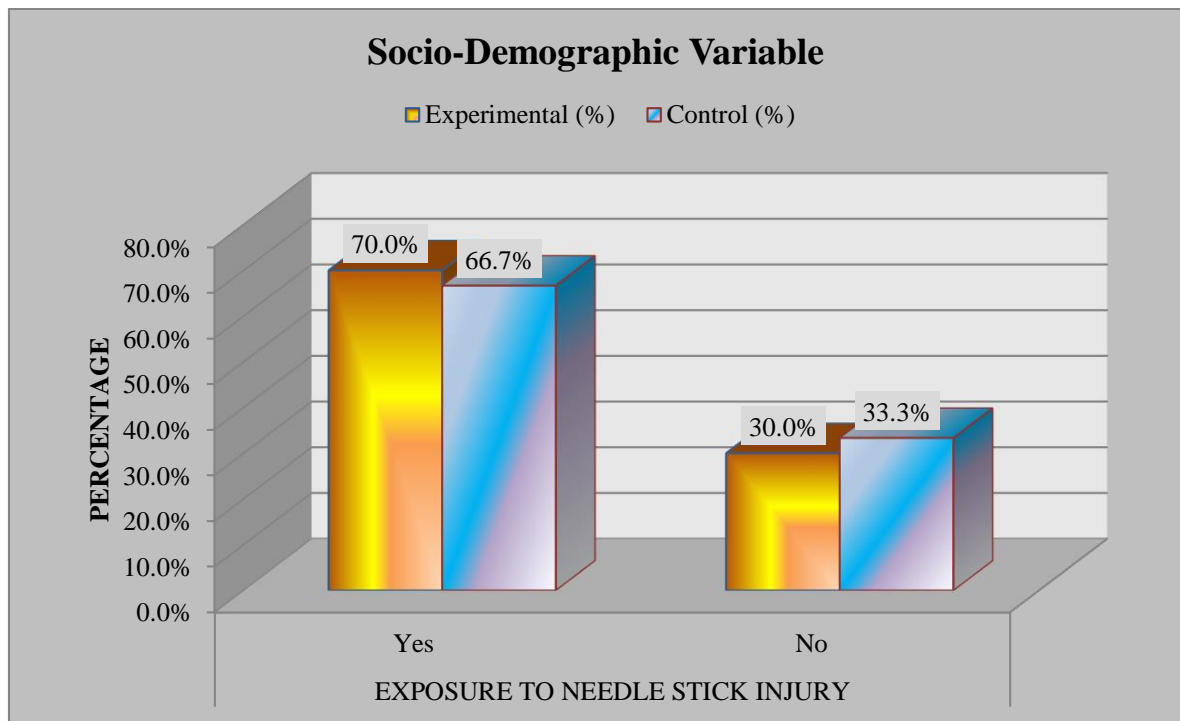


Figure No. 7: Percentage distribution of exposure to needle stick injury

Table No. 2: Level of pre-test knowledge score and post-test knowledge score of experimental and control group among staff nurses regarding Needle Stick Injury.

N= 60

CRITERIA MEASURE OF KNOWLEDGE SCORE				
Score Level	Pre-Experimental	Pre-Control	Post-Experimental	Post-Control
ADEQUATE (17-25)	0(0%)	0(0%)	29(96.7%)	0(0%)
MODERATE (9-16)	19(63.3%)	22(73.3%)	1(3.3%)	25(83.3%)
INADEQUATE (0-8)	11(36.7%)	8(26.7%)	0(0%)	5(16.7%)
Maximum=25 Minimum =0				

