



“A STUDY TO ASSESS THE EFFECTIVENESS OF LEARNING PACKAGE REGARDING CARE OF A PATIENT ON MECHANICAL VENTILATOR IN TERMS OF KNOWLEDGE AND PRACTICE AMONG STAFF NURSES OF A SELECTED HOSPITALS IN NAVSARI”

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ABSTRACT

This study evaluates the effectiveness of a structured learning package designed to enhance the knowledge and skills of staff nurses in caring for patients on mechanical ventilators within the intensive care setting. With the backdrop of mechanical ventilation being a critical, non-curative intervention aimed at supporting patients until they remain independent breathing capabilities, the necessity for proficient nursing care becomes paramount. Ventilator-associated pneumonia, a significant risk associated with prolonged mechanical ventilation, underscores the need for stringent adherence to aseptic techniques during endotracheal suctioning. Through a blend of theoretical education and practical demonstrations, the research assesses improvements in the nurse's knowledge and skillsets, as evidenced by higher post-test scores compared to pre-test evaluations. Emphasizing the importance of specialized training for nurses, this study highlights the role of comprehensive educational programs in mitigating complications, facilitating patient recovery, and enhancing the overall quality of care in critical care environments.

Keywords: Mechanical ventilation, Nursing Education, ventilator-associated pneumonia, Aseptic technique, Endotracheal suctioning.

INTRODUCTION:

In modern intensive care management of critical problems, most of the patients need ventilation during this stage of their illness. With the availability of a variety of ventilators and increasing medical expertise, ventilator becoming easier today. In this life saving intervention also cause a serious complication. Hospital-acquired pneumonia is common problem for prevention of complication its need to early diagnosis and management of problem required improvement.it include increase the efforts in advance technological education to make a staff nurses highly aware about the care of patient ventilator and to further their cognitive map so as to get result in the outcome.

Mechanical ventilation is widely used therapeutically for critically ill patients. Endotracheal suctioning is the necessary procedure carried out in the intensive care units. Ventilator-associated pneumonia is the major complication. Hence, it is essential for the nurses to have adequate knowledge of and expertise in performing this procedure safely and effectively to minimize these hazards. In India ventilator associated pneumonia rates among people who are mechanically ventilated is the ICU with 37.5% infection. in Gujarat there were 14.8% patient were affected with VAP. Worldwide there are 55%. Due to ventilatory events also condition of sepsis will be develop, in India there were 15 to 30 % of sepsis cases, Gujarat there were 7% cases and in worldwide there were 62.9% cases develop and it also included nosocomial and ventilator associated infection. Acute respiratory distress condition will be develop due to sepsis. in India there were 11.4% of cases of ARDS. In Gujarat there were 10.9% cases of ARDS due to sepsis and ventilator associated events. The scientific knowledge on which nurses base their clinical practice is often lacking. Nurses' lack of adherence to aseptic technique may be a factor in transmitting infection or cross infection. When an infection can be prevented by ordinary and reasonable care, nurses must use such care. Adequate knowledge is require for care of patient.

OBJECTIVE OF THE STUDY

1. To assess the knowledge of staff nurses regarding the care of a Patient on Mechanical Ventilator.
2. To assess the practice of staff nurses regarding the care of a Patient on Mechanical Ventilator.
3. To determine the effectiveness of the learning Package regarding the care of a Patient on Mechanical Ventilator.
4. To find out the association between Pre-test knowledge and Practice with selected Demographic Variables.

HYPOTHESES

The significance of hypothesis will be at 0.05 level.

H₁: The mean Post-test knowledge score of staff nurses regarding the care of a Patient on Mechanical ventilator is significantly higher than the mean Pre-test knowledge score.

H₂: The mean Post-test Practice score of staff nurses regarding care of a Patient on Mechanical ventilator is significantly higher than the mean Pre-test Practice score.

H₃: There is significant association between knowledge, Practice with selected Demographic variables.

METHODOLOGY

A Experimental study, structured knowledge questionnaire and structured observational checklist approach was adopted for this study. A total of 40 samples were selected by Non Probability sampling technique in that Purposive sampling methods. Data were collected by using structured knowledge questionnaire and structured observational checklist. Impact of knowledge to staff nurses by providing teaching learning activity.

