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A Study to Assess the Effectiveness of Plan Teaching Programme on Care of Chest Tube Drainage in Terms of Improvement of Knowledge among Staff Nurses in Selected Hospital of Indore in the Year 2014

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ABSTRACT

A study to assess the effectiveness of plan teaching programme on care of chest tube drainage in terms of improvement of knowledge among staff nurses in selected hospital of Indore in year 2014. It was conducted in 50 samples selected by non probability purposive sampling technique. Pre test done with help of structured questionnaire to assess the knowledge of care of chest tube drainage in terms of improvement of knowledge. The data obtained were analyzed by using differential and inferential statistics. The data shows that maximum frequency & percentage is 37(74) % for the score of 21-30 which is good score. The average frequency & percentage is 13(26) % for the score of 11-20. The frequency & percentage for the score of 0-10 is 0(0) % which is poor.

KEYWORDS

Chest Tube Drainage, Knowledge

INTRODUCTION

The respiratory system plays a crucial role in delivering oxygen to the cells of our body. The cells of our body require a continuous supply of oxygen, without this oxygen we would die within minutes. Every day we breath about 20,000 time. All of this breathing couldn't happen without help from the respiratory system. At the same time our heart should beat (without fail) 35 million times a year. Every beat should move oxygen enriched blood throughout our system. The function of our heart and lungs is vital for a healthy and productive life. Conditions affecting the thoracic cavity range from acute problems to long term chronic disorders. Many of these disorders are serious and often life threatening. Supporting the structure and function of the heart and lungs is a matter of life and death[1]. **(Ashbaugh DG)**

A chest tube insertion is a surgical procedure in which a hollow, flexible drainage tube is inserted through the side of the chest in to the pleural space in order to drain the pleural cavity of air, blood, pus or lymph. The water seal container connected to the chest tube allows one way movement of air and fluid from the pleural cavity. The chest tube is used to restore the intrapleural pressure and to prevent the collapse of lungs. Chest tube management includes the actions to keep the tube function properly, which is the prime role of nurses while caring of patients with chest tube drainage[3].**(Elsayed,Roberts)**

A study conducted in USA on chest tube drainage found that every year more than 300,000 patients undergo cardiothoracic surgery and requiring placement of atleast one chest tube. Following thoracic surgery, a tension pneumothorax is one of the main causes of cardiac arrest in the initial post operative period. Immediate diagnosis and appropriate treatment in such situation is crucial. Decompression by needle thoracentesis followed by the insertion of a chest tube is indicated in this situation[8].**(Remerand,Francis MD)**

A study conducted in United Kingdom on the prevalence of pneumothrax, estimated that hospital admission rates for combined primary and secondary pneumothorax are reported in UK between 5.8/10, 0000 per year for women and 16.7/10,0000 per year for men. Mortality in the UK due to pneumothorax was 0.62/million/year for women and 1.26/million/year for men between 1991 and 1995. The researcher concluded that chest tube drainage management appears to be an effective treatment modality for pneumothorax[9]. **(Shan SA)**

Spontaneous pneumothorax is a disease with an estimated incidence of 4 to 9 out of 100,000 patients per year and 5:1 male predominance. Mortality rate as high as 16% have been reported.

Here full lung expansion must be achieved and may require additional chest tube[10]. **(Sasse S)**

STATEMENT OF THE PROBLEM

A study to assess the effectiveness of planned teaching programme on care of chest tube drainage in terms of improvement in knowledge among Staff Nurse in selected Hospital of Indore in the year 2014.

OBJECTIVES OF THE STUDY

1. To assess the knowledge regarding care of chest tube drainage in terms of improvement in knowledge among Staff Nurse.
2. To evaluate the effectiveness of planned teaching programme on knowledge regarding care of chest tube drainage in terms of improvement in knowledge among Staff Nurse.
3. To find out an association between pre- test knowledge scores with demographic variables.

