

A Study to Assess the Effectiveness of Planned Teaching Programme on Knowledge and Practice Regarding the Suctioning Techniques among ICU Staff Nurses in Apollo Speciality Hospitals, Nellore - Andhra Pradesh, India

Moses Cilumpalli¹, Prathima Boddu², Revathi Thotti³, Raja M E⁴

¹B.Sc. Nursing, Assistant Nursing Superintendent, Apollo Speciality Hospitals, Nellore, Andhra Pradesh – 524003- India

²M.Sc. Nursing, Nurse Educator, Apollo Speciality Hospitals, Nellore, Andhra Pradesh – 524003 - India

³M.Sc. Nursing, Clinical Instructor, Apollo Speciality Hospitals, Nellore, Andhra Pradesh – 524003 - India

⁴MBA- Hospital Management, M.S (Couns & Psy), Ph. D, Quality Head, Apollo Speciality Hospitals, Nellore, Andhra Pradesh - 524003- India

Abstract: *Background of the study:* Tracheal suctioning is an essential aspect of effective airway management. It is imperative that nurses are aware of the risks and are able to practice according to current research recommendations. Making accurate and timely judgments based on knowledge is an essential skill in critical care nursing practice. **Objectives:** (1) To assess the Pre-Test knowledge and Practice of the nurses regarding endotracheal suctioning to administer the STP through Video (2) To assess the Post-Test knowledge and Practice of the nurses regarding endotracheal suctioning. **Method:** 40 Neuro Nurses include permanent and temporary were selected from medical ICU in Apollo Specialty Hospitals, Nellore, Andhra Pradesh, India. Convenient sampling technique was used for selecting sample. Total period of study was from 1st October to December 31st 2021. An observational checklist was maintained in order to record the steps of the procedure and the knowledge assessed by using questionnaire. **Result:** The teaching program was effective in enhancing knowledge and practice as mean value of post-test (10.6) and (13.5) was higher than pre-test mean value (5.2) and (6.3) and the calculated “t” test value [13.4, 12.2] of knowledge and practice score was more than the table value [1.68] at 0.05 level of significance. **Conclusion:** Present study shows that it is helpful to the staff for gaining knowledge and practice and in turn improving the patients care. The quality of their care enhances the patient outcome. The proper care and compliance with the standard care of the airways reduce the duration of hospital stay, lower costs, reduce risk and complications and in turn reduce ALOS, also reduce stress and improve the quality of life of the patient and his family.

1. Introduction

Endotracheal suctioning (ETS) is one of the most common procedures performed in patients with artificial airways. It is a component of bronchial hygiene therapy and mechanical ventilation that involves the mechanical aspiration of pulmonary secretions from a patient’s artificial airway to prevent its obstruction the procedure includes patient preparation, the suctioning event, post procedure care. Tracheobronchial suctioning using the closed suctioning system has physiological benefits for critically ill patients. Because micro aspiration of secretions is a risk factor for VAP, assessment of practices related to oral suctioning, oral care, and management of endotracheal tube is important.

2. Objectives of the study

To assess the Pre-Test knowledge of the nurses regarding Suctioning Procedure. 2.To Assess the Post Test knowledge of the nurses regarding Suctioning Procedure.3. To assess the effectiveness of Pre and Post Test knowledge of the nurses regarding Suctioning Procedure.4. To assess the Pre-Test Practice of Suctioning among staff nurses. 5.To assess the Post-Test Practice of Suctioning among staff nurses.

6.To assess the effectiveness of Pre and Post Test practice of the nurses regarding Suctioning Procedure.

