Section: Miscellaneous

Original Research Article

A STUDY TO ASSESS THE EFFECTIVENESS OF STRUCTURED TEACHING PROGRAM ON KNOWLEDGE AND EXPRESSED PRACTICES REGARDING LINE SEPSIS AND ITS PREVENTION AMONG NURSING STUDENTS OF SHIVALIK INSTITUTE OF NURSING SHIMLA, HIMACHAL PRADESH

Tamanna Sharma[1], Priyanka Rai[2]

[1]Assistant Manager Education & Training, Fortis super speciality Hospital Gurugram, India.
[2]Lecturer, Kailash Institute of Nursing and Paramedical Science, India.

Received *: 15/09/2025*
Received in revised form *: 05/11/2025*
Accepted *: 21/11/2025*

Corresponding Author:
Dr. Tamanna Sharma,
Assistant Manager Education & Training, Fortis super speciality Hospital Gurugram, India.
Email: chahat.official.chahat@gmail.com

DOI: 10.70034/ijmedph.2025.4.457

Source of Support: Nil,
Conflict of Interest: None declared

Int J Med Pub Health
2025; 15 (4); 2533-2543

ABSTRACT

This famous old saying stresses the importance of prevention in our day to day life. It is essential that nurses be knowledgeable regarding health promotion and disease condition. Hospital associated infections contributing to several diseases and complications to the patient heath. The objective of the study was to evaluate the effectiveness of structured teaching program by comparing the pre test and post test on knowledge and expressed practices scores of nursing students. The conceptual framework for this study was derived from general system theory (Ludwig Von Bertlanffy, 1968). According to general system theory, system is a set of interacting parts in a boundary which makes the system work well to achieve its overall objectives. Quantitative research approach was used with pre experimental, one group pre test post test design. The dependent variable was knowledge and expressed practices and independent variable was Structured Teaching Program. The setting was Shivalik Institute of Nursing , Bhattakuffer, Shimla. Sampling technique was simple random sampling technique. Both descriptive and inferential statistics methods were used. The pre test mean knowledge score of was 14.33, standard deviation was 3.062 and the mean % was 47.80. The post test mean knowledge score was 25.7 and standard deviation was 1.977 and the mean % was 85.70. The difference in mean% was 37.89. The calculated "t" value of 26.051 depicted highly statistical significance at p <0.001 level. The pre test mean expressed practices score of was 3.32, standard deviation was 0.833 and the mean % was 33.20. The post test mean expressed practices score was 8.87 and standard deviation was 0.965 and the mean % was 88.70. The difference in mean% was 55.50. The calculated "t" value of 33.554 depicted highly statistical significance at p <0.001 level. The correlation of knowledge and expressed practices is not significant as value of r value 0.139 and p value 0.291. There was no significant association of post test level of knowledge and expressed practices with any of demographic variable. The study assessed the knowledge and expressed practices of nursing students regarding line sepsis and its prevention. After administering Structural Teaching Program, there was a significant improvement in nursing students knowledge and expressed practices regarding line sepsis and its prevention.

Keywords: Structured Teaching Program, Sepsis, Nursing Students.

INTRODUCTION

This famous old saying stresses the importance of prevention in our day to day life. It is essential that nurses be knowledgeable regarding health promotion and disease condition. When providing holistic care, they should think beyond current health problems. Hospital associated infections contributing to several diseases and complications to the patient heath. There is increase in no. of deaths due to sepsis after lines insertion (centre line, arterial line, picc line). Black M joyce.(2009)

Now days the intravenous therapy is used in hospital to:

- replace fluid and electrolyte in patients who cannot take these orally;
- Replenish blood supply; give medications; restore acid base balance;
- Speed up the action of certain medications by injecting them directly to the blood stream.
- There are two major sources of blood stream infection associated with any intra vascular device:

Colonization of the device itself.

Contamination of the fluid administered through device. Bijaya Laxmi (2010)

Heath care associated infections are an important cause of mortality and morbidity and place a significant economic burden on the health care system. An estimated 1.7 million HAIs (4.5 infections per 100 hospital admissions) occurred in the united states in 2002, resulting in nearly 100,000 deaths. Klevens RM, Edwards JR (2007)

A prospective study conducted between June 2006 and May 2011 in India. All consecutively admitted patients during the 5 year study >=18 years of age were included and data obtained from hospital in-patient records. Variables measured were the incidence of severe sepsis, ICU, hospital, and 28-day mortality, the median length of ICU stay, median Acute Physiology and Chronic Health Evaluation II (APACHE II) score, infection site, and microbial profile. There were 4711 admissions during the study with 282 (6.2%, 95% confidence interval 2.3, 13.1) admissions with severe sepsis. ICU mortality, hospital mortality, and 28-day mortality were 56%, 63.6%, and 62.8%, respectively. Predominant infection site was respiratory tract. The most common organisms were Gram-negative microbes. The most common microbe was Acinetobacter baumanni. Median APACHE II score on admission was 22 (interquartile range 16-28) and median length of ICU stay was 8 days. Severe sepsis attributable mortality was 85%. Chatterjee S, Bhattacharya M (2006).

Agencies such as national health care safety network of the centres for disease control and prevention (CDC) were formed in response to the growing awareness that HAIs are urgent public health and patient safety issues. The recent action plan proposed by the department of health and human services identified CRBIs as a priority area for prevention. (Maki D G, Kluger D M (2006).