ASSUMPTIONS

The study assumed that:

1. The selected staff nurse of hospital in Indore may have some knowledge regarding care of chest tube drainage.
2. Plan teaching programme may help to enhance knowledge regarding care of chest tube drainage.
3. Demographic variable may influence the knowledge regarding care of chest tube drainage.
4. Selected staff nurse knowledge regarding of care of chest tube drainage will help them improvement of knowledge of care of chest tube drainage.

RESEARCH APPROACH

The research approach for this study was quantitative approach.

"A Study to assess the effectiveness of planned teaching programme on care of chest tube drainage in terms of improvement in knowledge among Staff Nurse in selected Hospital of Indore in the year 2014."

RESEARCH DESIGN

A pre-experimental research one group pre-test and post-test design was used to evaluate the effectiveness of the plan teaching programme on care of chest tube drainage in terms of improvement of knowledge among staff nurse in selected hospital in Indore in the year 2014. It provides the best framework for the study.

SETTING OF THE STUDY

The study was conducted Geeta bhavan Hospital & Gokuldas heart Hospital Indore M.P.

POPULATION

The populations of the study are the staff nurse from selected hospital at Indore.

SAMPLE SIZE

The sample size for the study was 50 staff nurse and who were working in hospital

DATA COLLECTION TECHNIQUE AND TOOL

Most important and crucial aspect of any research is data collection which provides answers to the question under study. Tool is selected appropriately in a given situation, depending on the research approach, sample size, laid down criteria etc. the phenomena in which researcher is interested must ultimately be translated on to data that can be analyzed.Thus a structured questionnaire was used for data collection.

DEVELOPMENT OF TOOL

As the study aimed to enhance the knowledge of staff nurse on the topic of care of chest tube drainage ,the data collection instrument were developed through an extensive review of literature which provided adequate content area, information,

consultation, discussion with experts and based on the experienced of the investigation and even personnel experience. The instruments used in this study were three different sections, section A is to assess the demographic Performa and Section B is to assess the knowledge level of staff nurse on care of chest tube drainage .

DESCRIPTION OF THE TOOL

Section A: - Demographic Variable Performa

This instrument used to assess the demographic variable such as educational qualification, age, gender, religion, and clinical experienced.

Section B: - Structured Knowledge Questionnaire on Care of Chest Tube Drainage

This Structured Knowledge Questionnaire is used to assess the knowledge of staff nurse regarding on care of chest tube drainage which consists of 30 questions and each correct response considered one mark.

RELIABILITY OF THE TOOL

The reliability of the instrument was established by administration the tool to 10 staff nurse. The reliability of the structured knowledge questionnaire was obtained by calculating Kr20 Method.

The reliability coefficient was calculated and the value is equal to 0.85, if value of reliability is greater than 0.70 then the test is reliable, as the value of reliability in this test is 0.99, the test is reliable.

PROCEDURE FOR DATA COLLECTION

The final study was conducted from 15th April 2014 to 4th May 2014. Actual data collection was done on 50 staff nurse for meeting the criteria for the study. Samples were collected from Geetabhavan hospital, Indore, M.P. The investigator approached the subjects, informed them regarding the objectives of the study and obtained their consent after assuring the subject about the confidentiality of the data.

PLANS FOR DATA ANALYSIS

Demographic data was analyzed using descriptive statistics i.e. frequency and percentage distribution. Knowledge assessment regarding effectiveness of plan teaching programme by using descriptive statistics (frequency, percentage, mean) and inferential statistics (paired' test).

The analysis of data is organized and presented under following heading:

Section I: Distribution of samples with demographic characteristics.

Section II: Association between socio demographic characteristics and level of pre Test Knowledge.