1. ANALYSIS AND INTERPRETATION OF SELECTED DEMOGRAPHIC VARIABLES

Table 1 Frequency and Percentage wise Distribution of Sample based on Selected Demographic variables.

(n = 40)

SR.NO	DEMOGRAPHIC VARIABLES	FREQUENCY (F)	PERCENTAGE (%)
1.	AGE		
	20 – 30 Year	36	90 %
	31 – 40 Year	4	10 %
	41-58 Year	0	0%
	>58 Year	0	0%
2.	PROFESSIONAL QUALIFICATION		
	G.N.M	32	80 %
	B.Sc Nursing M.Sc. Nursing	8	20 %
		0	0 %
3.	TOTAL WORKING EXPERIENCE IN HOSPITAL		
	6 month-1 year	13	32.5 %
	>1 year -2 year	22	55 %
	>2 year-3 year More than 3 year	2	5 %
		3	7.5 %
4.	EXPOSURE OF TRAINING PROGRAMME FOR CARE IN VENTILATOR PATIENT		
	Yes No	8	20 %
		32	80 %

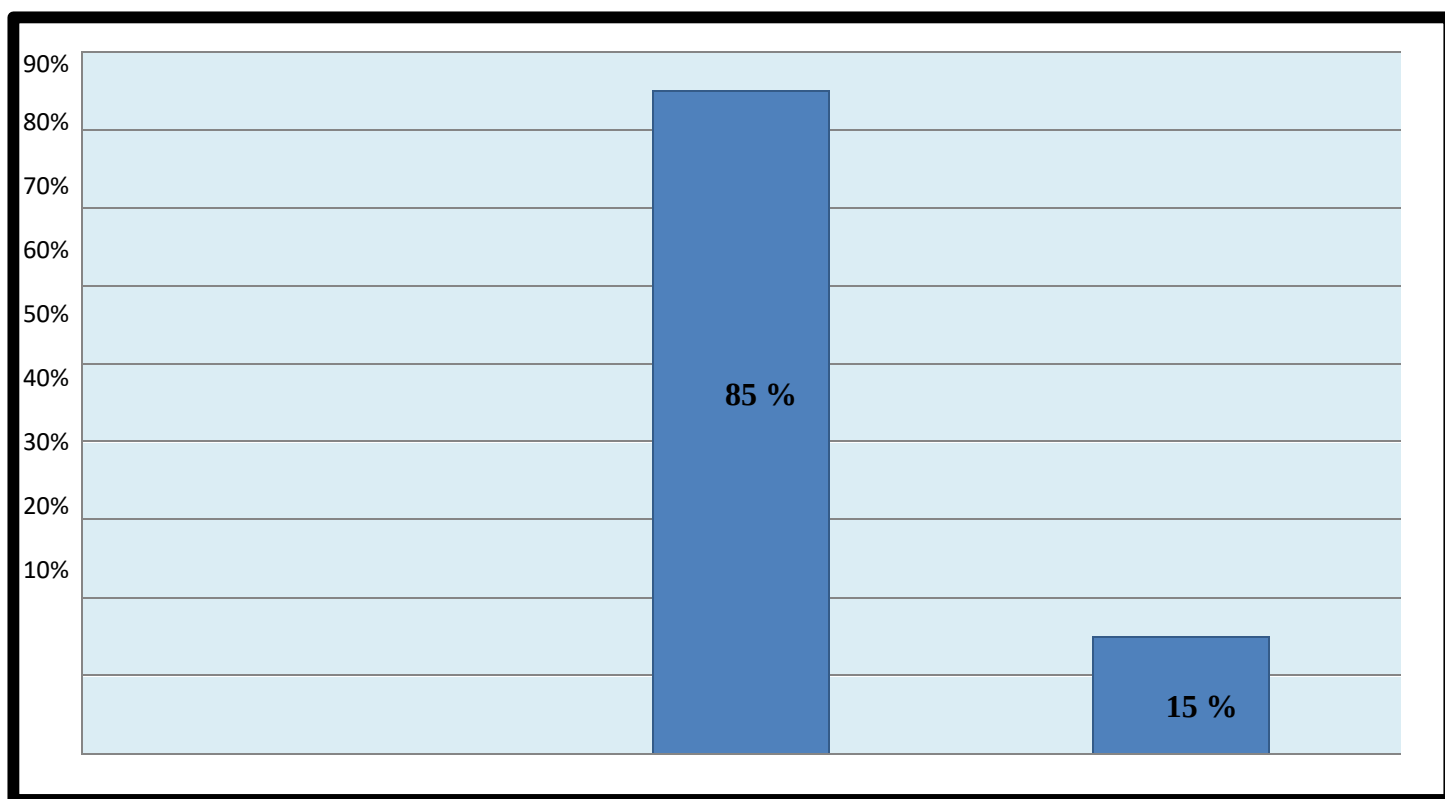
This table 1 depict 90% staff nurses was in the age group of between 20 to 30 years, 80% staff nurses was qualified with G.N.M, 80 % staff had no exposure of training Programme regarding care of ventilator patient,55% staff had experience in the hospital between 1to 2 year.

