



ORIGINAL RESEARCH PAPER

A STUDY TO ASSESS THE EFFECTIVENESS OF A STRUCTURED TEACHING PROGRAMME ON KNOWLEDGE REGARDING THE PREVENTION OF NEEDLE STICKS INJURIES AMONG GENERAL NURSING AND MIDWIFERY STUDENTS AT A SELECTED PARAMEDICAL AND NURSING COLLEGE IN KULGAM, JAMMU AND KASHMIR, INDIA

Nursing

KEY WORDS: Needle stick injuries, Nursing students, Structured teaching programme, Knowledge assessment, Occupational health, Infection prevention, Clinical education, Safety protocols, Jammu and Kashmir, Paramedical education.

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ABSTRACT

Needle stick injuries (NSIs) are a significant occupational hazard in the healthcare sector, particularly among nursing professionals and students. These injuries occur when sharp instruments, such as needles or scalpels, inadvertently penetrate the skin, potentially exposing individuals to blood-borne pathogens like Hepatitis B, Hepatitis C, and Human Immunodeficiency Virus (HIV). Nursing students, due to their limited clinical experience and developing technical skills, are especially susceptible to needle stick injuries. A systematic review and meta-analysis reported, varying prevalence rates of Needle stick injuries among nursing students worldwide, highlighting the universal nature of this issue. Factors contributing to these injuries include inadequate knowledge of safe practices, lack of experience, and insufficient training in handling sharp instruments. The consequences of needle stick injuries extend beyond the immediate physical injury. Affected individuals may experience psychological distress due to the fear of potential infections, leading to decreased clinical performance and increased absenteeism. Furthermore, the financial burden associated with post-exposure prophylaxis and medical evaluations adds to the overall healthcare costs. Structured Teaching Programmes (STPs) have emerged as effective educational interventions to enhance knowledge and promote safe practices among healthcare workers. Studies have demonstrated that structured teaching programmes significantly improve understanding of needle stick injuries prevention and management among nursing students. For instance, a study assessing the effectiveness of an structured teaching programmes on needle stick injuries prevention among nursing students found a substantial increase in knowledge post-intervention. In the context of Jammu and Kashmir, there is a paucity of research focusing on needle stick injuries prevention among nursing students. Addressing this gap is crucial, given the unique healthcare challenges in the region. Implementing targeted educational interventions, such as structured teaching programmes, can play a pivotal role in equipping nursing students with the necessary knowledge and skills to prevent needle stick injuries, thereby safeguarding their health and enhancing the quality of patient care. This study aims to assess the effectiveness of a structured teaching programme on knowledge regarding the prevention of needle stick injuries among General Nursing And Midwifery students at a selected paramedical and nursing college in Kulgam, Jammu and Kashmir. Through a quantitative methodology with pre-experimental one group pre-test post-test design on non probability purposive sample of 60(Sixty) GNM Students, the problem was addressed. Data analysis through SPSS-16 version by using t- test exposed significant difference 32.65 ($P < 0.05$) amongst pre-test and post-test knowledge scores of respondents and revealed a substantial increase in knowledge scores amongst General Nursing And Midwifery students on knowledge regarding the prevention of needle stick injuries using specific health teaching programme.

INTRODUCTION

Needle stick injuries are a common event in the healthcare environment. When drawing blood, administering an intramuscular or intravenous drug, or performing other procedures involving sharps, the needle can slip and injure the healthcare worker. This sets the stage to transmit viruses from the source person to the recipient. These injuries also commonly occur during needle recapping and as a result of failure to place used needles in approved sharps containers.¹

During surgery, a surgical needle may inadvertently penetrate the glove and skin of the surgeon or assistant. Penetrating accidents of the surgeon or assistant with the scalpel or other sharp instruments are also handled as a needle stick injuries. Generally needle stick injuries cause only minor bleeding or visible trauma, however, even in the absence of bleeding the risk of viral infection remains. Scalpel injuries tend to be larger than a needle stick.² In turn, a needle stick injury may also pose a risk for a patient if the injured health professional carries HBV, HCV or HIV. Needle stick injuries are not limited to the medical community, any environment where sharps are encountered poses a risk.³

