

# Effectiveness of Video Assisted Programme (VAP) On Knowledge and Practice Regarding Endotracheal Suctioning of Mechanically Ventilated Patients

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**Abstract:** Endotracheal suctioning of mechanically ventilated patients can result in saving the life of the person if carried out with proper guidelines and practice. The present study was conducted to assess the effectiveness of video assisted programme on knowledge and practice regarding Endotracheal suctioning of mechanically ventilated patients among B.Sc. Nursing internship students. The objective of study was to find out the effectiveness of video assisted programme on endotracheal suctioning of mechanically ventilated patients among B.Sc. Nursing internship students. A Quasi experimental Pre test Post test design was selected. **RESULTS:** There was a significant difference between pre test and post test knowledge score ( $t = 23.56^*$ ) and practice score ( $t = 36.43^*$ ). Video assisted programme was found to be highly effective in enhancing the knowledge 48.92% ( $12.23 \pm 2.84$ ) and practice 70.24% ( $17.56 \pm 2.64$ ). The correlation between knowledge and practice was found to be highly significant ( $r = 0.90$ ). **CONCLUSION:** The study had shown that VAP was effective in enhancing the knowledge and practice of students as majority of the B.Sc. Nursing internship students had adequate knowledge and practice regarding Endotracheal suctioning of mechanically ventilated patients after VAP.

**Keywords:** Assess; Effectiveness; Knowledge; Practice; VAP; Endotracheal suctioning; Mechanically Ventilated patients

## 1. Introduction

The aim of Endotracheal suctioning is to clear secretions, thereby maintaining a patent airway and improving ventilation and oxygenation. Removal of such secretions also minimizes the risk of atelectasis. However it is not a benign procedure and adverse physiological effects directly attributed to airway suction are well documented. These effects can be both immediate and long-term, and therefore a sound knowledge of the procedure and its effects are a pre-requisite for undertaking the procedure, as is the availability of full resuscitation facilities. The literature suggests that critical care nurses vary in their suctioning practices; Tracheal suctioning is essential to maintain permeability of the artificial airway. This procedure may be associated to risks for the patients. Endotracheal suctioning is a frequently performed procedure that has many associated risks and complications. It is imperative that nurses are aware of these risks and are able to practice according to current research recommendations. Many life-threatening complications can occur when a suctioning procedure is not performed with the correct technique. It has been reported that standard practice guidelines for suctioning are insufficient in clinical practice. The purpose of this study was to ascertain the effectiveness of standard endotracheal suctioning technique in order to improve clinical process as evidence based practice. According to the Centers for Disease Control and Prevention (CDC), median rates of ventilator-associated pneumonia (VAP) are 4.2 to 16.3 cases per 1000 ventilator days in adult critical care units. The estimated occurrence of VAP in critical care units is 10% to 65%, with mortality rates of 20 percent to percent. Approximately 23 percent of mechanically ventilated patients suffer from associated problems and 9.3 percent get hospital acquired infections therefore appropriate endotracheal suctioning need to be practiced. Endotracheal suctioning of mechanically

ventilated patients can result in saving the life of the person if carried out with proper guidelines and practice.

## 2. Statement of the Problem

“A quasi experimental study to assess the effectiveness of video assisted programme (VAP) on knowledge and practice regarding Endotracheal suctioning of mechanically ventilated patients among B.Sc. Nursing internship students of selected nursing colleges at Dehradun.”

## 3. Objectives of the Study

1. To assess the pre test level of knowledge and practices among B.Sc. Nursing internship students regarding Endotracheal suctioning of mechanically ventilated patients.
2. To assess the post test level of knowledge and practices among B.Sc. Nursing internship students regarding Endotracheal suctioning of mechanically ventilated patients.
3. To correlate the knowledge and practices among B.Sc. Nursing internship students regarding Endotracheal suctioning of mechanically ventilated patients.
4. To find out the effectiveness of video assisted programme on endotracheal suctioning of mechanically ventilated patients among B.Sc. Nursing internship students by comparing pre test and post test scores.
5. To find out the significant association between post test level of knowledge and practices with the selected demographic variables.

**Conceptual Framework:** The conceptual framework of the present study is based on Wiedenbach's "Helping Art Of Clinical Nursing Theory". Wiedenbach developed the helping Art of Clinical Nursing Theory in 1964.