2. ANALYSIS AND INTERPRETATION OF THE DATA RELATED TO THE PRE-TEST AND POST-TEST KNOWLEDGE

Table 2 Frequency and Percentage Wise Distribution of Pre-Test, Post-Test Knowledge Score. (n = 40)

CATEGORY	PRE TEST KNOWLEDGE		POST TEST KNOWLEDGE	
	Frequency	Percentage	Frequency	Percentage
Poor	0	0 %	0	0 %
Average	34	85 %	0	0 %
Good	6	15 %	40	100 %

This table 2 depict 85 % staff nurses got average knowledge in the pre-test and after after administration of learning Package regarding care of Patient on mechanical ventilator Post-tst knowledge was improved 100 % staff nurses got good knowledge in post test.



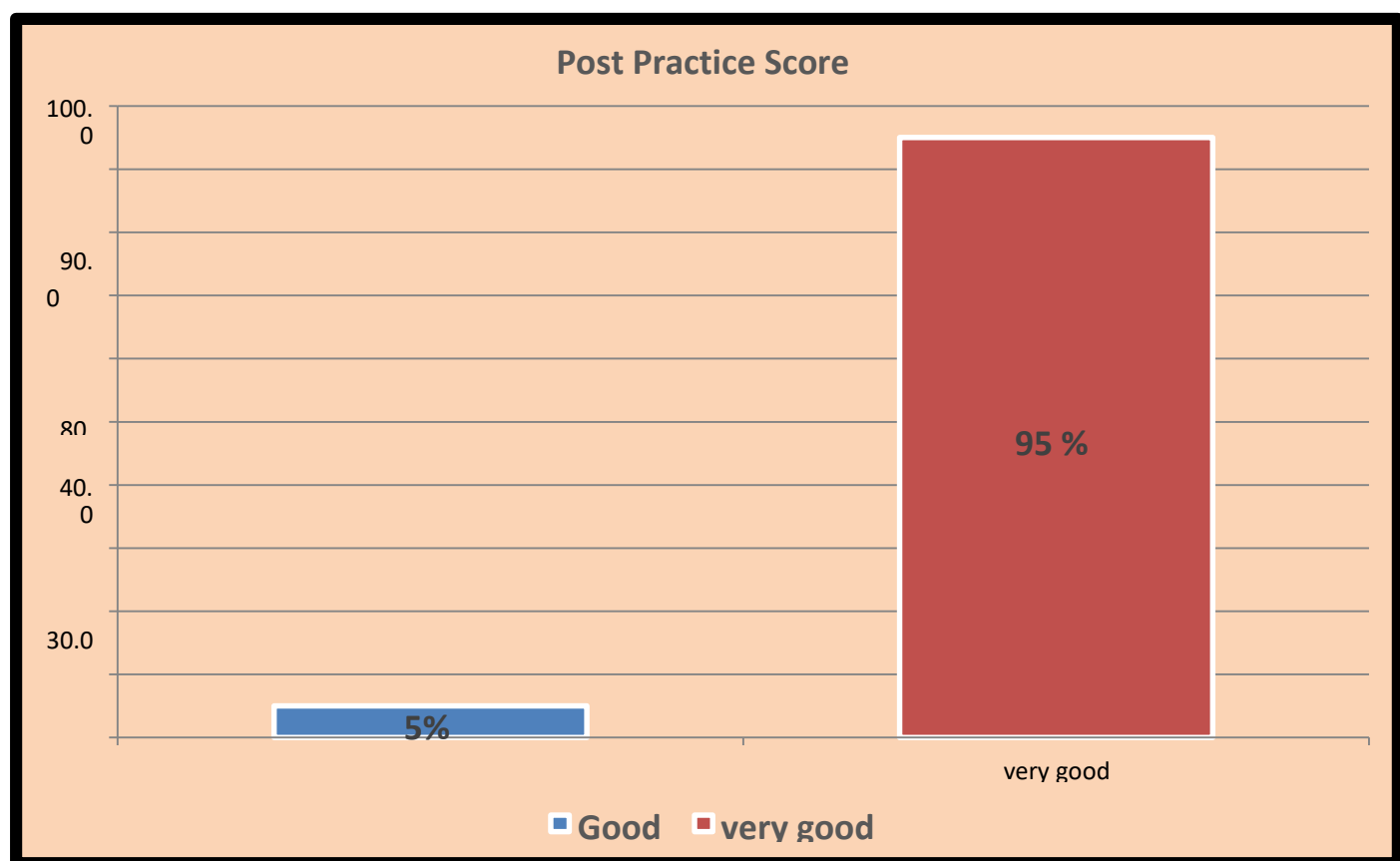
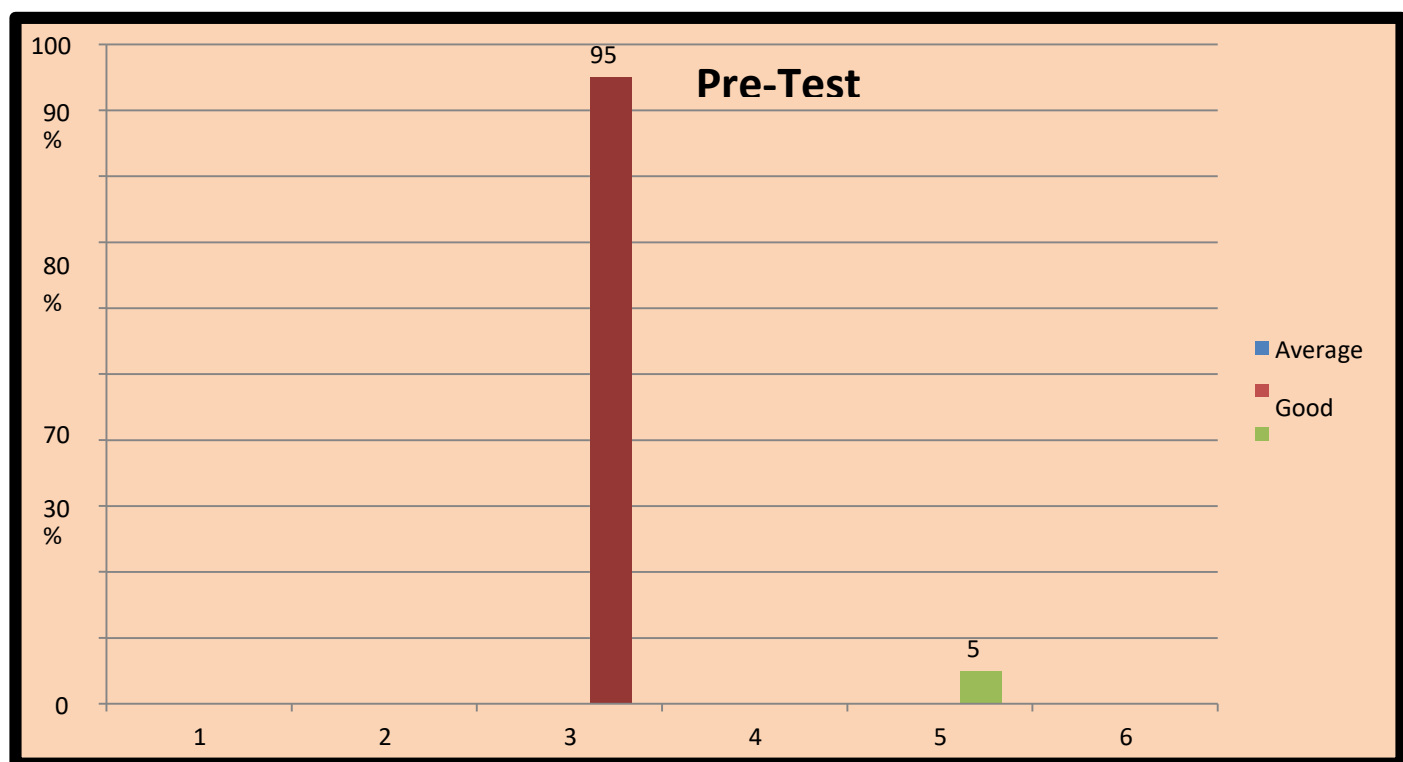
Graph 1 Frequency and Percentage Wise Distribution of Pre-Test Knowledge Regarding Care of Patient on Mechanical Ventilator.