Section III: Frequency and percentage distribution of pre-test knowledge of staff Nurse on care of chest tube drainage

Section IV: Frequency and percentage distribution of post-test knowledge of staff Nurse on care of chest tube drainage

Section V: Comparison of pre test and post test knowledge scores by paired t- test

- Majority of Staff Nurses 13 (26%) belongs to the age group of 30-35 years, 11 (22%) belongs to the age group of 25-30 years, 10 (20%) belongs to the age group of Above 40 years, 9(18%) belongs to the age group of 35-40 years, 7 (14%) belongs to the age group of below 25 years.
- Majority of Staff Nurses 39 (78%) are Females, 11(22%) are Male.
- Majority of Staff Nurses 34 (68%) are married, 13(26%) are Unmarried and 3(6%) are widow.

- Majority of Staff Nurses 42 (84%) belongs to Hindu Religion and 8 (16%) belongs to Muslim Religion.

- **Section-I:**

Table 1 Table showing frequency and distribution of sample in terms of demographic variables

S.No.	Demographic variables	Frequency	Percentage (%)
1.	**Age in years**		
	Below 25	7	14.00
	25-30	11	22.00
	30-35	13	26.00
	35-40	9	18.00
	Above 40	10	20.00
2.	**Gender**		
	Male	11	22.00
	Female	39	78.00
3.	**Marital status**		
	Married	34	68.00
	Un-married	13	26.00
	Widow/Divorced	3	6.00
4.	**Religion**		
	Hindu	42	84.00
	Christian	0	0.00
	Muslim	8	16.00
	Others	0	0
5.	**Educational status**		
	G.N.M	31	62.00
	B. Sc	16	32.00
	Post Basic B.Sc Nursing	3	6.00
	M.Sc Nursing	0	0.00
6.	**Work experience**		
	1-5 Years	7	14.00
	5-10 Years	16	32.00
	10-15 Years	23	46.00
	15 Years and above	4	8.00
7.	**Attended any workshop/conference**		
	Yes	2	4.00
	No	48	96.00
8.	**Area of Work**		
	General Ward	36	72
	Intensive Care Unit	10	20
	Post Operative Ward	04	08
	Total	50	100

- Majority of Staff Nurses 31(62%) have have completed B.sc Nursing and 3 (6%) have completed Post Basic B.Sc Nursing.
- Majority of Staff Nurses 23(46%) have 10-15 years work experience, 16(32%) have 5-10 years work experience,7 (14%) have 1-5 years work experience and 4(8%) have 15 years above work experience.

completed G.N.M, 16 (32%)

- Majority of Staff Nurses 48(96%) have not attended workshops/ conferences and 2 (4%) have attended workshops/ conferences.
- Majority of Staff Nurses 36 (72%) works in General Wards, 10 (20%) works in Intensive Care Unit and 4(8%) works in Post Operative Wards.