3. Need of the study

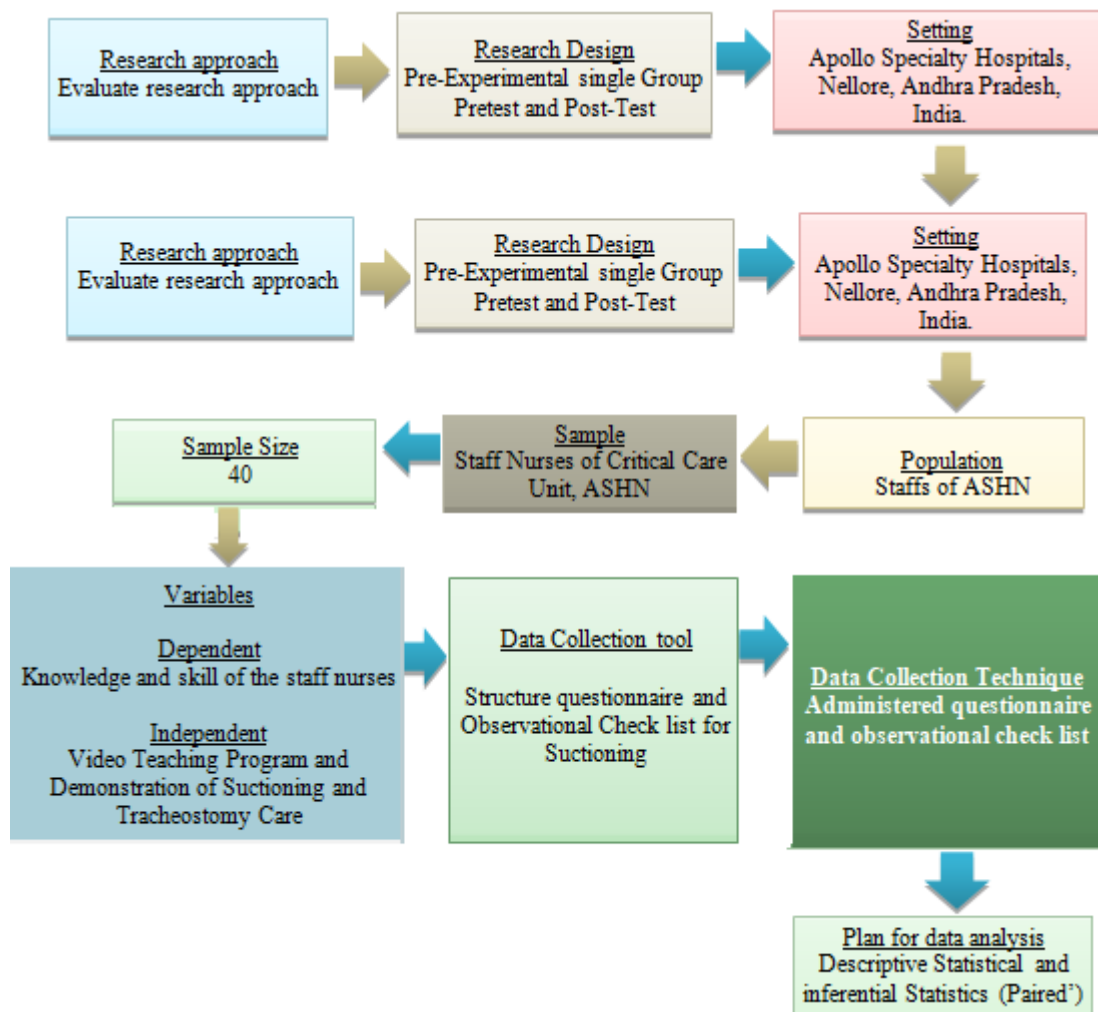
Mir Bilques Qadir 2015, findings of the study revealed that knowledge level of staff nurses regarding endotracheal suctioning was inadequate and thus there arises a great need to improve this knowledge. The pre-test knowledge scores of staff nurses showed the overall mean score of 24.10 ± 6.503 with median and range of 23.00 and 26 respectively. Majority 49(81.67%) of the subjects had inadequate knowledge level and 11(18.33%) of the subjects had adequate knowledge level and none had highly adequate knowledge regarding tracheostomy care. It also revealed the overall mean score of 39.47 ± 6.606 with median and range of 39.50 and 25 respectively. The mean difference was 15.37. The mean post-test knowledge score was significantly higher ($p < 0.001$) than the mean pre-test knowledge score which shows that the knowledge of staff nurses regarding Endotracheal suctioning improved after intervention. **Hypothesis (H1):** There is a significant difference between pre-test and post- test knowledge score among staff nurses at 0.05 level of significance. **Hypothesis (H2):** There is a

significant difference between pre-test and post-test practice score among staff nurses at 0.05 level of significance.

