

## **A Study to Assess the Knowledge and Practices for Endo-Tracheal Care among Staff Nurses Working in Selected Hospitals of Pune.**

**Mrs. Leeja Bonny Thomas<sup>1\*</sup>, Mr. Basavant Dhudum<sup>2</sup>**

<sup>1</sup>Assistant Professor, Symbiosis College of Nursing (SCON), Symbiosis International (Deemed University), Pune, Maharashtra, India

<sup>2</sup>Bharati Vidyapeeth Deemed University, College of Nursing, Wanlesswadi, Sangli, Pune, Maharashtra, India

### **ABSTRACT**

Nurses all over the world are occupied in pioneering performance ensuring an important development in the physical conditions of patients, populations, and health system on an everyday basis.<sup>1</sup>

Endo-tracheal care is majorly done on prolonged mechanical ventilation patients. A retrospective study was conducted on the timing and technique of tracheostomy on mortality and morbidity in cardiovascular surgery patients. The duration of the study was Jan 2000 to October 2007. During this period 205 cases underwent the tracheostomy surgery out of 19559 cardiac operations. 134 (65.4%) cases were undergone the surgical tracheostomy and 71 (34.6%) were percutaneous tracheostomy. Infection rate was significantly low after the surgery of tracheostomy. Mobilization, cooperation and oral feeding rates were higher. 71.4% was the early multifactorial mortality rate of tracheostomies and late tracheostomies were 88.1% (p=0.037).

The research method was exploratory descriptive approach which was adopted for the study because the study was aimed at assessing their knowledge and practice regarding Endo-tracheal care among Nursing staff working in selected hospital of Pune and determining it statistically.<sup>2</sup>

**Keywords:** Knowledge; practice, Endo-tracheal care, Nursing staff

### **Introduction**

**“Constant attention by a good nurse may be just important as a major operation by a surgeon.”**

This definition of health given by WHO includes a clear objective which has to be pursued in an ongoing process.

Tracheostomy is a surgical opening in the trachea to make breathing easier and that forms a temporary or permanent opening.<sup>3</sup>

From ancient time itself attempts to save man's life from suffocation have been made. It's said that around 1000 BC Alexander the great saved the life of his soldier from suffocation in his trachea using tip of his sword.<sup>4</sup>

"Semi slaughter" was the name given to this technique of slashing the throat to save the life, previously. And later, Lorenz Heister coined the term tracheostomy in the year in 1718 & in 1921 the indications and techniques for modern tracheostomy was described by Chevalier Jackson. He also emphasized the importance of post-operative care, which dramatically reduced death rate.<sup>4</sup>

Caring for a patient with tracheostomy requires the nurses to have a thorough understanding of airway management and maintenance ongoing assessment of the patients respiration function. In critical situation would require immediate intervention to ensure that respiration arrest is avoided.

Endo-tracheal care is a basic nursing skill, while it is matter of routine procedure in the practice of otolaryngology and critical care nurses' general nurses in other areas may perform infrequently.<sup>5</sup>

### **Need for the Study**

Tracheostomy is a common surgical procedure. Complication rates varying from 6 to 66% reported in India of considerable associated morbidity and mortality associated with tracheostomy range from 0 to 5% was also reported.<sup>6</sup>

A retrospective study was conducted on the timing and technique of tracheostomy on mortality and morbidity in cardiovascular surgery patients. The duration of the study was Jan 2000 to October 2007. During this period 205 cases underwent the tracheostomy surgery out of 19559 cardiac operations. 134 (65.4%) cases were undergone

the surgical tracheostomy and 71(34.6%) were percutaneous tracheostomy. Infection rate was significantly low after the surgery of tracheostomy. Mobilization, cooperation and oral feeding rates were higher. 71.4% was the early multifactorial mortality rate of tracheostomies and late tracheostomies were 88.1% (p=0.037).