AGE IN YEAR

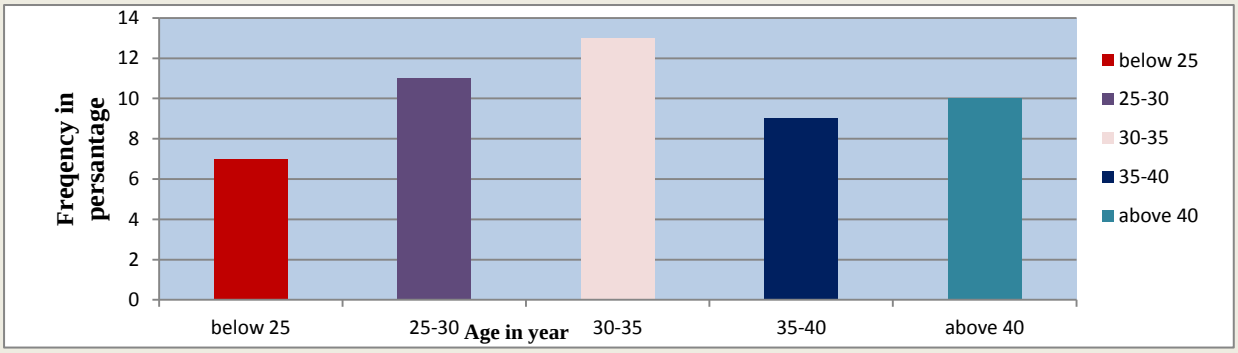


Figure 1 Column diagram showing percentage distribution of respondents by age

GENDER

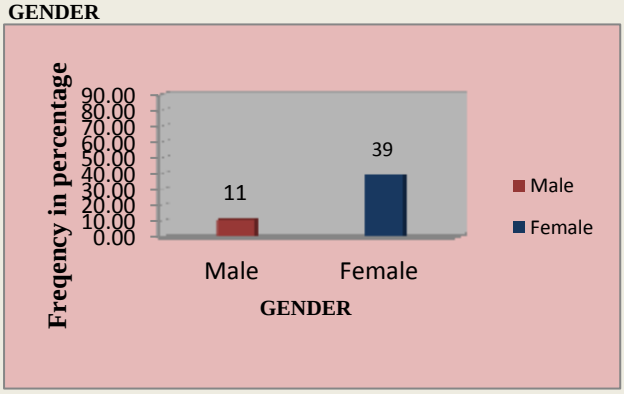


Figure 2 Column diagram showing percentage distribution of respondents by gender

MARITAL STATUS

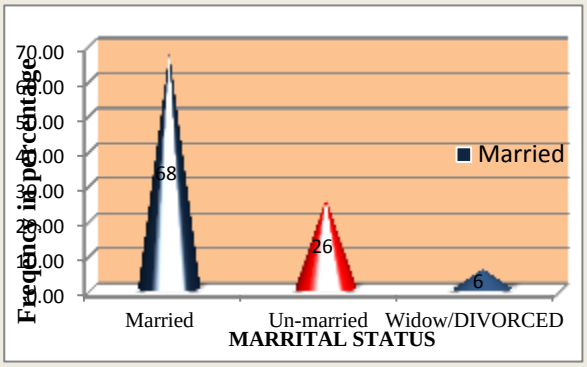
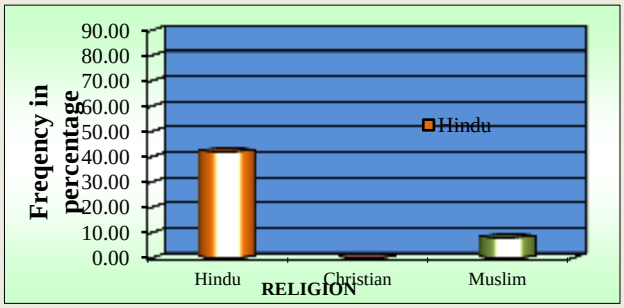


Figure 3 Column diagram showing percentage distribution of respondents by marital status

RELIGION



EDUCATIONAL STATUS

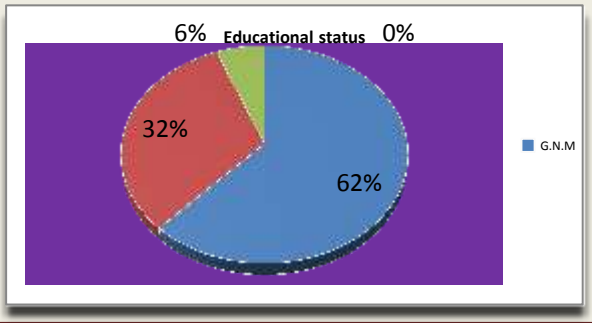


Figure 4 Column diagram showing percentage distribution of respondents by Educational Status

Figure 5 Pie diagram showing percentage distribution of by Religion

WORK EXPERIENCE

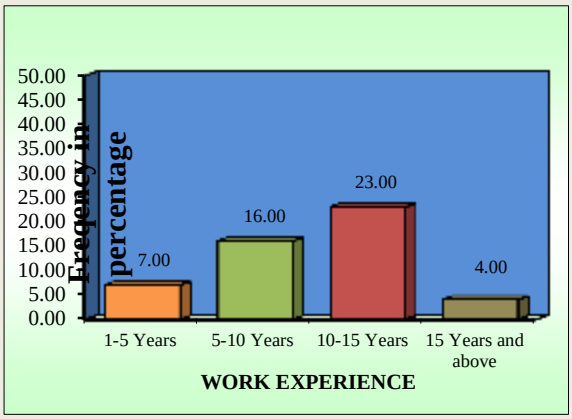


Figure 6 Column diagram showing percentage distribution of respondents by attended any workshop