A needle stick injuries is a percutaneous piercing wound typically set by a needle point, but possibly also by other sharp instruments or objects. Commonly encountered by

people handling needles in the medical setting, such injuries are an occupational hazard in the medical community.⁴

These events are of concern because of the risk to transmit blood-borne diseases through the passage of the hepatitis B virus (HBV), the hepatitis C virus (HCV), and the Human Immunodeficiency Virus (HIV), the virus which causes AIDS.⁵

While needle stick injuries have the potential of transferring bacteria, protozoa & viruses, from a practical point the transmission of the hepatitis B and hepatitis C viruses and the Human Immunodeficiency Virus (HIV) is important.⁶

The specific risk of a single injury depends on a number of factors when the patients harbor the virus of concern. Injuries with a hollow-bore needle, deep penetration, visible blood on the needle, a needle that was located in a deep artery or vein, or with blood from terminally ill patients are known to increase the risk for HIV infection.⁷ The most serious and commonly transmitted pathogens are Hepatitis B and C virus (HBV, HCV) and the human Immunodeficiency virus (HIV), the virus that causes AIDS. Each of these viruses poses a different risk if a healthcare worker is exposed. More than 20 other infections can be transmitted through needle sticks, including syphilis, malaria, and herpes.⁸

Raj A and et al (2024)⁹ conducted a cross-sectional study among 210 consenting healthcare workers (HCWs), who worked in different blocks of a tertiary care hospital in the Ernakulum district, Kerala, India. Data was collected using a semi-structured questionnaire through personal interviews. The questionnaire gathered socio-demographic information, details regarding needlestick injury occurrences over the past one year. It was observed that the prevalence of needle stick injuries among healthcare workers in the past 12 months was 31% (65 out of 210), with an average of 1.34 needle stick injuries per healthcare workers per year. The most commonly involved device was the intravenous (IV) cannula, and 22 out of 65 (33.8%) injuries occurred during injection procedures. Majorities (45 out of 65; 69.23%) of healthcare workers reported needle stick injuries and 51 of them (78.4%) received PEP (post exposure prophylaxis).

Dr Rabbanie and et al (2019)¹⁰ conducted a cross-sectional study among 150 healthcare workers including nurses, 54(49.1%) laboratory technicians 29(26.4%), operation theatre assistants 13(11.8%), dental technicians 9(8.2%) and vaccinators 5(4.5%) at Govt medical college Srinagar and associated hospitals of Kashmir to assess the attitude, reporting behavior and practice of occupational needle stick injuries among hospital healthcare workers. This study showed that 4.6%, 34.6% and 8.2% of the health care workers, respectively, were unaware of the fact that hepatitis B, hepatitis C and HIV-AIDS can be transmitted by needle-stick injury. 76 (69%) had a history of one to two needle stick injuries per year. Only 2 (6.3%) subjects reported the injuries to doctors to get post-exposure treatment, and only 2 (1.8%) of were in the habit of using gloves regularly for phlebotomy procedures. 31 (28.0%) were of the impression that needles should be recapped after use, and only 47 (43.0%) were aware of universal precaution guidelines, while only 13(11.8%) of subjects had adequate knowledge of new needle devices and the safety features. 76(69.1%) use the hub cutter to destroy the needle regularly. If a hub cutter was not available 4/5th of the respondents use their two hands for capping the needle rather than one.

Education and training are pivotal in reducing the incidence of needlestick injuries among healthcare workers. Educational programs tailored for healthcare workers have been shown to decrease the occurrence of needle stick injuries. These programs focus on proper handling techniques, adherence to safety protocols and use of safety-engineered devices.