As per conclusion mortality and morbidity due to tracheostomy is common in the cardiovascular surgery patients. Early initiation of the procedure would have been greater effect on expected mortality and infection of critical patients.<sup>6</sup>

Due to improper Endo-tracheal care and negligence complication on greater extent arises such as aspiration of secretion into the airway, oedema at site on incision, discharge from site of incision. Other problems which arise during endo-tracheal care are dislocation of Tracheostomy tube, bleeding from stoma, blockage of Tracheostomy tube, aspiration, swallowing problem, speech problems, secretions and many more. These complications can usually be prevented with if the caregiver has proper knowledge of how to care for the tracheostomy site using aseptic technique. Endo-tracheal care greater importance is precaution and measures adopted to reduce infection, morbidity and mortality plays important role.<sup>7</sup>

Good endo-tracheal management has a significant impact on patient's general wellbeing and quality of life. It is therefore important that nurses are equipped with appropriate skills and knowledge and practice to take care of patient safely and completely and to very possible suctioning.<sup>7</sup>

### **Problem Statement**

A Study to assess the knowledge and practices for endo-tracheal care among staff nurses working in selected hospitals of Pune.

### **Objectives**

- To assess the knowledge about endo-tracheal care among Nursing staff
- To assess the practices about endo-tracheal care among Nursing staff
- To find out the association between knowledge and practice with selected demographic variables

### **Operational Definitions**

#### **Knowledge**

##### **According to Oxford Dictionary**

Knowledge means information of awareness gained through experience or education.

##### **In this Study**

Knowledge means data collected through structured Questionnaire.

#### **Practice**

##### **According to Oxford Dictionary**

When you repeat an activity to improve your ability to do repeatedly in order to learn to become proficient.

##### **In this Study**

Practice means data collection through observation checklist.

## **Methodology**

### **Research Approach**

The research method adopted for the study was quantitative research approach.

### **Research Design**

The research design used was exploratory- descriptive research design

In the present study, the investigator tries to assess the knowledge and practice skills regarding tracheostomy care in an attempt to develop self-structured modules.

### **Setting of the Study**

The setting of the study was selected hospital of Pune.

### **Sample and Sampling Technique**

In this study, the investigator used the non-probability sampling approach. Using convenient sampling technique, 60 sample were selected who fit the inclusion criteria.

### **Inclusion Criteria**

The Following criteria were to select the sample.

- Nurses with working experience of 1 year & above.
- Nurses who are ready to take part in the study.

### **Exclusion Criteria**

- Nurses working in OPD.
- Nurses who are not ready to take part in this study.
- Nurses who are below one year of experience.

### **Development and Description of Tool**

In this study, a structured questionnaire was developed by the investigator

### **Description of the Tool**

The tool used self-reported structured questionnaire, which include two sections:

Section I consisted items on demographic data, such as age, sex, professional education, experience in years.

Section II was for the assessment of knowledge regarding tracheostomy care.

Total 20 items were selected for questionnaire. A blue print was prepared.

### **Scoring**

There were totally 20 items in the questionnaire. Every correct answer was given a score of one.

01-05 Poor

06-10 Average

11-15 Good

16-20 Excellent.

Another tool was used for observational checklist, which included total 27 items observational checklist was prepared. Correct step is given as one mark and wrong step is given zero. The total observational checklist was plotted on the scale of four.

01-07 Poor

08-14 Average

15-21 Good

22-27 Excellent

### Interpretation

- Inadequate knowledge & practices<50%
- Moderate knowledge&practices 51- 75%
- Adequate knowledge & practices>75%

### Result

**Table 1.** Distribution of demographic variables

Demographic Variables	Experimental Group	
	Frequency	Percentage
<b>Age:-</b>		
20-30years	38	63.33
30-40years	18	30
40-50years	04	6.67
<b>Sex:-</b>		
Male	35	58.34
Female	25	41.66
<b>Professional Education:-</b>		
ANM NURSING	26	43.34
GNM NURSING	22	36.66
B.Sc NURSING	12	20
<b>Years in experience:-</b>		
1-5years.	39	65
6-10years	17	28.34
11-15years.	04	6.66