Review of literature

AKIHIRO SATO (2017) The purpose of this study was to identify the clinical characteristics and outcomes of peripheral vascular catheter-related bloodstream infections (PVC-BSIs) and determine the risk of severe complications or death. A retrospective observational study from June 2010 to April 2015 at two regional university-affiliated hospitals in Tokyo. The median time from admission to bacteremia was 17 days (range, 3–142 days) and that from catheter insertion to bacteremia diagnosis was 6 days (range, 2–15 days). Catheter insertion sites were in the arm in 48 (77.4%) patients, in the foot in 3 (4.8%) patients, and in an unrecorded location in 11 (17.7%) patients. Additionally, the causative pathogens were Gram-positive microorganisms in 58.0% of cases, Gram-negative microorganisms in 35.8% of cases, Candida spp. in 6.2% of cases, and polymicrobials in 25.8% of cases. Eight (12.9%) patients died within 30 days of their blood culture becoming positive. Patients who died of PVC-BSIs had a higher proportion of Staphylococcus aureus infection than patients who survived (odds ratio, 8.33; p = 0.004).

2). ANUPAM PAREEK 2018, conducted a quasi experimental study to assess the effectiveness of Planned Teaching Programme Regarding knowledge on selected Venous access device care among B.Sc Nursing Final year Student Methodology - Research approaches adopted for the study was Evaluative approach with Quasi experimental design. Non-probability sampling technique was used to obtain data. The study was conducted on B.Sc Nursing final year students from July 2017 to January 2018 at College of Nursing Shri Ganganagar and College of Nursing Bikaner (Rajasthan). The sample size was 100. Results- In the present study, majority of the subjects in control group and experimental group were 22-24 years of age. As regard to sex distribution, majority of the subjects (62%) were male. The mean post-test knowledge scores of Control group and experimental group were 25.02 and 33.04 respectively. The calculate t-test value was 16.78, which represents the significant gain in knowledge, through the planned teaching programme (PTP). The study showed only significant relationship between knowledge and age group. Conclusion of the study was the PTP was effective in increasing the knowledge of student nurses regarding selected venous access devices care. There is a need of sound orientation and continuous educational program for nurses regarding venous access devices care. It will be directly helpful in reducing the prevalence and incidence of phlebitis and the disease burden.

3). Petersen, 2016 conducted a comparative study of complications rates of central venous catheters verses PICC line catheters induced blood stream infection. The purpose of the study was to compare the rates of central line associated blood stream infections and

venous thrombo embolism in central venous catheters verses peripherally inserted central catheters in hospitalised children. This study was cohort study includes use of retrospective and prospective review of data. Setting was Quaternary care paediatric hospital (2012-2016). Sample in this study was patients admitted in the hospital with central venous and PICC line catheters. result was increase of blood stream infection and thrombo embolism due to PICC line catheters than central venous catheters (odds ratio of 3.15, 95%, p= 0.0002 by PICC line catheters, ratio of 2.71, 1.65, p=<0.0001).

MATERIALS AND METHODS

Research Approach: quantitative and evaluative approach
Research Design: Experimental one group pre test post test design
Target Population: Nursing students of B.Sc nursing 3rd year.
Sample size: 60 Students
Sampling Technique: Simple random sampling technique.
Research Setting: Shivalik Institute of Nursing Bhattakuffer Shimla, H.P.
Dependent Variable: knowledge and expressed practices of Nursing students.
Independent Variable: Structured Teaching Program.
Tool: Structured knowledge questionnaire

RESULTS

Analysis and Interpretation
SECTION: 1
FINDINGS RELATED TO SAMPLE CHARACTERISTICS:
This section deals with the analysis and interpretation of data related to frequency and percentage distribution of nursing students by sample characteristics. The sample consists of 60 nursing students present at selected nursing college at the time of data collection. Frequency and percentage were computed for describing the sample characteristics and depicted in tables and figures below:
Data given in table 1.1 depicts that Majority of sample were in age group of 21-24 years (68.3%), followed by age group 17-20 years (30.0%), and minimum in age group above 24 years (1.7%).
100% of the sample were B.sc 3rd year.
Majority of the sample (85.0%) had others family occupational background, followed by sample (11.7%) had Nursing profession family occupational background, followed by sample (1.7%) had medical profession family occupational background, followed by same (1.7%) sample had paramedical staff family occupational background.

Table 1

S.NO.	SAMPLE CHARACTERISTICS	OPTIONS	PERCENTAGE (%)	FREQUENCY (n)
1	**Age in Years**	17-20 years	30.00%	18
		21-24 years	68.30%	41
		Above 24 years	1.70%	1
2	**Class of Studying**	B.Sc 2nd year	0.00%	0
		B.Sc 3rd year	100.00%	60
		B.Sc 4th year	0.00%	0
3	**Family Occupational Background**	Medical Profession	1.70%	1
		Nursing Profession	11.70%	7
		Paramedical Staff	1.70%	1
		Others	85.00%	51
4	**Previous Exposure to critical care unit**	Yes	83.30%	50
		No	16.70%	10
5	**Source of information**	Books	31.70%	19
		Mass/media	35.00%	21
		Teaching classes	33.30%	20
		Others	0.00%	0

Majority of the sample (83.3%) had previous exposure to critical care unit, followed by sample (16.7%) had no previous exposure to critical care unit.
Majority of the sample (35.0%) had mass/media as source of information, followed by the sample (33.3%) had teaching classes as source of information, followed by the sample (31.7%) had books as source of information, followed by the sample (0.0%) had others as source of information.