The National Institute for Occupational Safety and Health (NIOSH) has initiated campaigns like "Stop Sticks" to educate at-risk healthcare workers, highlighting the effectiveness of educational interventions in needle stick injuries prevention. So by enhancing awareness and promoting safe practices, educational interventions significantly mitigate the risks associated with needle stick injuries.¹¹

So, considering the above facts, the investigators wanted to carry out a research study "a study to assess the effectiveness of structured teaching programme on knowledge regarding prevention of needle stick injuries " to gain adequate, accurate and more information as well as suitable guideline for the further development. This is the best way of preventing needle stick injuries. The 1st year General Nursing and Midwifery (GNM) students are selected for this study because they are among the most vulnerable groups to needlestick injuries (NSIs) as they undergo extensive hands-on training in hospitals, where they perform procedures such as administering injections, drawing blood, and handling intravenous lines, increasing their risk of needlestick injuries. It has also been observed that as Compared to experienced nurses, GNM students may lack the confidence and skill required to handle sharps safely, making them more prone to accidental injuries. GNM students receive theoretical

education on infection control, their practical understanding of needlestick injury prevention may be inadequate, highlighting the need for structured teaching programs.

In addition to this, being in the 1st year of learning phase, they often work under pressure, which can lead to mistakes such as improper handling of needles or failure to follow safety protocols. So educating 1st year GNM students about needlestick injury prevention at an early stage can instill safe practices that they will carry throughout their careers, ultimately reducing needlestick injury incidents in the healthcare sector.

The investigators planned to conduct the study in college as selecting students from a specific nursing and paramedical college ensures accessibility, cooperation, and reliable follow-up for data collection and intervention assessment moreover conducting the study in a defined educational setting allows for better monitoring of the intervention's effectiveness.

Investigators chose district Kulgam for research purpose as it is rural district where nursing students may have fewer opportunities for advanced infection control training .compared to those in other urban districts. The region may have resource constraints in healthcare facilities, increasing the risk of needlestick injuries due to inadequate safety measures or outdated practices. The study aims to bridge educational gaps and enhance preventive measures, ultimately benefiting both students and the broader healthcare workforce in Jammu & Kashmir.

Hence the investigators planned the present study to assess the knowledge regarding prevention of needle stick injury before and after implementation of specific health teaching programme among first year GNM students at selected paramedical & nursing college Kulgam, J&K."

Objectives

- To assess the knowledge of 1st year GNM students regarding prevention of needle stick injuries before and after the implementation of structured teaching programme regarding prevention of needle stick injuries.
- To compare the relation between pre-test and post test knowledge score regarding prevention of needle stick injuries.
- To evaluate the effectiveness of structured teaching programme regarding prevention of needle stick injuries.
- To determine the association between knowledge score and demographic variables such as: age, gender, educational status of father, educational status of mother, family income, history of needle stick injuries, previous exposure of witnessing/caring needle stick injuries patient, previous exposure of information regarding prevention of needle stick injuries, source of information.

Hypothesis

- H0= There will be no significant difference between mean pre- test and post- test knowledge score of first year GNM students regarding prevention of needle stick injuries **76**
- H1= The mean post-test knowledge among first year GNM students will be significantly higher than mean pre-test level of knowledge regarding prevention of needle stick injuries.
- H2= There will be significant association between knowledge of first year GNM students regarding prevention of needle stick injuries with selected demographic variables.

Assumptions

- Students will have inadequate knowledge regarding prevention of needle stick injuries.
- Structured teaching programme will be effective to impart knowledge regarding prevention of needle stick

injuries.

- The students would co-operate with the investigator and would be willing to express their knowledge regarding prevention of needle stick injuries.
- Student's clinical experience and care can be improved.