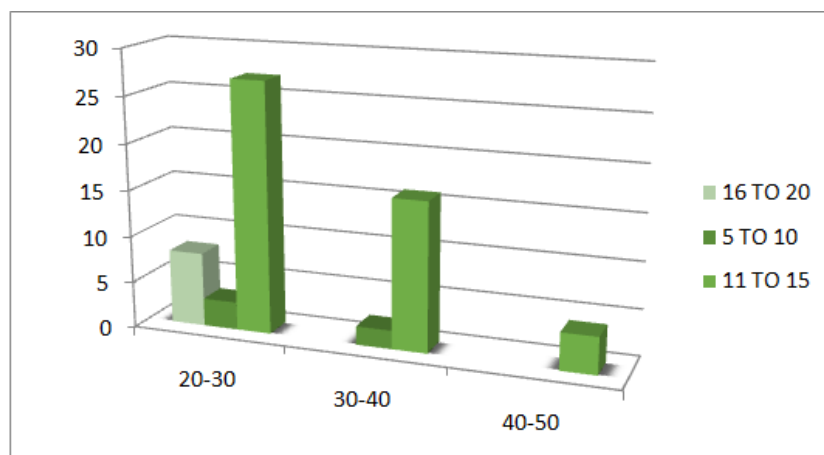
Table no.1 shows that most of the majority of sample 63.33 belongs to the age group of 20-30 years. 58.34% were Males.43.34% were the ANM nurses and 65% were 1-5 years of experience.

## Section II

This section presents findings on the relationship between knowledge and practice scores with selected demographic variable

**Table 2.** Association between knowledge score and Age

Age in years	0-25% Poor	25-50% Average	50-75% Good	75-100% Excellent	Total
<i>20-30</i>	00	03	27	08	38
	0.00%	7.90%	71.05%	21.05%	100%
<i>30-40</i>	00	02	16	00	18
	0.00%	11.12%	88.88%	0.00%	100%
<i>40-50</i>	00	00	04	00	04
	0.00%	0.00%	100%	0.00%	100%
<i>Total</i>	0	05	47	08	60
	0.00	8.34%	78.33%	13.33%	100%



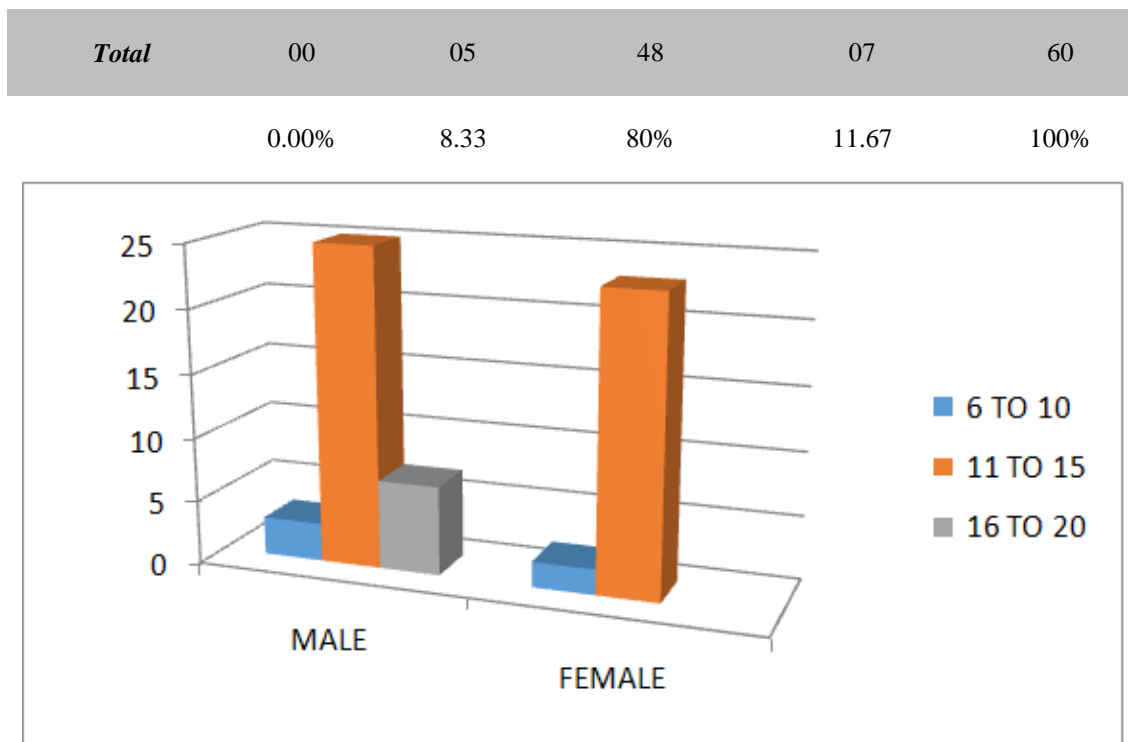
**Figure 1.** Association between Knowledge Score and Age

**Fig.1.** The above bar diagram shows that majority of samples i.e. the age group between 20-30 years had good knowledge 88.88 % ( 16) regarding tracheostomy care in selected condition. Chi square test was 9.49 which is  $>0.05$ . This shows that there is no significant association between knowledge and age.