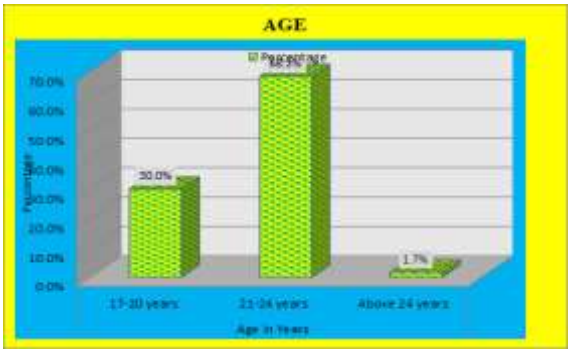

Figure: 3 percentage distribution of age of nursing students

Majority of sample were in age group of 21-24 years (68.3%), followed by age group 17-20 years (30.0%), and minimum in age group above 24 years (1.7%).

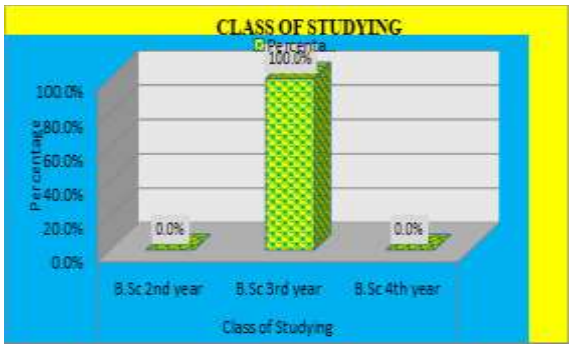

Figure: 4 percentage distribution of class of studying

100% of the sample were B.sc 3rd year.

Figure 5: Percentage distribution of family occupational background

Majority of the sample (85.0%) had others family occupational background, followed by sample (11.7%) had Nursing profession family occupational background, followed by sample (1.7%) had medical profession family occupational background, followed by same (1.7%) sample had paramedical staff family occupational background.

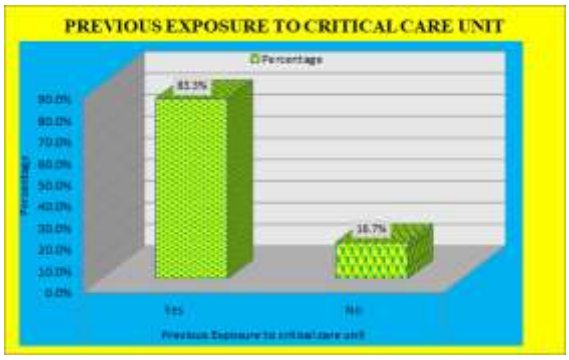

Figure 6: frequency distribution of previous exposure to critical care unit

Majority of the sample (83.3%) had previous exposure to critical care unit, followed by sample (16.7%) had no previous exposure to critical care unit.

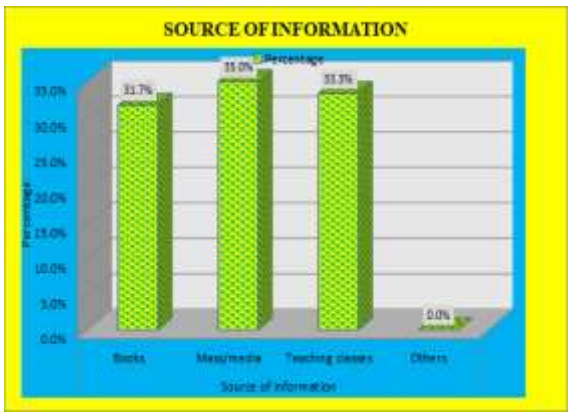

Figure 7: Frequency distribution of source of information of nursing students

Majority of the sample (35.0%) had mass/media as source of information, followed by the sample (33.3%) had teaching classes as source of information, followed by the sample (31.7%) had books as source of information, followed by the sample (0.0%) had others as source of information.

SECTION 2:

FINDINGS RELATED TO THE KNOWLEDGE SCORES OF NURSING STUDENTS ON LINE SEPSIS AND ITS PREVENTION.

This section deals with the analysis and interpretation of data related to the knowledge scores of nursing students obtained through structured teaching questionnaire, in order to evaluate the effectiveness of structured teaching program on line sepsis and its prevention.

SECTION: 2

a) assessment of pretest and post test knowledge score.
b) comparison of knowledge before and after administration of STP.
c) descriptive statistics (mean, median, standard deviation) of knowledge scores of nursing students regarding line sepsis and its prevention.
d) Assessing the effectiveness of structured teaching program regarding line sepsis and its prevention after post test knowledge scores of nursing students.
e) Computing "t" value to find out the significance difference between mean pre test and post test knowledge scores of the nursing students and test hypothesis.

Figure 2.1 depicts the distribution of pre test level of knowledge of nursing students regarding Line sepsis and its prevention. It shows that 8(13.3%) of sample had poor knowledge, where as 52(86.7%) had average knowledge and 0(0%) had good knowledge.

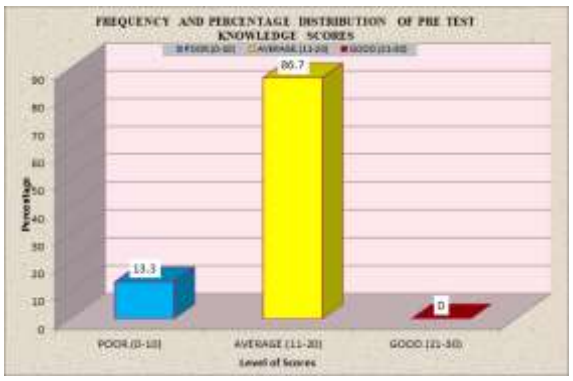

Figure: 2.1

Figure 3.1 depicts the distribution of Post test level of knowledge of nursing students regarding Line sepsis and its prevention. It shows that 0(0%) of sample had poor knowledge, where as 3(5%) had average knowledge and 57(95%) had good knowledge.