Literature Review

Abdo Almolikey et al (2024)¹² conducted a cross-sectional study on a sample of 151 nurses working in three public hospitals in Taiz to assess prevalence and associated factors of needle stick and sharp injuries and it was reported that the prevalence of needle stick and sharp injuries among nurses was very high (95.36%), and around half were injured more than five times. Female nurses and those in an emergency department were more likely to be subjected to needle stick and sharp injuries ($p = 0.018$ and 0.021 , respectively). Needle stick was the most common cause of injury (62.77%), and the fingers were the most exposed injury site (79.17%). Non-reporting injuries were very high (73.61%), and only one-third (34.21%) of them proceeded in the process of management, and less than one-quarter (23.68%) had been vaccinated. It was concluded that the prevalence of needle stick and sharp injuries among nurses in Taiz was very high, and determined by gender and place of work.

Ehsan Ahmed et al (2024)¹³ conducted a cross-sectional study to assess the knowledge and attitude of 306 nursing and dentistry students at Riyadh Elm University in Riyadh, Saudi Arabia. The findings revealed that more than half of the studied sample had low knowledge and negative attitudes about needle stick injury. The marital status and number of needle stick injury are statistically significant with attitude towards needle stick injury. It is concluded that no statistical correlation exists between the students' knowledge and attitude regarding needle stick injury

Li, X., He, Q. & Zhao (2024)¹⁴ conducted a cross-sectional study to assess the prevalence of situation and factors associated with needle stick and sharps injuries (NSSIs) among 562 health-care workers (HCWs) in a tertiary hospital in China. And it was observed that the proportion of participants with at least one injury within the year preceding the investigation was 21.2%. Male (AOR = 2.116 [1.265, 3.538]), working hours per week > 40 (AOR = 1.718 [1.056, 2.796]), rarely checking blood-borne infections before invasive operations (AOR = 2.219 [1.303, 3.782]) were significantly associated with needle stick and sharps injuries and it was concluded that it is necessary to promote educational programs to enhance awareness of standard prevention measures, especially for key populations, and reduce heavy workloads to decrease the occurrence of such injuries.

T Naidu, Toal, Chandra, Nair, K Shejul (2024)¹⁵ conducted a cross-sectional study to assess the incidence of needlestick injury among 164 medical officers, 90 resident doctors, 350 nurses, 220 technicians and subordinate staff and 210 cosmetic maintenance staff at Bhabha Atomic Research Centre Hospital, Mumbai and it was reported that Fifty-six cases of needle stick injury were recorded over three years, accounting for an incidence of 10.4/100 occupied beds per year. Maximum cases (73.2%) occurred between the 20 and 40 yr age group. The distribution among the work category was doctors (37.5%), nursing staff (26.8%), phlebotomy technicians (12.5%), housekeeping/subordinate staff (12.5%) and others (10.7%). Appropriate personal protective equipment (PPE) was donned by 66 per cent of the health-care workers. The majority of cases (46.4%) occurred in wards and operating rooms (23.2%). Phlebotomy (35.7%), followed by procedures, such as hemoglucotest (HGT) measurement, intravenous cannula insertion and operative procedures (33.9%), were the most common situation during which health-care workers suffered needle stick injury. While 64.2 per cent health-care workers were vaccinated for hepatitis B, only 5.4 per cent of the health-care workers

completed post-exposure anti-retroviral regimen and it was concluded that a relative lack of awareness towards preventive measures and inexperience among health-care workers may be contributory to high occurrence of needle stick injury events.

Fethin Georghe (2020)¹⁶ conducted a cross sectional study to assess the effectiveness of structured teaching programme on knowledge regarding prevention and management of needle stick injury among 100 selected student nurses from M.O.S.C. College of Nursing, Kolenchery. The results being revealed were that the pre test revealed that about 5% had good knowledge score, 44% had poor knowledge, and 51% had average knowledge about prevention and management of needle stick injury. It is observed that variables such as age and course of study are significantly associated with the pre test knowledge score. Significant score difference was seen between pretest knowledge score median 7, and post test knowledge score median 18. Hence the intervention was found to be effective. The study conclude that structured teaching programme regarding prevention and management of needle stick injury among nursing students was effective in terms of improving their knowledge.