AREA OF WORKING

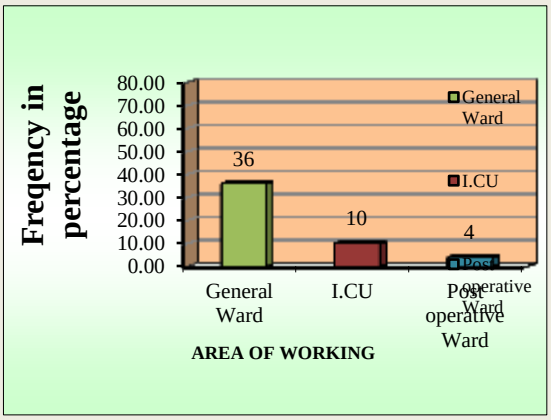


Figure 7 Column diagram showing percentage distribution of respondents by area of work experience.

ATTENDED ANY WORKSHOP

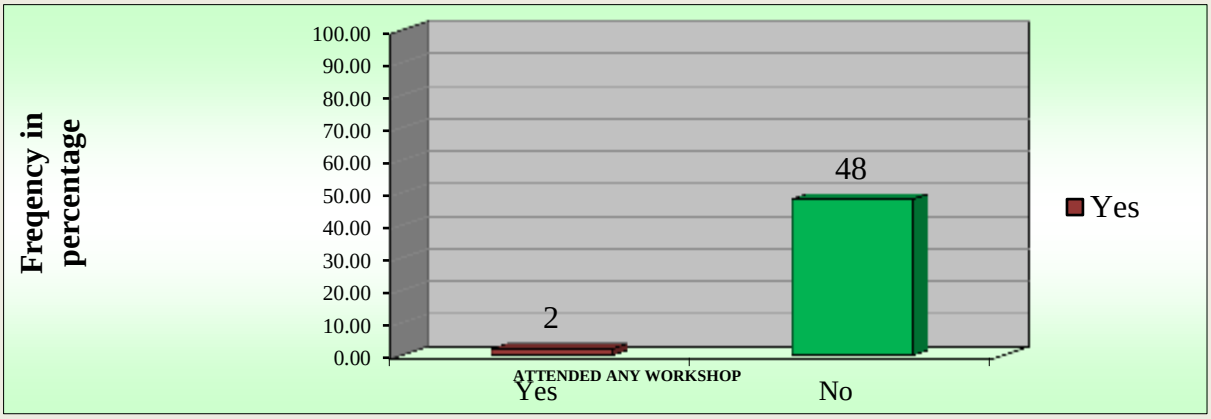


Figure 8 Column diagram showing percentage distribution of respondents by Area of working

SECTION 2

Table 2 Association between socio-demographic characteristics and levels of pre test knowledge

Characteristics	Levels of knowledge			Chi-square	Df	p-value
	Poor	Average	Good			
Age in years						
Below 25	6	1	0	38.6265	8	0.0000*** **significance**
25-30	10	1	0			
30-35	11	2	0			
35-40	2	5	2			
Above 40	0	3	7			
Gender						
Male	11	0	0	10.2122	2	0.0061** **significance**
Female	18	12	9			
Marital status						
Married	3	0	0	12.5939	4	0.0135* **significance**
Un-married	12	1	0			
Widow/Divorced	14	11	9			