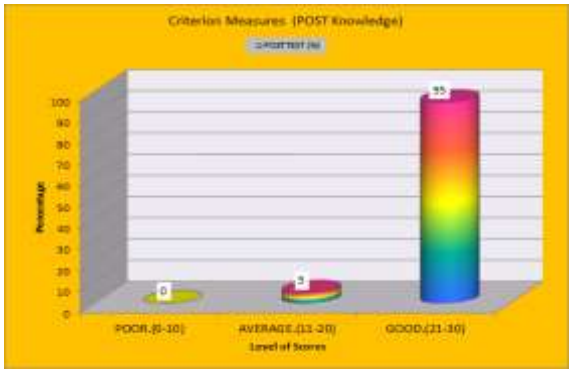

Figure 3.1

Figure 4.1 depicts the comparison of Pre test and post test level of knowledge of nursing students regarding Line sepsis and its prevention. It shows that in pre test, 8(13.3%) of sample had poor knowledge, where as 52(86.7%) had average knowledge and 0(0%) had good knowledge whereas in post test, 0(0%) of sample had poor knowledge, where as 3(5%) had average knowledge and 57(95%) had good knowledge.

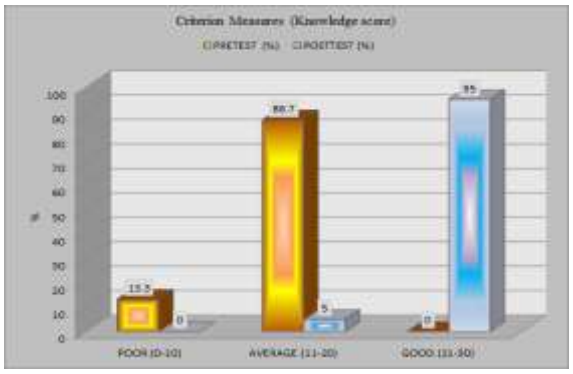

Figure 4.1

Figure 5.1 shows that overall mean knowledge score obtained by nursing students was 14.33 with standard deviation of 3.062. This indicates that low score was obtained for knowledge among nursing students.

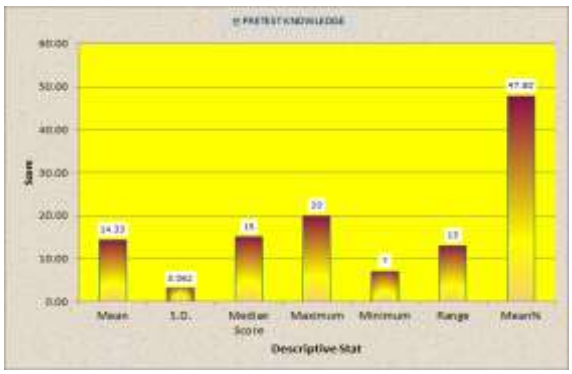

Figure 5.1:

Mean %, standard deviation of pre test scores of nursing students.

Figure 6.1 shows that overall mean knowledge score obtained by nursing students after post test was 25.70 with standard deviation of 1.977. This indicates that high score was obtained for knowledge among nursing students.

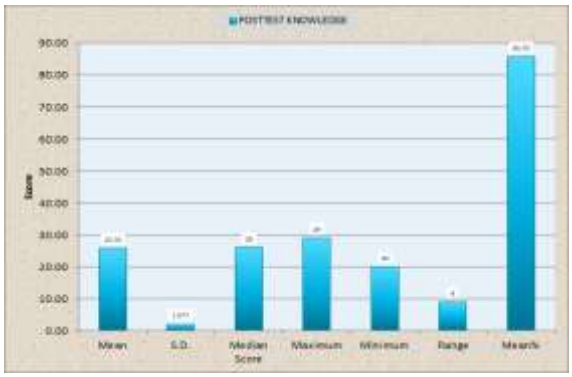

Figure 6.1

Mean %, standard deviation of post test scores of nursing students.

Figure 7.1 shows that effectiveness of structured teaching program is gained as evidenced by increased post test knowledge score 25.70(85.67%) from pre test knowledge score 14.33 (47.78%).

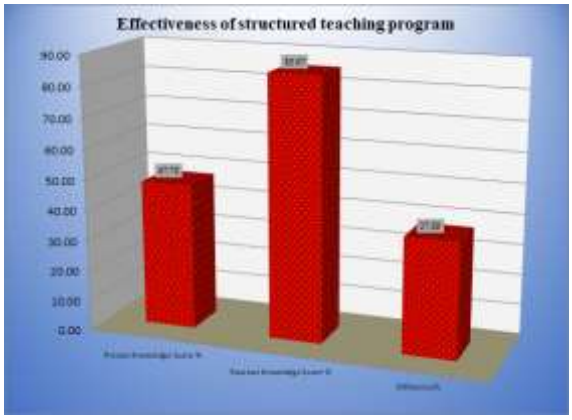

Figure 7.1

SECTION 2 (d):- Computing "t" value to find out the significance difference between mean pre test and post test knowledge scores of the nursing students and test hypothesis.

The hypothesis formulated were as follows:

H_1: There will be a significant difference between pre test knowledge scores and post test knowledge scores students regarding line sepsis and its prevention among nursing students after administration of structured teaching program.