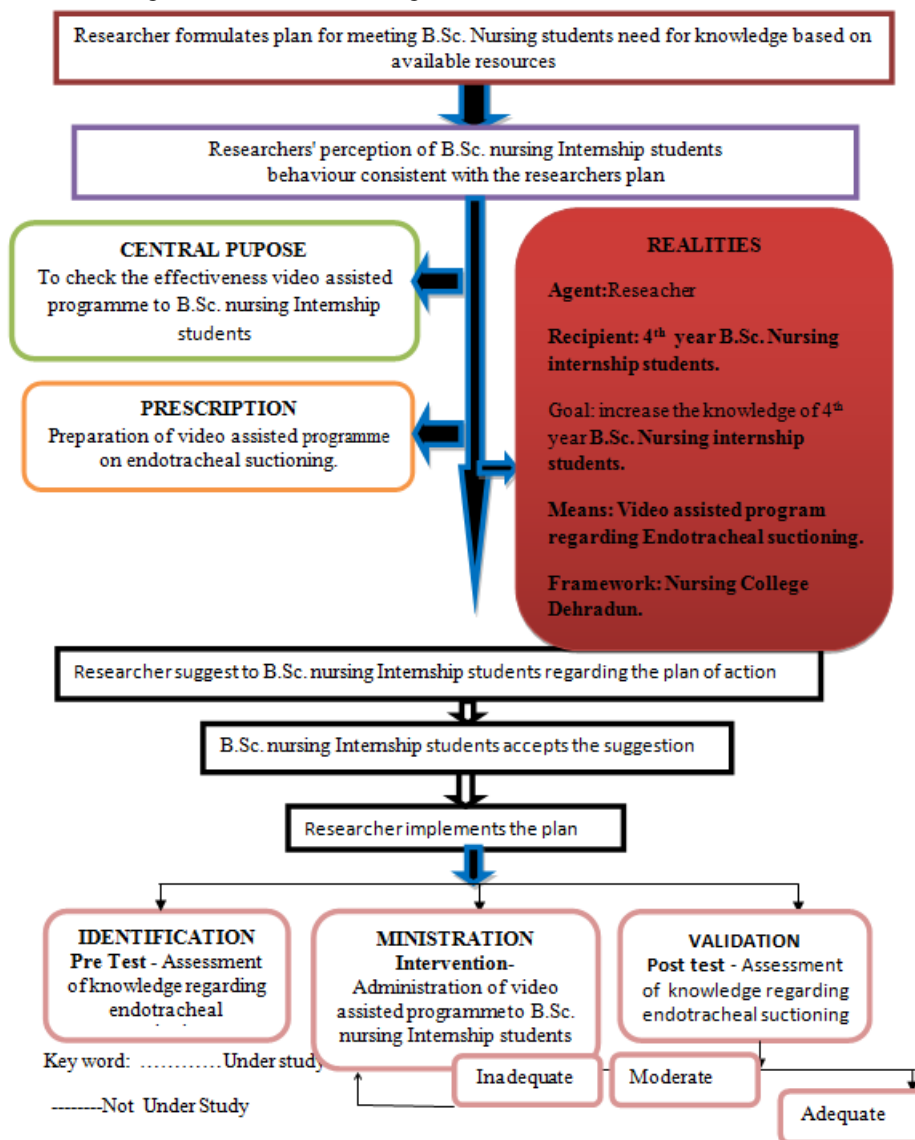
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Wiedenbach views nursing as an art based on goal directed care. Wiedenbach's vision of nursing practice closely parallels the assessment, implementation, and evaluation step of nursing process. According to Wiedenbach, nursing

practice consists of identifying a need for help, ministering the needed help and validating that the need for help was met.



**Figure 1:** Modified Ernestine Wiedenbach's prescriptive theory: clinical nursing: A helpful art of clinical nursing

#### 4. Review of Literature

The reviews of literature related to the present study are grouped into following headings:

**Section A:** Studies related to endotracheal suctioning of mechanically ventilated patients.

**Section B:** Studies related to knowledge regarding endotracheal suctioning of mechanically ventilated patients.

**Section C:** Studies related to practice regarding endotracheal suctioning of mechanically ventilated patients.

#### 5. Material and Methods

**Research Approach:** In view of the nature of the problem under the study the researcher adopted evaluative approach

to assess the effectiveness of video assisted programme (VAP) on knowledge and practice regarding Endotracheal suctioning of mechanically ventilated patients among B.Sc. Nursing internship students for the present study.

**Research Design:** Pre test (O<sub>1</sub>) → Intervention (X) → Post test (O<sub>2</sub>)

**Research Setting:** The present study was conducted in CIMS College of Nursing, Kuanwala Dehradun, CMI Hospital and MAX Hospital at Dehradun.

#### 6. Results

The correlation between the knowledge and attitude regarding endotracheal suctioning of mechanically ventilated patients was calculated using Karl Pearson's

Coefficient of Correlation method and the results were as given in Table.18.