3.ANALYSIS AND INTERPRETATION OF THE DATA OF PRE-TEST AND POST-TEST PRACTICE.

Table 3 Frequency and Percentage wise Distribution of Pre-test, Post-test Knowledge Score. (n = 40)

CATEGORY	PRE TEST PRACTICE		POST TEST PRACTICE	
	Frequency	Percentage	Frequency	Percentage
Average	0	0 %	0	0 %
Good	38	95 %	2	5 %
Very good	2	5 %	38	95 %

This table 3 depict 95.5 % staff nurses got good Practice in Pre-test and after after administration of learning Package regarding care of Patient on Mechanical ventilator Post-test Practice was improved 95 % staff nurses were very good Practice in the Post-test.



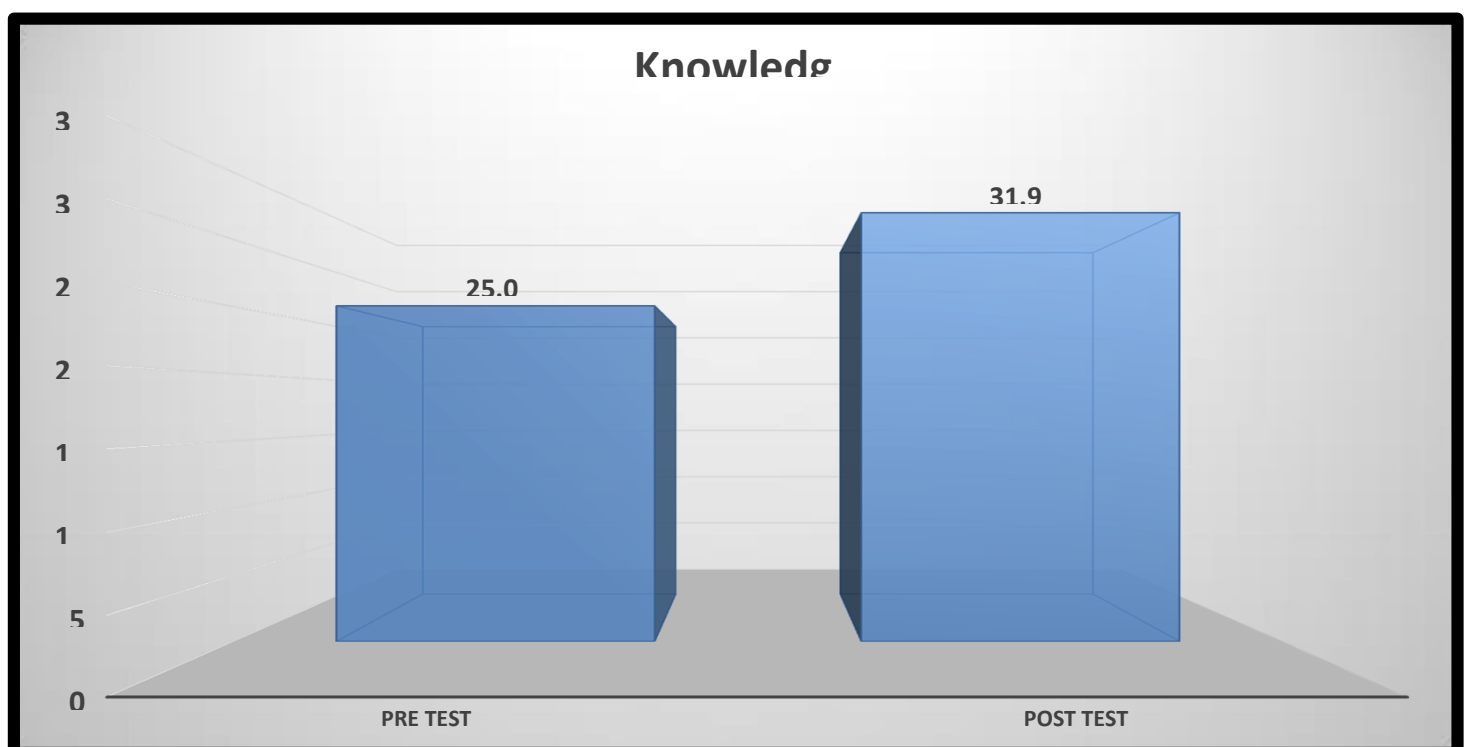
4. EFFECTIVENESS BETWEEN PRE-TEST, POST-TEST**KNOWLEDGE AND PRACTICE**

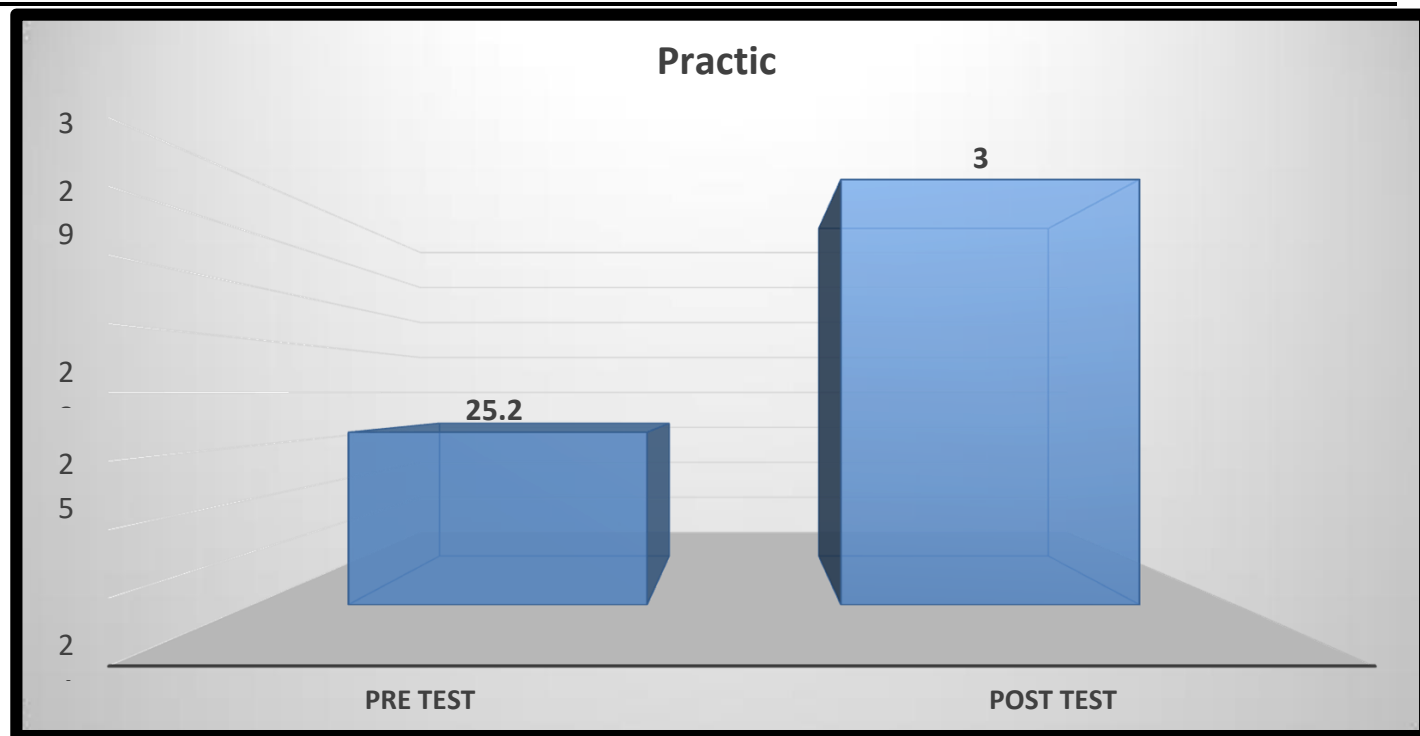
(n = 40)