H_0: There will be no significant difference between pre test knowledge scores and post test knowledge scores regarding line sepsis and its prevention among nursing students after administration of structured teaching program.

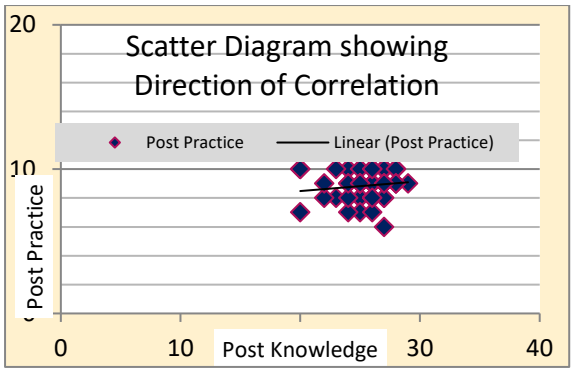

Figure: 9.1: Depicts that after post correlation of post knowledge and expressed practices were not significant

Figure 11.1 depicts the distribution of pre test level of expressed practices of nursing students regarding Line sepsis and its prevention. It shows that 57(95%) of sample had poor knowledge, where as 3(5%) had average knowledge and 0(0%) had good knowledge.

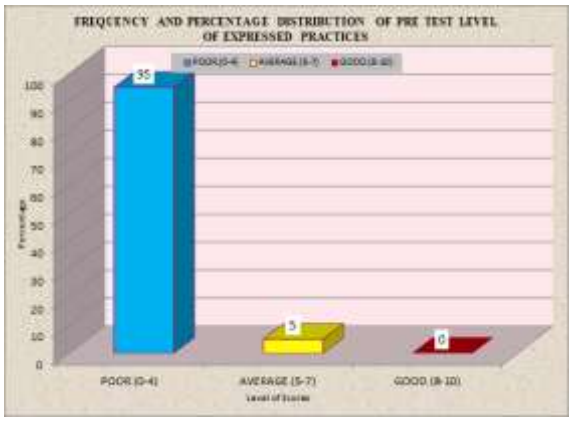

Figure 11.1

Figure 12.1 depicts the distribution of Post test level of expressed practices of nursing students regarding Line sepsis and its prevention. It shows that 0(0%) of sample had poor knowledge, where as 5(8.3%) had average knowledge and 55(91.7%) had good knowledge.

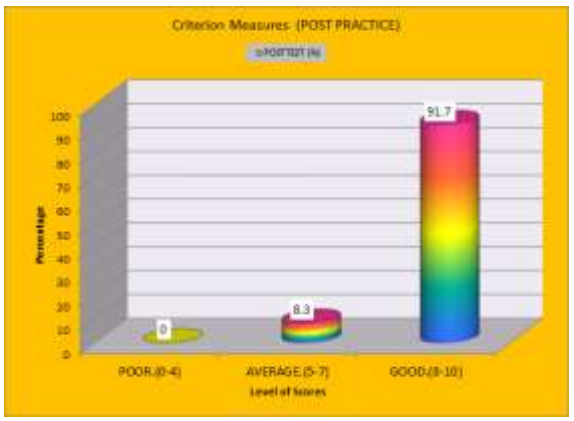

Figure 12.1

Figure 13.1 depicts the comparison of Pre test and post test level of expressed practices of nursing students regarding Line sepsis and its prevention. It shows that in pre test, 57(95%) of sample had poor knowledge, where as 3(5%) had average knowledge and 0(0%) had good knowledge whereas in post test, 0(0%) of sample had poor knowledge, where as 5(8.3%) had average knowledge and 55(91.7%) had good knowledge.

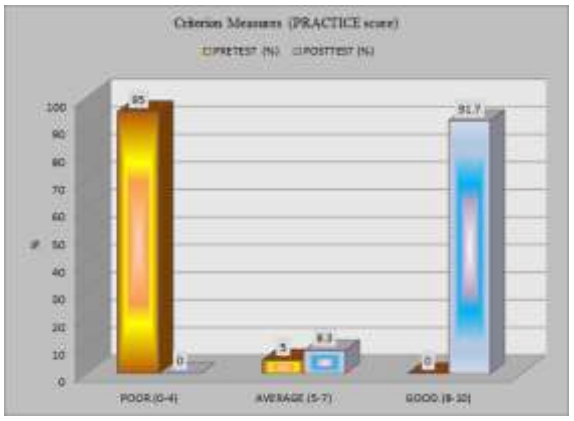

Figure: 13.1

Figure 14.1 shows that overall mean expressed practices score obtained by nursing students was 3.32 with standard deviation of 0.833. This indicates that low score was obtained for expressed practices among nursing students.

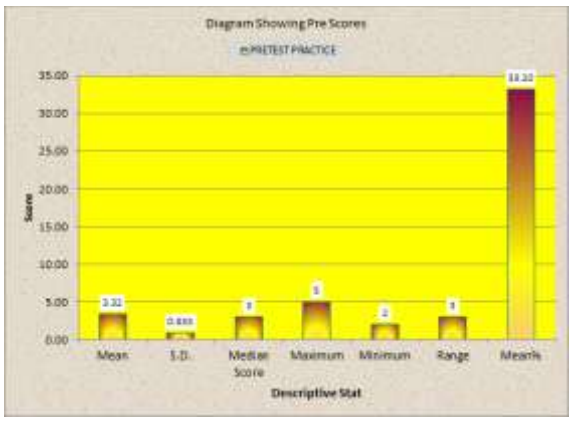

Figure 14.1

Figure 15.1 shows that overall mean expressed practices score obtained by nursing students after post test was 8.87 with standard deviation of 0.965. This indicates that high score was obtained for expressed practices among nursing students.