Religion						
Hindu	26	8	8	3.5327	2	0.1710 **No significance**
Muslim	3	4	1			
Christian	0	0	0			
Others	0	0	0			
Educational status						
G.N.M	21	8	2	17.1317	44 4	0.0018** **significance**
B. SC Nursing	8	4	4			
Post Basic B.SC Nursing	0	0	3			
M.Sc Nursing	0	0	0			
Work experience						
1-5 Years	7	0	0	19.1307	66 6	0.0040** **significance**
5-10 Years	13	3	0			
10-15 Years	9	7	7			
15 Years and above	0	2	2			
Attended any workshop/conference						
Yes	1	1	0	0.9848	2	0.6112 **No significance**
No	28	11	9			
Area of Working						
General Ward	17	10	9	7.2182	4	0.1248 **No significance**
I.C.U	9	1	0			
Post Operative Ward	3	1	0			
Others	0	0	0			

SECTION 3

Table 3 Frequency and percentage distribution of pre test knowledge of staff Nurse on care of chest tube drainage

LEVEL OF KNOWLEDGE	LEVEL OF SCORE	FREQENCY	%	MEAN	S.D.
GOOD	21-30	34	68%		
AVERAGE	11-20	16	32%		
POOR	0-10	-	-		
				8.88	2.9
TOTAL		**50**	**100%**		

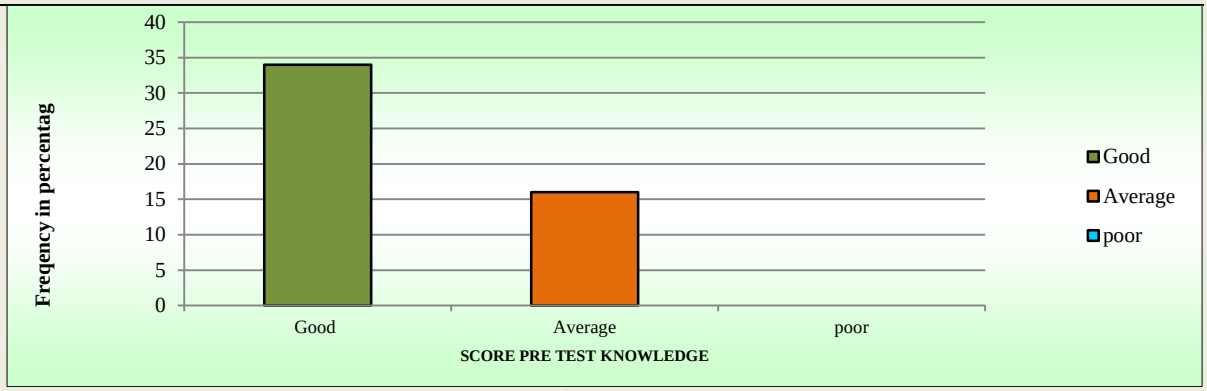


Figure 9 Column diagram showing percentage distribution of respondents by Score pre test knowled

SECTION 4

Table 4 Frequency and percentage distribution of post- test knowledge of staff Nurse on care of chest tube drainage

LEVEL OF KNOWLEDGE	LEVEL OF SCORE	FREQENCY	%	MEAN	S.D.
GOOD	21-30	37	74%		
AVERAGE	11-20	13	26%	80.29	11.24
POOR	0-10	0	0%		
TOTAL		**50**	**100%**		