**Table 1:** Correlation between post test knowledge and practice score

N=30

	No. of Item	Mean	Mean Percentage	SD	Correlation
Knowledge	25	21.60	86.40%	21.68	0.90*
Practice	25	20.33	81.32%	20.41	

\*Highly Significant Table 1 show that the correlation between post test knowledge and practice regarding endotracheal suctioning of mechanically ventilated patients is 0.90, which is statistically highly significant. Hence, hypothesis H<sub>2</sub> is accepted and null hypothesis is rejected.

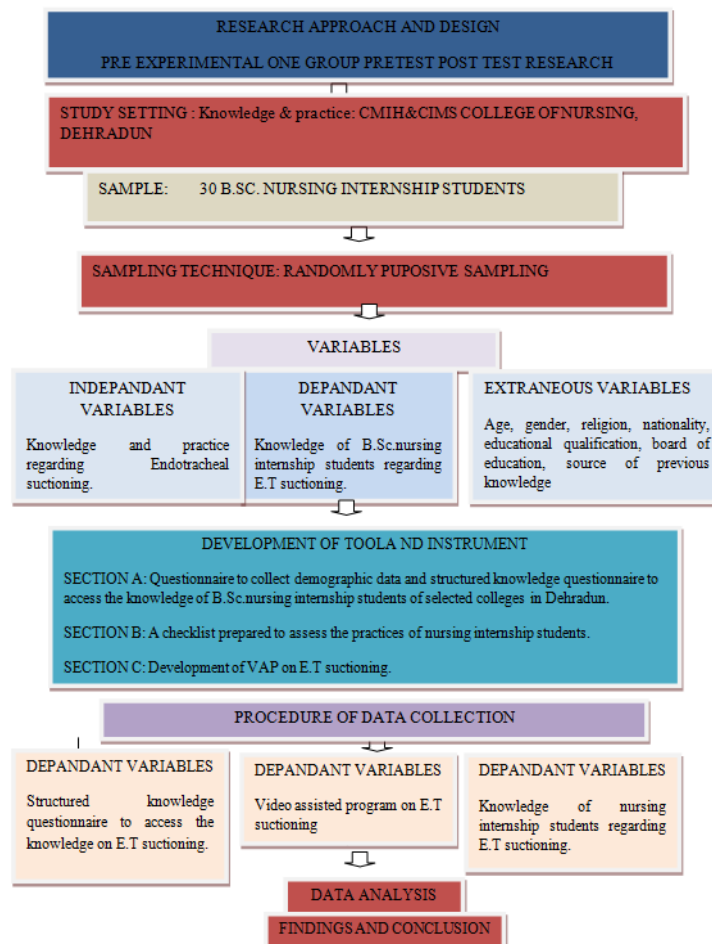
**Table 2:** Comparison of aspect wise pre test and post test knowledge score regarding endotracheal suctioning of mechanically ventilated patient

S. No.	Aspect	Pre test		Post test		Enhancement		Paired t-test	NS/S
		Mean	SD	Mean	SD	Mean	SD		
1.	Anatomy & physiology	1.83	2.0	4.56	4.59	2.73	1.04	14.36*	S
2.	Preparatory phase	1.36	1.68	4.13	4.23	2.76	1.13	13.33*	S
3.	Performance phase	3.63	3.95	8.3	8.38	4.66	2.28	11.20*	S
4.	Follow-up phase	2.53	2.9	4.6	4.64	2.07	1.39	8.16*	S

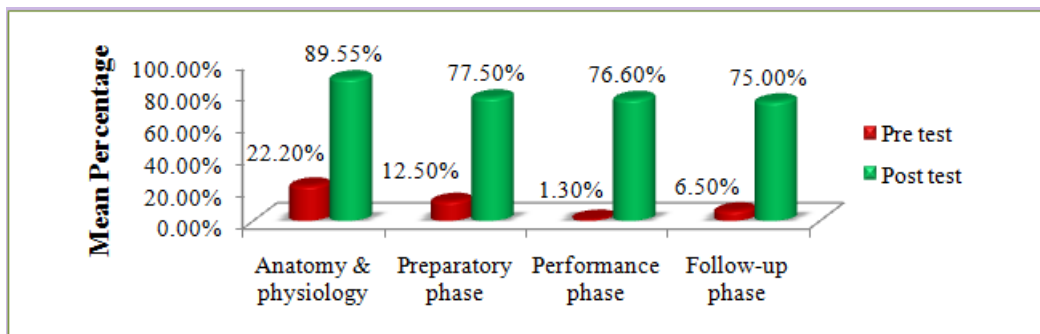
t(0.05,29) = 2.05 \*S – Significant, NS – Not Significant

Table 2 depict comparison of aspect wise pre test and post test knowledge score The result shows that the obtained t-value is greater than the table value which indicates there is significant difference between aspect wise pre test and

post test knowledge score at 5% level of significance (P<0.05). Hence, hypothesis H<sub>1</sub> is accepted and null hypothesis is rejected.