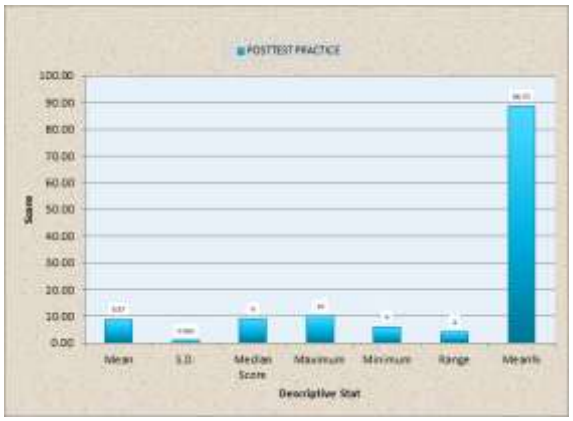

Figure: 15.1

Figure 16.1 shows that effectiveness of structured teaching program is gained as evidenced by increased post test expressed practices score 8.87(88.67%) from pre test expressed practices score 3.32 (33.17%).

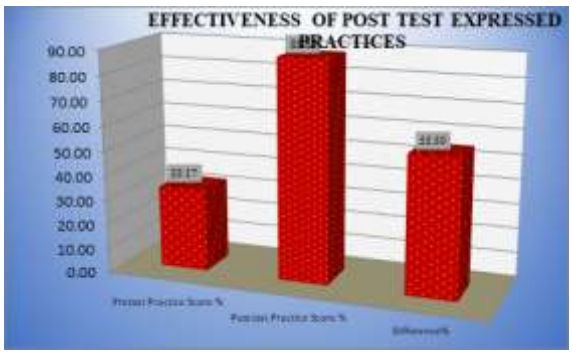

Figure: 16.1

SECTION: 4(e): Computing "t" value to find out the significance difference between mean pre test and post test expressed practices scores of the nursing students and test hypothesis.

The hypothesis formulated were as follows:

H_1: There will be a significant difference between pre test expressed practices scores and post test expressed practices scores students regarding line sepsis and its prevention among nursing students after administration of structured teaching program.

H_0: There will be no significant difference between pre test expressed practices scores and post test expressed practices scores regarding line sepsis and its prevention among nursing students after administration of structured teaching program.

COMPARISON OF PRE TEST AND POST TEST EXPRESSED PRACTICES SCORES TO TEST HYPOTHESIS:

Table 2: Frequency and percentage distribution of pre test knowledge scores

LEVEL OF KNOWLEDGE	FREQUENCY & %AGE
POOR.(0-10)	8 (13.3%)
AVERAGE.(11-20)	52 (86.7%)
GOOD.(21-30)	0 (0%)
Maximum Score=30 Minimum Score=0	

Table 3: Frequency and percentage distribution of post-test knowledge scores

LEVEL OF KNOWLEDGE	FREQUENCY %AGE
POOR.(0-10)	0 (0%)
AVERAGE.(11-20)	3 (5%)
GOOD.(21-30)	57 (95%)
Maximum Score=30 Minimum Score=0	

Table 4: SECTION:2 (b). COMPARISON OF PRE TEST AND POST TEST SCORES AND ITS FIGURE:

LEVEL OF KNOWLEDGE (N= 60)	PRETEST (FREQUENCY & %AGE)	POSTTEST FREQUENCY & %AGE)
POOR.(0-10)	8(13.3%)	0(0%)
AVERAGE.(11-20)	52(86.7%)	3(5%)
GOOD.(21-30)	0(0%)	57(95%)
Maximum Score=30 Minimum Score=0		

SECTION 2(c) DESCRIPTIVE STATISTICS OF PRE TEST KNOWLEDGE SCORES:

Mean, standard deviation & mean percentage of level of pre test knowledge scores regarding line sepsis and its prevention among nursing students:

Table 5: SECTION:2 (b). COMPARISON OF PRE TEST AND POST TEST SCORES AND ITS FIGURE:

Descriptive Statistics	Mean	S.D.	Median Score	Maximum	Minimum	Range	Mean%
PRETEST KNOWLEDGE	14.33	3.062	15	20	7	13	47.80
	Maximum=	30	Minimum=	0			

DESCRIPTIVE STATISTICS OF POST TEST KNOWLEDGE SCORES:

Mean, standard deviation & mean percentage of level of post test knowledge scores regarding line sepsis and its prevention among nursing students:

Table 6:

Descriptive Statistics	Mean	S.D.	Median Score	Maximum	Minimum	Range	Mean%
POSTTEST KNOWLEDGE	25.70	1.977	26	29	20	9	85.70
	Maximum=	30	Minimum=	0			

Table 7: Effectiveness of structured teaching program

EFFECTIVENESS						
Mean%	**Pre test Knowledge**	**Post test Knowledge**	**Difference**	**Pre test Knowledge Score %**	**Post test Knowledge Score %**	**Difference%**
Average	14.33	25.7	11.37	47.78	85.67	**37.89**

Table 8: Comparison of pre test and post test knowledge scores to test hypothesis

							N=60
Paired T Test	**Mean ±S.D.**	**Mean%**	**Range**	**Mean Diff.**	**Paired T Test**	**P value**	**Table Value at 0.05**
PRETEST KNOWLEDGE	14.33±3.062	47.80	7-20	11.370	**26.051 *Sig**	<0.001	2.00
POSTTEST KNOWLEDGE	25.7±1.977	85.70	20-29				
**** Significance Level 0.05 Maximum=30 Minimum=0**							

To test the hypothesis paired t-test was used:

The data presented in this table shows that mean post test knowledge scores (25.77) of the nursing students was higher than their mean pre test scores (14.33). the obtained mean difference (11.370) between the pre test and post test knowledge scores of experimental group was found to be statistically significant as evident from the "t" value 26.051 *Sig at 0.05 level. Therefore, the obtained mean difference was true difference and not by chance.