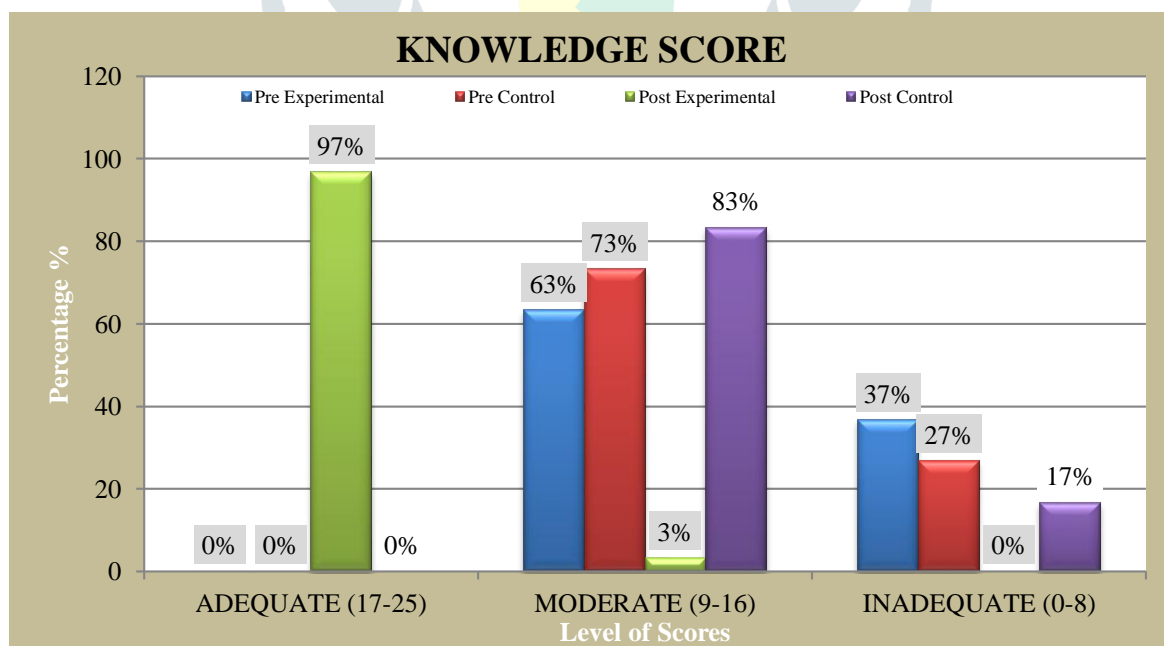


Figure No. 8: Bar graph showing the knowledge score of experimental group and control group

Table no 2 & fig No 8: Depicts that in pre- experimental group, none of sample had adequate pre-test knowledge score but in post-test 29 (96.7%) were gained knowledge. In the control group, (0%) none of sample had adequate knowledge in pre-test and in post-test.

Hence, it is concluded that the most of the sample in experimental group had adequate knowledge in post-test score after laptop assisted teaching on needle stick injury.

Table No. 3: Comparison of Mean± S.D. of pre-test and post-test knowledge scores of Experimental and control groups

N=60

		KNOWLEDGE Score				Paired t Test		
		Pre-test		Post-test				
Group	N	Mean	SD	Mean	SD	df	t	Result
Experimental Group	30	10.07	2.599	19.57	1.888	29	16.944	P value=<0.001 Significant
Control Group	30	9.633	1.956	9.73	1.893	29	1.795	P value=0.083 non-Significant
Unpaired t Test		df	58		df	58		
		t	0.730		t	20.148		
		Result	P value=0.469 non-Significant		Result	P value=<0.001 Significant		
		Maximum = 25 Minimum = 0						