4. Materials and Methods



Figure 1: Depicts the blue print of research design



Study Design: Pre experimental single group pre-test post-test design

Study Location: Apollo Speciality Hospitals, Nellore, Andhra Pradesh, India.

Study Duration: 1stOctober to December 31st 2021

Sample Size: 40

Subjects & Selection Methods: 40 staff Nurses, working in critical care unit selected by non-probability convenience sampling technique.

Tool consists of three sections:

Section 1: Demographic Performa includes 3 items to collect information on subject’s demographic characteristics.

It includes age, qualification, and years of experience. Data was collected by investigator through self-reported questionnaire (pen and pencil method).

Selection 2: Structured knowledge questionnaire consists of 10 multiple choice questions to assess the knowledge regarding Endo tracheal Suctioning. Data was collected by investigator through self-reported questionnaire (Pen and pencil method).

Percentage	Knowledge Level
<40%	Poor
(40-59)%	Average
(60-79)%	Good
>80%	Excellent

Section 3: Observation checklist on Endotracheal suctioning consists of 21 criteria to assess the

practice of staff nurse, observed by the investigator. The one score is for each correct step and no score is awarded for missed step.

Percentage	Practice Level
<50%	Poor
(51-79)%	Good
>80%	Excellent

Procedure methodology:

The final study was conducted from 01.10.2021 to 1.12.2021 at Apollo Specialty Hospital, Nellore, Andhra Pradesh, India, after getting Ethical clearance. Data collection time was 3month.

After self-introduction revealed consent was taken from a participant which was counter signed by investigators. The data was collected by questionnaire (demographic profile), knowledge questionnaire (tool 2) from the staff through paper pencil method and practices (tool 3) was observed by observation checklist.

After that teaching program and demonstration on Endo Tracheal Suctioning was administered to the participants on the day of pre- test.

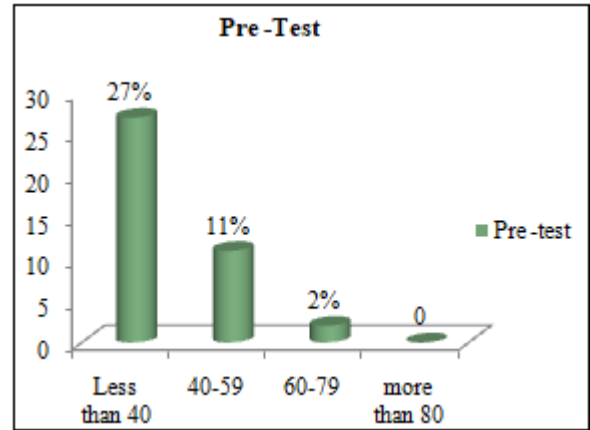
Then after 14 days, post -test, tool 2 and tool 3 was re administered for assessing the knowledge level and practices of staff evaluating the effect of intervention.

Then collected data were tabulated, analyzed, statistically calculated.

Table 1: Description of demographic profile of staff nurse, N=40

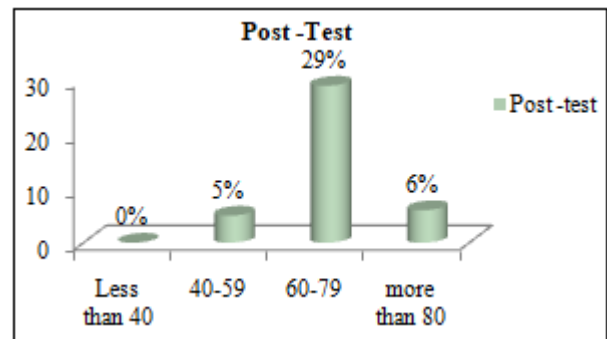
	Attributes	Frequency	Percentage (%)
1	Staff (Age in years)		
	20-24years	30	75%
	25-29years	8	20%
	30- 34years	2	5%
	35 years and above	-	Nil
2	Qualification		
	GNM	18	45%
	B.Sc / Post Basic	22	55%
	M.Sc	-	Nil
3	Critical care experience		
	1-6months	4	10%
	7-12months	22	55%
	13-18months	9	22.50%
	More than 18months	5	12.50%