	PRE TEST		POST TEST		T TEST	DF	TABLE VALUE	SIG/NON SIG
	MEAN	SD	MEAN	SD				
Knowledge	25.05	2.26	31.98	1.87	15.515	39	2.02	Sig
Practice	25.25	1.46	30	1.5	16.237	39	2.02	Sig

Table shows there is a significance relation between pre-test, post-test knowledge score and practice score. Mean pre-test knowledge was 25.05, and standard deviation was 2.26, mean pre-test for practice was 25.25 and standard deviation was 1.46. Mean Post-test for knowledge was 31.98, mean post-test of practice was 30, and standard deviation was 1.5.

This table 4 depict, knowledge and practice of staff nurses regarding care of patient on mechanical ventilator was improved after administration of learning package and demonstration.





5. ASSOCIATION BETWEEN PRE-TEST, KNOWLEDGE WITH SELECTED DEMOGRAPHIC VARIABLES (n = 40)

DEMOGRAPHIC VARIABLE		PRE TEST KNOWLEDGE SCORE						
		Poor	Average	Good	Chi Square	df	Table Value	Sig/Non Sig
Age	20 -30 Year	0	31	5	0.34	6	12.59	NS
	31 -40 Year	0	3	1				
	41-58 year	0	0	0				
	>58	0	0	0				
Professional qualification	G.N.M	0	28	4	0.78	4	9.49	NS
	B.sc Nursing	0	6	2				
	M.sc.Nursing	0	0	0				
Total working experience in hospital.	6 mon –1year	0	11	2	1.04	6	12.59	NS
	1-2 years	0	19	3				
	2-3 year	0	2	0				

	>3years	0	2	1				
Have you had exposure to any training programme in caring for client on mechanical ventilator?	Yes No	0	8	0	1.76	2	5.99	NS
		0	26	6				

Table 5 shows the association of the pre-test knowledge score with Demographic variables of sample such as age, professional qualification, total working experience and exposure of training programme regarding care of patient on mechanical ventilator. For age group with knowledge score, the calculated value of chi-square $0.349(x^2)$ was less than 2.59, the table value of chi square (x^2) 6 at the degree of freedom and 0.05 level of significance. There was no significance relation between age and knowledge. The professional qualification with knowledge score, the calculated value of chi-square $0.784 (x^2)$ was less than 9.49, the table value of chi square (x^2) 4 at the degree of freedom and 0.05 level of significance. There was no significance relation between professional qualification and knowledge. The working experience in hospital of staff nurse with knowledge score, the calculated value of chi-square (x^2) 1.048 was less than 12.59 , the table value chi square (x^2) 6 at the degree of freedom and 0.05 level of significance. There was no significance relation between working experience and knowledge. The exposure of training programme in care of patient on mechanical ventilator of staff nurse with knowledge score, the calculated value of chi-square (x^2) 1.765 was less than 5.99, the table value chi square (x^2) 2 at the degree of freedom and 0.05 level of significance, There was no significance relation between exposure of training programme and knowledge. There was no significant relation between selected demographic variables and knowledge.

6. ASSOCIATION BETWEEN PRE-TEST, PRACTICE WITH SELECTED DEMOGRAPHIC VARIABLES (n=40)

DEMOGRAPHIC VARIABLE		PRE TEST PRACTICE SCORE						
		Average	Good	Very good	Chi Square	df	Table Value	Sig/Non Sig
Age	20 -30 Year	0	34	2	0.033	6	12.59	NS
	31 -40 Year	0	4	0				
	41-58 year	0	0	0				
	>58	0	0	0				
Professional qualification	G.N.M	0	31	1	1.183	4	9.49	NS
	B.sc Nursing	0	7	1				
	M.sc.Nursing	0	0	0				
Total working experience in hospital.	6 mon –1year	0	12	1	0.220	6	12.59	NS
	1-2 years	0	21	1				
	2-3 year	0	2	0				
	>3years	0	3	0				
Have you had exposure to any training programme in caring for client on mechanical ventilator?	Yes No	0	7	1	1.184	2	5.99	NS
		0	31	1				