MATERIALS AND METHODS

Research design adopted for this study was preexperimental one group pre-test post-test research design. The main data collection period started from 14- 01-2021 to 20-01-2021. The structured knowledge questionnaire was administered to assess the knowledge of 1st year GNM students regarding prevention of needle stick injuries then Specific health teaching programme was implemented to 1st year GNM students and then knowledge was re-assessed by using same structured knowledge questionnaire for 1st year GNM students

This study was carried on a sample of 60 1st year GNM students at selected paramedical & nursing college Kulgam, J&k." The sample was selected through a non-probability purposive sampling technique. Proper agreement was sought from the study college, officials and ethical board before data was collected. The conditions for inclusion in the study were determined by reviewing the records. The inclusion standard included students who are studying in selected paramedical & nursing college, students who are willing to participate, and students who could follow English/Urdu language. The data collection was made through a structured knowledge questionnaire on the 1st year GNM students at selected paramedical & nursing college Kulgam, J&k."

The structured knowledge questionnaire was divided into three parts. Part-1:-It included items regarding demographic data like age, gender, educational status of father, educational status of mother, family income, history of needle stick injuries, previous exposure of witnessing/caring needle stick injuries patient, previous exposure of information regarding prevention of needle stick injuries, source of information Part-2:A structured knowledge questionnaire was prepared consisting of 30 items on knowledge regarding prevention of needle stick injuries.. The knowledge regarding prevention of needle stick injuries was measured in terms of knowledge score and accordingly right answer was given a score of one mark and incorrect answer was given a score of zero. The data collected through the questionnaire was exposed to tests of reliability and the reliability assessed was 0.97 and the content validity was established through expert's opinion. Data analysis was done by SPSS-16 using frequency and percentage to analyze the background information, knowledge, and selected outcome. Mean percentage and standard deviation were used to describe the knowledge and selected outcome. Further t-test was used to compare means of the knowledge scores and the possible selected outcomes and accordingly inferences were made.

RESULTS AND DISCUSSION

The findings of the study are discussed under these sub-headings.

Section 1. Demographic Findings of the Study Group

Demographic findings revealed that out of 60 students, all the students 100 % (60) belong to the age group of 19 -23 years. Majority of students 49(81.66%) were females and 11 (18.33%) were males. Among the father of 60 students majority (28) completed graduation and no one was illiterate. Majority of the mother's of students (23) finished graduation and high school and 3.3 % (2) completed primary school. Majority of students 73.3 % (44) have monthly income more than 15,000 per month only 5 % (3) students have monthly income less than 5,000. None of the students have a history of needle stick injury among family, friends or relatives. None of the students have a previous exposure of witnessing / caring needle stick injury patient. Majority of students 93.3% (56) have no previous information regarding prevention of needle stick injuries. Whereas 6.7% (4) students have some previous exposure of information regarding prevention of needle stick injuries. The study shows that among 6.7 % (4) of students got information only from Television /Radio/ Films as depicted in the table 1.

Table .1: Percentage and frequency Distribution of First Year GNM Students According to Personal Characteristics. n=60

Characteristics	Frequency	Percentage (%)
Age	19-23 years	60
	24-27 years	0
	28-30years	0
Gender	Female	49
	Male	11
Educational status of father	No formal education	0
	Primary school	9
	Middle school	18
	High school	2
	Graduate	28
	Postgraduate and above	3
Educational status of mother	No formal education	4
	Primary school	2
	Middle school	3
	High school	23
	Graduate	23
	Postgraduate and above	5
Monthly income of the family.	<5000	3
	5,001-10,000	1
	10,001-15,000	12
	>15,000	44
Is there any history of any needle stick injury	Family	0
	Friends	0
	Relatives	0
	None	60
Previous exposure of witnessing/caring needle stick injury patient.	Yes	0
	No	60
Previous exposure of information regarding prevention of needle stick Injuries	Yes	4
	No	56

If yes, source of information	Television/radio/films	4	6.7
	Health professionals /health workers	0	0.0
	Magazines/news paper/books	0	0.0
	Friends/relatives	0	0.0
	Any other	0	0.0

Section 2. Knowledge Score of Study Groups:-

2a:-Overall Assessment of Pre-test Knowledge Scores of Ist Year GNM Students Regarding Prevention of needle Sticks Injuries.