Hence, the null hypothesis (H_0) was rejected and the research hypothesis (H_1) was accepted. This shows that the structured teaching program on line sepsis and its prevention was effective in enhancing the knowledge of nursing students regarding line sepsis and its prevention.

(f). CORELATION TABLE OF KNOWLEDGE AND EXPRESSED PRACTICES:

Table 9

Pair	Variable 1	vs	Variable 2	N	r value	P value
Pair 1	Post Knowledge	vs	Post Practice	60	0.139^{ns}	0.291^{ns}

Table 10: SECTION 3: Association of post test knowledge scores with socio demographiic variables:

Variables	Sample characteristics	GOOD	AVERAGE	POOR	X^2	P Value	dF
Age in Years	17-20 years	17	1		0.066^{ns}	0.968	2
	21-24 years	39	2				
	Above 24 years	1	0				
Class of Studying	B.Sc 2nd year	0	0		NA		
	B.Sc 3rd year	57	3				
	B.Sc 4th year	0	0				
Family Occupational Background	Medical Profession	1	0		1.501^{ns}	0.682	3
	Nursing Profession	6	1				
	Paramedical Staff	1	0				
	Others	49	2				
Previous Exposure to critical care unit	Yes	48	2		0.632^{ns}	0.427	1
	No	9	1				
Source of information	Books	18	1		2.161^{ns}	0.339	2
	Mass/media	21	0				
	Teaching classes	18	2				
	Others	0	0				

Chi- square significant at 0.05 level of significance

Table 10 shows that Chi-square test used to associate the level of knowledge and selected demographic variables. The Chi-square value shows that there is no significance association between the level of scores and other demographic variables (age, class of studying, family occupational background, previous

exposure to critical care unit and source of information). The calculated chi-square values were less than the table value at the 0.05 level of significance. This shows that the post test knowledge scores was independent on age, class of studying, family occupational background, previous exposure to critical care unit and source of information.

SECTION: 4

FINDINGS RELATED TO THE EXPRESSED PRACTICES SCORES OF NURSING STUDENTS ON LINE SEPSIS AND ITS PREVENTION.

This section deals with the analysis and interpretation of data related to the expressed practices scores of nursing students obtained through structured teaching questionnaire, in order to evaluate the effectiveness of structured teaching program on line sepsis and its prevention.

SECTION: 4

a) assessment of pretest and post test expressed practices score.
b) comparison of expressed practices before and after administration of STP.
c) descriptive statistics (mean, median, standard deviation) of expressed practices scores of nursing students regarding line sepsis and its prevention.
d) Assessing the effectiveness of structured teaching program regarding line sepsis and its prevention after post test knowledge scores of nursing students.
e) Computing "t" value to find out the significance difference between mean pre test and post test expressed practices scores of the nursing students and test hypothesis.

(a) Frequency and percentage distribution of level of Pre test expressed practices:

Table 11

LEVEL OF EXPRESSED PRACTICES	
Score Level (N= 60)	**Frequency %age**
POOR.(0-4)	57 (95%)
AVERAGE.(5-7)	3 (5%)
GOOD.(8-10)	0 (0%)
Maximum Score=10 Minimum Score=0	

Table 12: Frequency and percentage distribution of level of Post test expressed practices

LEVEL OF EXPRESSED PRACTICES	
Score Level (N= 60)	**Frequency %age**
POOR.(0-4)	0 (0%)
AVERAGE.(5-7)	5 (8.3%)
GOOD.(8-10)	55 (91.7%)
Maximum Score=10 Minimum Score=0	

SECTION: 4

(b). Comparison of pre test and post test expressed practices scores:

Table 13: Criteria measure of practice score

Table 13: CRITERIA MEASURE OF PRACTICE SCORE		
Score Level (N= 60)	**PRE TEST f (%)**	**POST TEST f (%)**
POOR.(0-4)	57(95%)	0(0%)
AVERAGE.(5-7)	3(5%)	5(8.3%)
GOOD.(8-10)	0(0%)	55(91.7%)
Maximum Score=10 Minimum Score=0		

SECTION: 4 (c). Descriptive analysis of pre test and post test level of expressed practices:

Table 14: Descriptive analysis of pre test level of expressed practices

Descriptive Statistics	**Mean**	**S.D.**	**Median Score**	**Maximum**	**Minimum**	**Range**	**Mean%**
PRE TEST PRACTICE	3.32	0.833	3	5	2	3	33.20
	Maximum=	10	Minimum=	0			

Table 15: Descriptive analysis of Post test level of expressed practices

Descriptive Statistics	**Mean**	**S.D.**	**Median Score**	**Maximum**	**Minimum**	**Range**	**Mean%**
POSTTEST PRACTICE	8.87	0.965	9	10	6	4	88.70
	Maximum=	**10**	**Minimum=**	**0**			

SECTION: 4 (d) Assessing the effectiveness of structured teaching program regarding line sepsis and its prevention after post test knowledge scores of nursing students.