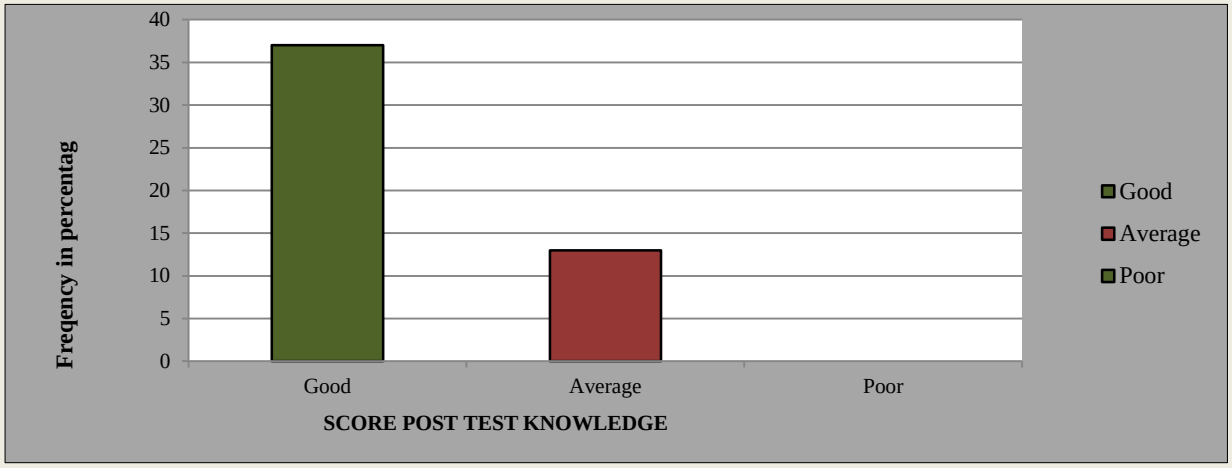


Figure 10 Column diagram showing percentage distribution of respondents by Score post test knowledge

SECTION 5

Table 5 Comparison of pre and post test knowledge scores (%) by paired t-test

Knowledge score	Mean	S.D.	Mean difference	Df	Paired t-value	p-value
Pre test score	8.88	2.9	14.48	49	86.45	0.05***
Post test score	23.36	2.88				

*** Highly significant

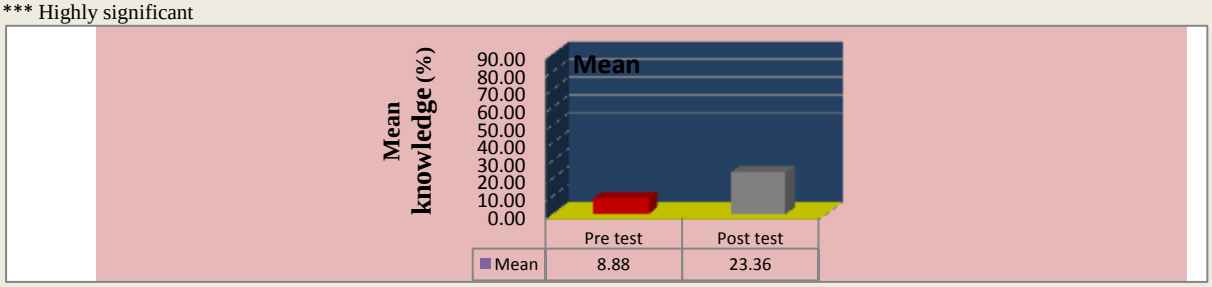


Figure 11: Column diagram showing comparison of pre and post test knowledge scores (%) by paired t-test

The above Table and Graph reveals that the mean in post test knowledge scores (23.36) is higher than pre test knowledge scores (8.88). Hence It shows that Planned Teaching programme on care of chest tube drainage in terms of improvement in knowledge among Staff Nurse is effective &H1: There will be a significant difference between pre- test and post- test level knowledge scores on care of chest tube drainage among Staff Nurse accepted.

CONCLUSION

The main aim of the study was to determine the effectiveness of planned teaching programme on care of chest tube

drainage in terms of improvement in knowledge among Staff Nurse. Information was given to the staff nurses through a planned teaching programme which includes various aspects regarding care of chest tube drainage.

The followings conclusions were drawn on the basis of finding of the study:

- The pre-test findings showed that knowledge of staff nurses regarding on care of chest tube drainage was inadequate.
- The administration of plan teaching programme helped the nurses to understand more regarding on care of chest tube drainage.
- Most of nurses were having adequate level of knowledge after the administration of plan teaching programme.
- The plan teaching programme is proved to be very effective method of transforming information.

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DISSERTATION:

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