Table 1, depicts that most of the staffs (75%) belonged to 20-24 years of age group and 55% staffs had B.Sc. degree in Nursing and 7 to 12 months of experience in critical care.



Section II A: Pretest knowledge score of staff nurses.

Figure 3: Bar diagram demonstrate frequency and percentage distribution of knowledge score among staff nurses before and after administration of teaching program.



Section II A: Post -test knowledge score of staff nurses.

Figure 3: Bar diagram demonstrate frequency and percentage distribution of knowledge score among staff nurses before and after administration of teaching program.

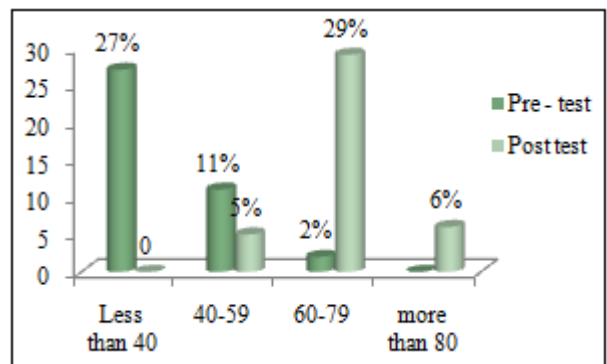


Figure 4: describe the improvement of knowledge score in post test

It also highlighted that 67% staffs had poor knowledge regarding Endotracheal suctioning before administration of teaching program and 72% staffs had good knowledge in posttest and this above diagram showed that frequency distribution between pretest and posttest knowledge score. While assessing the Practice of the nurses it was found that there was remarkable improvement in the practice score after receiving training.

Section II B Pretest practice score of staff nurses

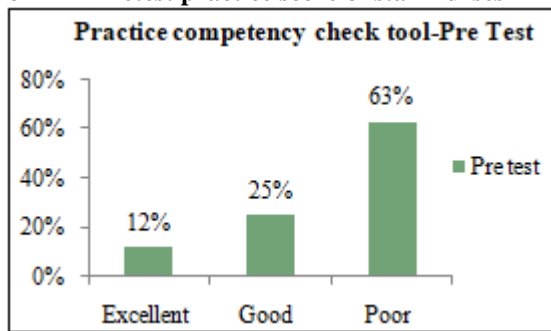


Figure 5: Bar diagram depicts the percentage distribution between pretest and posttest of practice score.

Section II B Post - test practice score of staff nurses

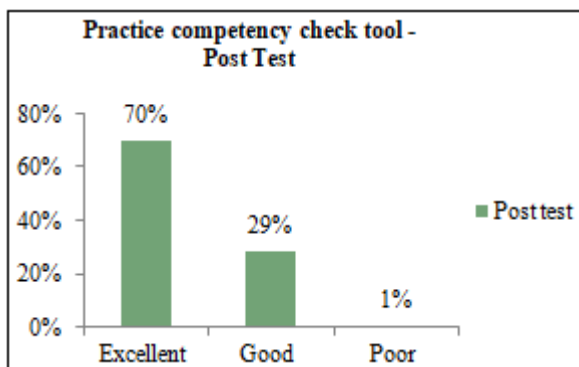


Figure 5: Bar diagram depicts the percentage distribution between pre-test and post-test of practice score.

Section III

Table 2: Mean, Mean difference, SD and t value of knowledge scores in target group before and after administration of teaching program, N=40

Observation	Mean	Mean difference	SD	't'
Pre-Test	5.2	5.4	2	13.4*
Post-Test	10.6			

't' df(39)=1.68, P<0.05

*Significant

As calculated 't' value is greater than table value, so the research hypothesis is accepted and null hypothesis is rejected.