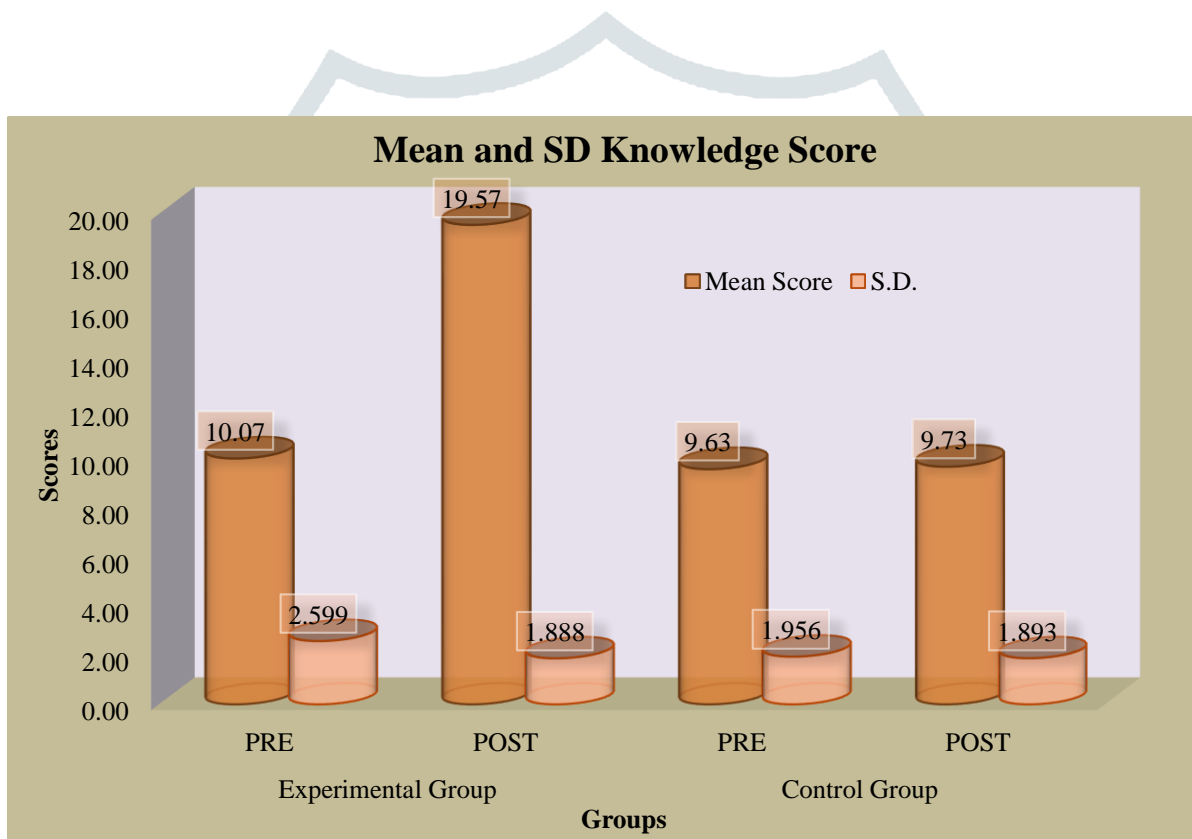


Figure No. 9: Pre-test and post- test Mean and standard deviation of knowledge score of experimental and control group

Table no 3 & fig no 9 Indicates the comparison between pre-test mean knowledge score (10.07) with SD 1.888 and post-test knowledge score (19.57) with SD 1.893.

Table No. 4: Association of pre-test knowledge score of experimental groups with selected socio- demographic variables.

Demographic Variables		Association of KNOWLEDGE Score with Demographic variables (Pre KNOWLEDGE) Experimental Group							
Variables	Opts.	ADEQUATE	MODERATE	INADEQUATE	Chi Test	P Value	df	Table Value	Result

AGE IN YEARS	21 - 30		17	9	0.353	0.552	1	3.841	Not Significant
	31 - 40		2	2					
	41 - 50		0	0					
	Above 50		0	0					
GENDER	Male		2	0	1.241	0.265	1	3.841	Not Significant
	Female		17	11					
PROFESSIONAL QUALIFICATION	GNM		14	5	3.190	0.203	2	5.991	Not Significant
	Post Basic B.Sc. Nursing		2	1					
	B.Sc. Nursing		3	5					
	M. Sc. Nursing		0	0					
PLACE OF POSTING	Pediatric Surgical ward		0	0	2.078	0.354	2	5.991	Not Significant
	Pediatric Medicine ward		9	5					
	Nursery		7	2					
	Neonatal ICU		3	4					
WORKING EXPERIENCE	0 - 5		14	10	1.651	0.438	2	5.991	Not Significant
	6 - 10		3	1					
	11 - 15		2	0					
	Above 15		0	0					
SOURCE OF INFORMATION	Classroom instructions		6	4	0.076	0.963	2	5.991	Not Significant
	Colleagues		11	6					
	Others		2	1					
EXPOSURE TO NEEDLE STICK INJURY	Yes		11	10	3.616	0.057	1	3.841	Not Significant
	No		8	1					

DISCUSSION

Out of 30 nurses in the experimental group, majority of nurses (63.3%) had moderate knowledge, (36.7%) had inadequate knowledge and none of samples had adequate knowledge in pre-test. Whereas in the control group, (73.3%) had moderate knowledge and (26.7%) had inadequate knowledge and none of samples had adequate knowledge. Hence, it is concluded that the most of the sample in experimental group had inadequate knowledge in pre-test score and in control group most of the sample had moderate knowledge in pre-test score regarding needle stick injury.

In the experimental group, majority of students 29(96.7%) had adequate knowledge, only 1(3.3%) had moderate knowledge and none of samples had inadequate knowledge post-test knowledge score. Whereas in the control group, 25(83.3%) had adequate knowledge and 5(16.7%) had inadequate knowledge and none of samples had adequate knowledge in post-test knowledge score.

Hence, it is concluded that the most of the sample in experimental group had adequate knowledge in post-test knowledge score after laptop assisted teaching which approves to be effective and in control group most of the sample had average post-test knowledge score.

The post-test mean knowledge score (19.57) and was significantly higher than the pre-test mean knowledge score (10.07). As the calculated value (20.148) was greater than table value (2.05) of unpaired t test at 0.05 level of significance. As there was significant ($p < 0.001$) suggesting that laptop assisted teaching was effective in increasing the knowledge scores among study subjects.

The computed chi square values of the pre-test knowledge scores of staff nurses with their selected demographic variables were found not to be associated statistically with Age, Gender, Professional qualification, Place of posting, Working experience, Source of information and exposure to needle stick injury.

The findings of the study showed that there was statistically significant ($p < 0.001$) difference between pre-test and post-test knowledge scores of staff nurses and there was no association between pre-test knowledge scores with their demographic variables.

CONCLUSION

It is concluded that laptop assisted teaching on Needle Stick Injury was very effective as a teaching strategy that helped the staff nurse working in selected hospitals of District Patiala, Punjab.

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