**Table 3.** Association between Knowledge Score and Sex

Gender	0-25% Poor	25-50% Average	50-75% Good	75-100% Excellent	Total
<i>Male</i>	00	03	25	07	35
	0.00%	8.57%	71.43%	20%	100%
<i>Female</i>	00	02	23	00	25
	0.00%	08%	92%	00	100%

**n=60**

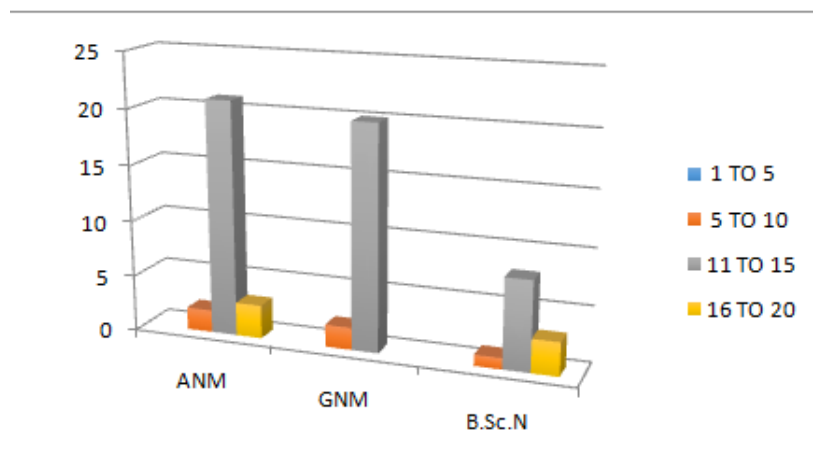


**Figure 2.** Association between Knowledge Score and Sex

**Fig.2.** The above bar diagram shows that majority of samples are in males (35) but females had good knowledge regarding endo-tracheal care in selected condition. The calculated chi square test was 2.86, p value =5.99, which is  $> 0.05$ . This shows that there is no significant association between knowledge and sex.

**Table 4.** Association between Knowledge and Education

	0-25% Poor	25-50% Average	50-75% Good	75-100% Excellent	Total
<b>ANM</b>	00	02	21	03	26
	0.00%	7.70%	80.77%	11.53	100%
<b>GNM</b>	00	02	20	00	22
	0.00%	9.09	90.91	00	100%
<b>B.Sc.N</b>	00	01	08	03	12
	0.00%	8.34	66.66	25	100%
<b>Total</b>	0	05	49	06	60
	0.00	8.34	81.66	10	100%



**Figure 3.** Association between Knowledge Score and Education

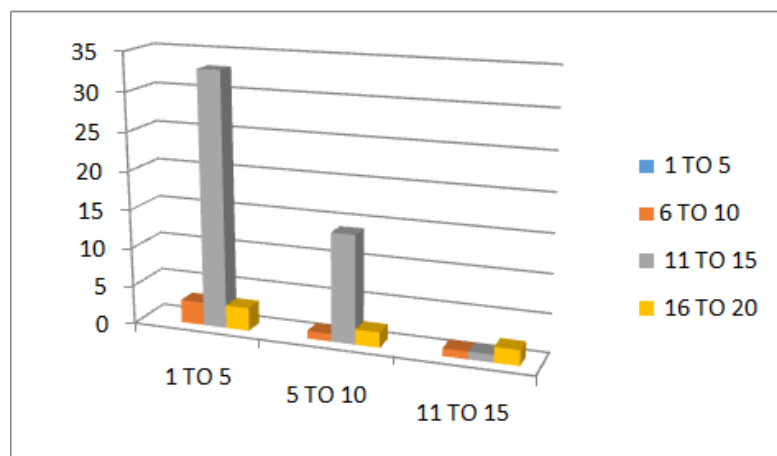
**Fig.3.** The bar diagram shows majority of samples are from ANM (26) but GNM staff had good knowledge 90.91% regarding endo-tracheal care in selected condition. The calculated chi square test was 3.350 P = 9.49 which is > 0.05. Thus it shows there is no significant association between knowledge and education.