Table shows the association of the Pre-test Practice score with Demographic variables of sample such as age, Professional qualification, total working experience and exposure of training programme regarding care of Patient on mechanical ventilator. For age group with practice score, the calculated value of chi-square $0.033(x^2)$ was less than 12.59, the table value of chi square (x^2) 6 at the degree of freedom and 0.05 level of significance. There was no significance relation between age and Practice. The professional qualification with Practice score, the calculated value of chi-square $1.184(x^2)$ was less than 9.49, the table value of chi square (x^2) 4 at the degree of freedom and 0.05 level of significance. There was no significance relation between Professional qualification and Practice. The working experience in hospital of staff nurse with Practice score, the calculated value of chi-square $0.220(x^2)$ was less than 12.59, the table value chi square (x^2) 6 at the degree of freedom and 0.05 level of significance. There was no significance relation between working experience and Practice. The exposure of training programme in care of patient on mechanical ventilator of staff nurse with practice score, the calculated value of chi-square (x^2) 1.184 was less than 5.94, the table value chi square (x^2) 2 at the degree of freedom and 0.05 level of significance. There was no significance relation between exposure of training programme and Practice. There was no significant relation between selected demographic variable and Practice.

DISCUSSION

The Present study assess the knowledge and Practice of staff nurses regarding care of Patient on mechanical ventilator of a selected Hospital The analysis of study revealed that the mean knowledge score and mean Practice score was favorable.

FINDINGS OF THE STUDY

The data were analysed and interpreted in terms of objective of the study. Interstitial statistic were utilized for the data analysis.

After analysis of the data the major findings were as follows:

1. Findings related to selected Demographic Variables of Samples:

As regards 90% staff nurses was in the age group of between 20 to 30 years, 80% staff nurses was qualified with G.N.M, 80 % staff had no exposure of training programme regarding care of ventilator patient, 55% staff had experience in the hospital between 1 to 2 year.

2. Findings related to knowledge and Practice level of Samples on care of Patient on Mechanical Ventilator.

Result was effective, knowledge and practice of staff nurses regarding care of patient on mechanical ventilator was improved after administration of learning package and demonstration.

3. Association between the pre-test knowledge and practice score with selected demographic variables:

The findings of the study revealed that there is no significant association between pre- test knowledge and practice score with selected demographic variables.

IMPLICATIONS

Health is an individual responsibility. To help patient to regain the health after disease is a responsibility of the healthcare members. The present study is making teaching to the staff nurses in terms of knowledge and practice regarding care of patient on mechanical ventilator and finding it an good in knowledge and practices. The findings of the study have several implications for nursing education, nursing administrator, nursing research and professional organization.

Nursing Practice:

The expended role of nurse emphasis those activities which promotes the health and prevent illness. The finding study can be implemented to assess the knowledge and practice of staff nurses regarding care of patient on mechanical ventilator. Practice can be improve through demonstration and lab procedure. Encourage staff nurses to follow the procedure regarding care of patient on mechanical ventilator for improve their practices and prevent complication regarding mechanical ventilator.

Nursing Education:

In service education programme, Planned teaching Programme, Lecture method should be conducted for nurses to improve their knowledge. Nurse educator can encourage to nursing students to make a new ideas and enhance students to think comprehensively in planning and intervention regarding effective care for preventing ventilator associated complication. This study helps nurse educator to plan classes and teach the students about care of patient on mechanical ventilator

Nursing Research:

This study motivates nursing personnel to do further studies related to this field. This study gives way for further study. This study was help the researcher to formulate new methods for knowledge and practice regarding care of patient on mechanical ventilator.

Nursing Administration:

The findings of the study reveal that there was a need to conduct an ongoing in service education program for the nursing staff regarding care of patient on mechanical ventilator, who are working in Hospital.

RECOMMENDATIONS

The following recommendations are made on the basis of the finding of present study.

similar study can be replicated using a large sample so the findings can be generalised for a large population.

- A study can be conducted by using teaching strategies regarding care of patient on mechanical ventilator.
- A similar study can be conducted among the group of staff nurses providing nursing care to the patient on mechanical ventilator.
- A survey can be conducted to assess knowledge and practice of staff nurse regarding care of patient on ventilator.

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