Table 3: Mean, Mean difference, SD and t value of Practice scores in target group before and after administration of teaching program, N=40

Observation	Mean	Mean difference	SD	't'
Pre-Test	6.3	7.2	3.06	12.2*
Post-Test	13.5			

't' df(39)=1.68, P<0.05*Significant

As calculated 't' value is greater than table value, so the research hypothesis is accepted and null hypothesis is rejected. The teaching program was effective in enhancing knowledge and practice as mean value of post-test (10.6) and (13.5) was higher than pre-test mean value (5.2) and (6.3) and the calculated "t" test value [13.4, 12.2] of knowledge and practice score was more than the table value [1.68] at 0.05 level of significance.

So, the planned teaching program on endotracheal suctioning was effective in enhancing knowledge and practice of the staff nurses.

5. Discussion

In this study 75% staffs belonged to the age group of 20 to 24 years, 55% staffs had done GNM course and had critical care experience of 7 to 12 months and 12.5% staffs had more than 18 months critical care experience

Sharma B investigated, A Quasi-Experimental Study to Assess the Effect of Video Assisted Teaching Module Regarding Endotracheal suctioning on Knowledge and Skill of Staff Nurses at Vinayaka Mission Hospital, Salem, Tamil Nādu. Their result showed that most of the staff nurses (86%) were in the age group of 21-25 years, 68% were females, majority (78%) had GNM qualification, 60% were working in ICU, majority (58%) had less than one year of experience, 62% had previous exposure to Endotracheal suctioning through books, 72% had attended in-service education on tracheostomy care⁸.

This study highlighted that in pretest 67% of the staffs had poor knowledge and very few staff had average and good knowledge and none of them had excellent knowledge.

And in posttest 72% staffs had done good knowledge score, 15% had done excellent knowledge score and no one had poor knowledge.

Sharma S who investigated on Exploration of Knowledge and Practices of Nurses Working in Selected Tertiary Care Hospitals in Uttarakhand State. They revealed that 58.76% staffs had weaker knowledge regarding tracheostomy care¹³.

Present study emphasized that Mean difference of pretest and posttest knowledge score was 5.4. It was found to be statistically significant as evident from calculated 't' value 13.4 at 0.05 level of significance. According to this study findings teaching program on Endotracheal suctioning was effective in increasing knowledge and skill of staff nurses as evident by 't' values.

6. Conclusion

Present study shows that it is helpful to the staff for gaining knowledge and practice and in turn improving the patients care. The quality of their care enhances the patient outcome. The proper care and compliance with the standard care of the airways, reduce the duration of hospital stay, lower costs, reduce risk and complications and in turn reduce ALOS, also reduce stress and improve the quality of life of the patient and his family.

References

[1] Cheung N H, Napolitano L M. Tracheostomy: Epidemiology, Indications, Timing, Technique, and Outcomes. National Library of Medicine, NIH. June, 2014: 59(6):895-919
 [2] Zhu H et al. Improving the quality of tracheostomy

care.ERS, Breathe.2014:10:286-294.
<http://www.ncbi.nlm.nih.gov/PubMed/vol-3/issue-implementation>.

- [3] Dhaliwal K M, Choudhury R, Sharma P. A Descriptive Study to assess the knowledge and skills on Endotracheal suctioning among staff nurses working in selected hospitals of district Mohali, Punjab. [Mohali (Punjab)]; Mata Sahib Kaur College of Nursing;2018.
- [4] Kawale M et al. A prospective study of complications of tracheostomy and management in tertiary care hospital in rural area. [Yavatmal (Maharashtra)]; Shri V. N. Government Medicalcollege;2017.
- [5] K Padma et al. A study to assess the knowledge regarding Endotracheal suctioning among staff nurses and nursing students in narayana medical college and hospital, Nellore. [Nellore (Andhrapradesh)]; Narayana College of Nursing;2016