**Table 5.** Association between Knowledge and Experience

Experience	Knowledge Score				Total
	0-25% Poor	25-50% Average	50-75% Good	75-100% Excellent	
<b>1-5 years</b>	00	03	33	03	39
	0.00%	7.70%	84.61%	07.69%	100%
<b>6-10 years</b>	00	01	14	02	17
	0.00%	5.88%	82.35%	11.77%	100%
<b>11-15 year</b>	00	01	01	02	04
	0.00%	25%	25%	50%	100%
<b>Total</b>	0	5	48	07	60
	0.00	8.33%	80%	11.66%	100%

**ASSOCIATION BETWEEN KNOWLEDGE AND EXPERIENCE**

**Fig.4.**The above bar diagram shows that majority of sample from 1-5 years' experience (39) they had good knowledge 84.61% regarding endo-tracheal care. The calculated chi square test value was 8.725 P=9.49 which is > 0.05. It shows that there is no significant association between knowledge and experience.



**Figure 4.** Association between Practice Scores with Selected Demographic Variables

**Table 6.** Association between Practice Scores and Age

Age in Years					<b>n=60</b>
	0-25% Poor	25-50% Average	50-75% Good	75-100% Excellent	Total
<b>20-30</b>	00	00	25	13	38
	0.00%	0.00%	65.79	34.21	100%
<b>30-40</b>	00	00	09	09	18
	0.00%	0.00%	50	50	100%
<b>40-50</b>	00	00	04	00	04
	0.00%	0.00%	100%	0.00%	100%
<b>Total</b>	0	0	38	22	60
	0.00	0.00%	63.35	36.65	100%

The above table shows that majority of samples in age group between 20-30 years (38) but age group of 40-50 had good practice skills (100%) regarding tracheostomy care. The calculated chi square test value was 3.80 P= 5.99 which is greater than 0.05.

**Table 7.** Association between Practice Skills and Sex

Sex					<b>n=60</b>
	0-25% Poor	25-50% Average	50-75% Good	75-100% Excellent	Total
<b>Male</b>	00	00	25	10	35
	0.00%	0.00%	71.43%	28.57%	100%
<b>Female</b>	00	00	14	11	25
	0.00%	0.00%	56%	44%	100%



<b>Total</b>	00	00	39	21	60
	0.00%	0.00%	65%	35%	100%

The above table shows that majority of samples are males and they had good knowledge (71.43) regarding tracheostomy care. The calculated chi square test value was 1.53 P= 3.84 which is greater than 0.05. This shows that there is no significant association between practice and sex.

**Table 8.** Association between Practice and Education

Education					<b>n=60</b>
	0-25% Poor	25-50% average	50-75% Good	75-100% Excellent	Total
<b>ANM</b>	00	00	17	09	26
	0.00%	0.00%	65.38%	34.62%	100%
<b>GNM</b>	00	00	12	10	22
	0.00%	0.00%	54.55%	45.45%	100%
<b>B.Sc.N</b>	00	00	10	2	12
	0.00%	0.00%	83.33%	16.67%	100%
<b>Total</b>	00	00	39	21	60
	0.00	0.00%	65%	35%	100%

The above table shows that majority of samples are ANM (26) but B.Sc. N had good knowledge 83.33% regarding tracheostomy care. The calculated chi square value was 2.83 P value =5.99 which is > 0.05.

**Table 9.** Association between Practice Score and Experience

Experience					<b>n=60</b>
	0-25% Poor	25-50% Average	50-75% Good	75-100% Excellent	Total
<b>1-5 years</b>	00	00	27	12	39
	0.00%	0.00%	69.24%	30.76%	100%
<b>6-10 years</b>	00	00	09	08	17
	0.00%	0.00%	52.95%	47.05%	100%
<b>10-15 years</b>	00	00	03	01	04
	0.00%	0.00%	75%	25%	100%

<b>Total</b>	0	00	39	21	60
	0.00	0.00%	65%	35%	100%

The above table shows majority of samples belonging to 1-5years (39) but 10-15 years of experience had good knowledge regarding tracheostomy care. The calculated chi square test value 1.57 P= 5.99 which is >0.05.