Table 16: Effectiveness of Structured Teaching Program

EFFECTIVENESS						
Mean%	**Pre test Practice**	**Post test Practice**	**Difference**	**Pre test Practice Score %**	**Post test Practice Score %**	**Difference%**
Average	3.32	8.87	5.55	33.17	88.67	55.50

Table 17

					N=60		
Paired T Test	**Mean ±S.D.**	**Mean%**	**Range**	**Mean Diff.**	**Paired T Test**	**P value**	**Table Value at 0.05**
PRE TEST PRACTICE	3.32±0.833	33.20	2-5	5.550	33.554 *Sig	<0.001	2.00
POST TEST PRACTICE	8.87±0.965	88.70	6-10				
**** Significance Level 0.05 Maximum=10 Minimum=0**							

To test the hypothesis **paired t-test** was used:
The data presented in this table shows that mean post test expressed practices scores (8.87) of the nursing students was higher than their mean pre test scores (3.32). the obtained mean difference (5.550) between the pre test and post test expressed practices scores of experimental group was found to be statistically significant as evident from the "t" value 33.554 *Sig at 0.05 level. Therefore, the obtained mean difference was true difference and not by chance.

Hence, the null hypothesis **(H_0)** was rejected and the research hypothesis **(H_1)** was accepted. This shows that the structured teaching program on line sepsis and its prevention was effective in enhancing the expressed practices of nursing students regarding line sepsis and its prevention.

SECTION: 5

ASSOCIATION OF POST TEST EXPRESSED PRACTICES SCORE WITH SOCIO DEMOGRAPHIC VARIABLES:

Table 18

Variables	Opts	GOOD	AVERAGE	POOR	Chi Test	P Value	df
Age in Years	17-20 years	18	0		2.528^{ns}	0.283	2
	21-24 years	36	5				
	Above 24 years	1	0				
Class of Studying	B.Sc 2nd year	0	0		NA		
	B.Sc 3rd year	55	5				
	B.Sc 4th year	0	0				
Family Occupational Background	Medical Profession	1	0		0.963^{ns}	0.810	3
	Nursing Profession	7	0				
	Paramedical Staff	1	0				
	Others	46	5				
Previous Exposure to critical care unit	Yes	45	5		1.091_{ns}	0.296	1
	No	10	0				
Source of information	Books	17	2		3.192^{ns}	0.203	2
	Mass/media	21	0				
	Teaching classes	17	3				
	Others	0	0				

Table 18 shows that Chi-square test used to associate the level of post test expressed practices and selected demographic variables. The Chi-square value shows that there is no significance association between the level of scores and other demographic variables (age, class of studying, family occupational background, previous exposure to critical care unit and source of information). The calculated chi-square values were less than the table value at the 0.05 level of significance. This shows that the post test expressed practices scores was independent on age, class of studying, family occupational background, previous exposure to critical care unit and source of information.

REFERENCES

1. Black M Joycee, hawks hokanson jane. (2009). Medical surgical nursing new delhi, vol- 1,3.
2. Bijayalaxmi Bibudha, Urmila Acharya. (2010). The nursing journal of India. https://pubmed.ncbi.nlm.nih.gov/23520815
3. Klevens RM, Edwards JR, et al.(2007). Estimating health care associated infections and death in U.S hospitals publication, 160-166.
4. DHHS. (2011) action plan to prevent health care associated infections. http://www.hhs.gov/ophs/initiatives/hai
5. Chatterji S, Bhattacharya M. (2006). A prospective study of knowledge regarding sepsis.
6. Maki DG, Kluger D M. (2006). ; A systematic review of 200 published studies The risk of blood stream infections in adults with difeerent intravascular devices, 1159-1171.

7. Chopra Vineet. (2014). Journal of vascular Surgery, PICC line associated blood stream infection, 1393-1394. https://www.researchgate.net/publication/276936601_PICC
8. Duwadi Sona (2019). International journal of nursing science, PICC line related complications and prevention. https://www.journals.elsevier.com
9. N Safdar et.al, (2013). Journal of hospital infection, arterial catheter related blood stream infection, 1-6
10. https://www.medicine.wisc.edu/sites/default/files/Arterial_catheter-related_bloodstream_infections_Maki_Safdar.pdf
11. Ahmad Fayez.(2018). Article no. 232, the global burden of sepsis and its prevention, https://ccforum.biomedcentral.com/articles/10.1186/s13054-018-2157-z
12. Gahlot Rupam, Kumar Vikas, (2014). Interntional journal of critical illness and injury science, catheter related blood stream infection, 162-167. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4093967/
13. O' Grady.et.al. (2002). hospital infection control practices advisory committee, center of disease, paediatrics, guidlines for the prevention of intravascular catheter related blood stream infections.
14. Adal A, Karim. (1997). Journal of clinical microbiology, meta analysis- diagnosis of vascular catheter related blood stream infection. https://jcm.asm.org/content/jcm/35/4/928.full.pdf
15. Thomas Diana. (2013). International journal of critical care medicine, a descriptive study of catheter related blood stream infection in intensive care unit, 135-139. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3777366/
16. Peri M Trish. (2016). Pubmed infection control and hospital epidemiology, increased catheter related blood stream infection rates after introduction of new machenical valve intravenous access port, 67-70.
17. Sami M Aloush. (2018). Pubmed National Liberary of Medicine, assessment of nurses compliance with blood stream infection prevention guidlines, 273-279. https://pubmed.ncbi.nlm.nih.gov/29543306.