Frequency and percentage distribution of pre-test score of knowledge regarding prevention of needle sticks injuries among Ist year GNM students discovered that majority of the students 86.7% (52) were having inadequate knowledge score and remaining was having moderate knowledge score and adequate knowledge score was received by none of the students as depicted in the table 2a.

Table.2a: Frequency and Percentage Distribution of Pre-test Score of Knowledge Regarding Prevention of Needle Sticks Injuries Among IstYear GNM Students. n=60

Knowledge score	Category	Classification of Ist year GNM students on pre-test knowledge Score	
		F	%
Inadequate	<50%score	52	86.7
Moderately inadequate	51-75% score	8	13.3
Adequate	>75%score	0	0.0
Total		60	100.0

2b.Overall Assessment of Post-test Knowledge Scores of Ist Year GNM Students Regarding Prevention of Needle Sticks Injuries.

Frequency and percentage distribution of post-test score of knowledge regarding prevention of needle sticks injuries among Ist year GNM students discovered that, after teaching with structured teaching programme 81.7%(49) of students exhibited adequate score of knowledge and 18.3% (11) of students exhibited moderate score of knowledge and none of them had inadequate knowledge score regarding prevention of needle sticks injuries as depicted in the table 2b.

Table 2b:-Frequency and Percentage Distribution of Post Test Score of Knowledge Regarding Prevention of Needle Sticks Injuries Among IstYear GNM Students. n=60

Knowledge score	Category	Classification of Ist year GNM students on post-test knowledge Score	
		F	%
Inadequate	<50%score	0	0
Moderately inadequate	51-75% score	11	18.3
Adequate	>75%score	49	81.7
Total		60	100.0

Section 3. Effectiveness of Teaching with Structured Teaching Programme (Testing Hypothesis).

3a.Comparison of Pre-test and Post-test Score of Knowledge Regarding Prevention of Needle Sticks Injuries Among IstYear GNM Students.

The study clearly depicts that, before implementing structured teaching programme ,86.7%(52)of students were having inadequate knowledge score, whereas after implementing structured teaching programme none of them exhibit in adequate score of knowledge .Similarly before implementing structured teaching programme adequate score of knowledge was not there in any of the students, whereas after implementing structured teaching

programme 81.7 % (49) of the students exhibited adequate score of knowledge. When the paired t test value was computed to find the significance of the difference, it was observed that calculated value (32.65) is higher than table value (2.39) at the level of significance 0.05 level and hence hypothesis H1 is accepted as depicted in the table 3a.

Table 3a:- Comparison of Pre-test and Post-test Level of Knowledge Score of IstYear GNM Students. n=60

Knowledge score	Pre- test		Post- test	
	Frequency	Percentage	Frequency	Percentage
Inadequate	52	86.7	0	0.0
Moderately Inadequate	8	13.3	11	18.3
Adequate	0	0.0	49	81.7
Total	60	100.0	60	100.0

Section3B: Knowledge Rnhancement and Testing Hypothesis.

The study shows that the mean post-test knowledge scores that is 32.65(±3.85) of Ist year GNM students is higher than that of the mean pre-test knowledge score that is 16.46 (=±4.18). Thus there is a significant difference between mean pre-test and post-test knowledge scores. The total knowledge enhancement is 41.5%. The computed 't' test value (32.65) is higher than table value (2.39) at 0.05 level of significance

Table 4. Association of Post-test Score of Knowledge with Selected Demographic Variables. n=60