### Section III

**Table 10.** Distribution According to their Mean, Median, Standard Deviation of Knowledge and Practice of Nursing Staff Working in ICU

Aspect	Knowledge	Practice
<i>Mean</i>	13.46	20.73
<i>Median</i>	14	20
<i>S.D</i>	1.62	1.86

**Table 11.** Association of Knowledge and Practices Scores with Selected Demographical Variables

S.no	Selected variables	Chi square test	P value 0.05 level	Association
1	<i>Age</i>	2.62	9.49	No significant
2	<i>Sex</i>	2.86	5.99	No significant
3	<i>Education</i>	3.350	9.49	No significant
4	<i>Experience</i>	8.725	9.49	No significant

**Table No.11:**The above tables show that there is no association between knowledge score with selected demographics. (Age, Sex, Education, Knowledge)

**Table 12.** Association between Practice Score with Selected Demographic Variable by Chi square/ Fisher's Exact Test

S.no	Selected variables	Chi square test	P value 0.05 level	Association
1	<i>Age</i>	3.80	5.99	No significant
2	<i>Sex</i>	1.53	3.84	No significant
3	<i>Education</i>	2.83	5.99	No significant
4	<i>Experience</i>	1.57	5.99	No significant

**Table No 12:** The above table shows that there is no association between practice score with selected demographic variables (Age, sex, Education, experience)

### Discussion

Based on the objectives the researcher tried to assess the knowledge and practices of 60 samples regarding endo-tracheal care.

A similar study was conducted on staff nurses working in ICU regarding knowledge and practice regarding tracheostomy care in UK. 280 samples were selected. It was found that, of sampling group 56.69% were males 43.31% were female, it also found the majority of knowledge scored by males than females. In the present study the males are 58.34% and females were 41.66%.

The demographic variables of above study were found to be similar.

A similar study was conducted on staff nurses regarding endo-tracheal care among nurses 90 samples were selected. The study found that the samples were high in age group of below 35 years 62.22% were below 35 years. It also found that they achieved high good scores (73.53%). In the present study, of 60 samples 63.33% were 20-30 years.

The demographic variables of above study were found to be similar. Another similar study was conducted on knowledge about tracheostomy care among nursing staff working in ICU the study found that majority of participants had inadequate knowledge scores 65.66%. In this present study among 60 samples 78.33% had good knowledge scores.13.33% had excellent knowledge. The results of above study were found to be contradictory.

## Conclusion

The purpose of study was to assess the existing knowledge and practice regarding endo-tracheal care among staff nurses working in selected hospital and its correlation with selected descriptive research design was good research design for the present study.<sup>8</sup>

Based on the objective data was analysed by using inferential and descriptive statistics. Chi- square and p value is used to correlate the demographic variables.<sup>8</sup>

The nurses may malpractice and may don't have adequate knowledge they need to improve the knowledge and practice skills.<sup>9</sup>

The reliability co-efficient was done using test split half method and was found 0.9. The research design was used exploratory descriptive research design. Convenient sampling method was used 60 staff Nurses was selected according to criteria.<sup>9</sup>

The study was based on the fact which was reviewed the literature shows that nurses have adequate knowledge and practice skills regarding endo-tracheal care. The present study shows that the nurses are having adequate knowledge regarding endo-tracheal care.<sup>9</sup>

## References

- [1] Choithram college of Nursing, Indian Journal of Nursing Studies, Vol:1, no.1
- [2] [Http://www.rcjournal.com](http://www.rcjournal.com)
- [3] Abdul, Aziz, Hamid, complication of Tracheostomy ,khyder teaching hospital ,Peshawar, JPML , Volume 18.
- [4] Brunner and suddrths, Text book of medical–surgical nursing ed10th, LippincottWilliamsandWilkins.
- [5] Higgins D. Basic nursing principles of caring for patients with a tracheostomy. Nursing Times 2009; 105 (3): 14-15.
- [6] Text book of research, B.T.Basvanthappa, edition one,2007, page number 34.
- [7] [URL:http://www.ncbi.nlm.nih.gov/pubmed](http://www.ncbi.nlm.nih.gov/pubmed)
- [8] Myers .S. T., Sharp. D., (2004), "Emergency ventilation ofthe tracheostomy patient, Part 1: Knowledge assessment of healthcare professionals" ,journal of ORL head neck nursing,22(4 ), 12-20.
- [9] Donnelly.F,Wiechula.R., (2006)," lived experience of tracheostomy tube change", Journal of Clinical Nursing, 15(9), 115-22.