**Figure 2:** Comparison of aspect wise pre test and post test practice score regarding endotracheal suctioning of mechanically ventilated patients



**Figure 3:** Aspect wise Pre test and Post test practice score

Figure 3 depict comparison of aspect wise pre test and post test practice score on Endotracheal suctioning of mechanically ventilated patients among B.Sc. Nursing internship students. The result shows that the obtained t-value is greater than the table value which indicates there

is significant difference between aspect wise pre test and post test practice score at 5% level of significance ( $P < 0.05$ ). Hence, hypothesis  $H_1$  is accepted and null hypothesis is rejected.

**Table 3:** Comparison of pre test and post test practice score regarding endotracheal suctioning of mechanically ventilated patients

N=30

Practice score	Maximum Score	Mean	Mean %	SD	Paired t-test	NS/S
Pre test	25	2.76	11.06	3.08	36.43*	S
Post test	25	20.33	81.32	20.41		
Enhancement	25	17.56	70.24	2.64		

$t(0.05,29) = 2.05$  \*S – Significant, NS – Not Significant

Table 3 depicts the Comparison of pre test and post test practice score. The result shows that the obtained t-value is greater than the table value which indicates there is significant difference between aspect wise pre test and post test practice score at 5% level of significance ( $P < 0.05$ ). Hence, hypothesis  $H_1$  is accepted and null hypothesis is rejected.

## 7. Discussion

### Section A: Description of demographic characteristics of respondents

In the present study, majority 73% of the respondents were in the age group of 20–22 years, 27% were in the age group 23–25 years and none was above 25 years. According to gender 17% of the respondents were male and majority 83% were female. According to religion majority 93% of the respondents were Hindu. According to nationality majority 90% of the respondents were Indian, 7% were Nepali and 3% were other. According to educational qualification majority 73% of the respondents were intermediate, 27% were graduate.

According to board of education majority 70% of the respondents were from state board, 30% were from CBSE and none was from ICSE. According to previous information majority 57% of the respondents had information from class teaching, 43% of the respondents received information in clinical area and none had from seminars & workshops or medical personnel.

### Section B: Assessment of post test knowledge and practice regarding Endotracheal suctioning of mechanically ventilated patients

The findings of the study had shown that mean post test knowledge score was 86.4% ( $21.6 \pm 21.68$ ). Majority 97% had adequate knowledge, 3% of the respondents had moderate knowledge and the mean post test practice score was 81.32% ( $20.33 \pm 20.41$ ). Total 100% of the respondents had adequate practice and none had moderate or inadequate practice regarding Endotracheal suctioning of mechanically ventilated patients.

### Section C: Correlation between the knowledge and practice regarding Endotracheal suctioning of mechanically ventilated patients

The findings of the study had revealed that correlation between the knowledge and practice was 0.90, which is highly significant.

### Section D: Comparison of pre test and post test knowledge and practice score regarding Endotracheal suctioning of mechanically ventilated patients

The findings of the study had shown that there was a significant difference between pre test and post test knowledge score ( $t = 23.56^*$ ) and practice score ( $t = 36.43^*$ ). Video assisted programme was found to be highly effective in enhancing the knowledge 48.92% ( $12.23 \pm 2.84$ ) and practice 70.24% ( $17.56 \pm 2.64$ ) of B.Sc. Nursing internship students. Hence, hypothesis  $H_1$  is accepted and null hypothesis is rejected.

## 8. Conclusion

Mean percentage of post test knowledge score was 86.4% ( $21.6 \pm 21.68$ ). Majority 97% had adequate knowledge and the mean post test practice score was 81.32% ( $20.33 \pm 20.41$ ). Total 100% of the respondents had adequate practice regarding Endotracheal suctioning of mechanically ventilated patients.

The correlation between knowledge and practice was found to be highly significant ( $r = 0.90$ ).

There was a significant difference between pre test and post test knowledge and practice score.

The researcher concluded that video assisted programme (VAP) was effective in enhancing the knowledge and practice of students as majority of the B.Sc. Nursing internship students had adequate knowledge and practice regarding Endotracheal suctioning of mechanically ventilated patients after VAP.

## 9. Recommendations

- A comparative study may be undertaken in all types of health care settings.
- A similar study can be carried out for other health care professionals who are involved in Endotracheal suctioning of mechanically ventilated patients in the hospital settings.
- A study may be undertaken to evaluate practices of nurses on Endotracheal suctioning of mechanically ventilated patients in hospitals.
- A comparative study may be conducted between the doctors and nurses and other health care personnel.
- A study may be conducted to assess the learning needs of student nurses on Endotracheal suctioning of mechanically ventilated patients.

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