Characteristics		Overall Knowledge					
		Median and below		Above median		Chi square	Table value
		N	%	N	%		
Age	19-23 years	34	56.7	26	43.3	...	
	24-27 years	0	0.0	0	0.0		
	28-30years	0	0.0	0	0.0		
Gender	Female	28	57.1	21	42.9	5.025S	3.84
	Male	6	54.5	5	45.5	DF=1	
Educational status of father	Noformal education	0	0.0	0	0.0	3.479NS	5.99
	Primaryschool	9	15.0	22	40.0	DF=2	
	Middleschool	2	0.0	0	0.0		
	High school	28	73.7	5	26.3		
	Graduate	28	46.6	14	53.8		
	Postgraduateandabove	3	5	7	46.7		
Educational status of mother	Noformal education	4	0.0	0	56.0	1.422NS	9.49
	Primaryschool	2	66.7	1	33.3	df=4	
	Middleschool	3	70.7	1	39.3		
	High school	23	60.9	37	39.1		
	Graduate	23	60.9	37	39		
	Postgraduateandabove	5	66.7	3	33.3		
Monthly income of the family	<5000	2	66.7	1	33.3	2.092NS	7.82
	5,001-10,000	1	100.0	0	0.0	df=3	
	10,001-15,000	5	41.7	7	58.3		
	>15,000	26	59.1	18	40.9		
Is there any history of needle stick injury .	Family	0	0.0	0	0.0		
	Friends	0	0.0	0	0.0	--	
	Relatives	0	0.0	0	0.0		
	None	34	56.7	26	43.3		
Previous exposure of witnessing/caring needle stick injury patient	Yes	0	0.0	0	0.0	---	
	No	34	56.7	26	43.0		
Previous exposure of information regarding prevention of needle stick injuries	Yes	0	0.0	4	100.0	2.604NS	3.84
	No	34	60.7	22	39.3	df=1	
If yes, then source of information,	Television/radio/films	0	0.0	4	100.0	df=1	
	Health professionals workers	0	0.0	0s	0.0		
	Magazines/ newspaper/ books	0	0.0	0	0.0		
	Friends/relatives	0	0.0	0	0.0		
	Any other	0	0.0	0	0.0		

which reveal the structured teaching programme is highly effective. Hence the hypothesis H1 is accepted as depicted in table 3b.

Table 3ba:- Overall Pre and Post-test Knowledge Scores of IstYear GNM Students. n=60

Aspects	Over all pre-test and post-test knowledge				Paired 't' test
	Max. score	Mean	Mean (%)	Standard deviation (SD)	
Pre-test	39	16.46	42.22	4.18	30.403
Post-test	39	32.65	83.72	3.84	*
Enhancement	39	16.19	41.5	±0.34	

Significant at 5% level, p value = 0.05, df = 59, table value = 2.39

Section 4. Association of Post-test score of Knowledge with Selected Demographic Variables.

The study results depict that there is a significant association between the gender of the students and knowledge score. Hence the hypothesis H2 stating ' there will be significant association between the mean post test knowledge score of the Ist year GNM students with their selected demographic variables' is accepted. There is no significant association found between knowledge gained and other personal characteristics of the students like age, education of parents, family income as depicted in table 4.

^s is significant, ^{NS} is not significant.

CONCLUSION

The findings of this study highlighted the importance of specific health teaching programme on IstYear GNM students having inadequate knowledge regarding prevention of needle stick injuries. The present study assessed the knowledge of students regarding prevention of needle stick injuries through implementation of structured teaching programme and found the majority 86.7% of the students had inadequate knowledge score and 13.3% of students had moderate knowledge score in the pre test. In post test 81.7% of students had adequate knowledge score. It shows that there is a significant improvement in knowledge score of the students after implementation of structured teaching programme. It statistically proved and revealed that implementation of structured teaching programme is effective in improving the knowledge of students regarding prevention of needle stick injuries.

The implementation of structured teaching programme had enhanced the knowledge score of students, which is essential for appropriate prevention of needle stick injuries. The students express that the implementation of structured teaching programme is informative and it would help them to identify and manage their needs.

Hence implementation of structured teaching programme instructionally effective, appropriate and feasible. It can be used in the class, hospital and community setting for the students to improve their knowledge.

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