

**A STUDY TO ASSESS THE EFFECTIVENESS OF SELF INSTRUCTIONAL  
MODULE ON POST OPERATIVE CARE OF PATIENT UNDERWENT  
THORACOTOMY AMONG STAFF NURSES IN SELECTED HOSPITAL  
MANGALORE**

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**Abstract**

Thoracotomy is an incision into the pleural space of the chest. It is performed by surgeons or emergency physicians under certain circumstances to gain access to the thoracic organs, most commonly the heart, the lungs, the esophagus or thoracic aorta, or for access to the anterior spine such as it is necessary for access to tumors in the spine. There are several different types of thoracotomy that can be performed, depending on the indication of surgery and condition being treated. An evaluatory approach with pre-experimental one group pre-test post-test design was used to assess the effectiveness of self instructional module on post operative care of patient underwent thoracotomy among staff nurses in the year 2013. A total 50 nurses were selected for the study. Data was collected by structured knowledge questionnaire among staff nurses working in Athena Hospital, Mangalore. The mean post-test knowledge score 30.8(85.55%) was higher than the mean pre-test knowledge score 10.48 (29%). There was no significant association of pre-test knowledge score with selected demographic variables such as age ( $\chi^2_1=0.81$ ), professional qualification ( $\chi^2_2=1.31$ ), years of experience ( $\chi^2_3=14.67$ ), area of experience ( $\chi^2_4=1.58$ ) and attendance in inservice educational programmes on post operative care of patient underwent thoracotomy ( $\chi^2_5= 20.45$ ) at 0.05 level of significance. The study has shown that majority of the staff nurses had inadequate knowledge; however the knowledge has significantly improved after the administration of self instructional module. Proper training and wide range of education playing significant role to provide awareness among health-care workers, as well as improving adherence to good clinical practice. Based on these findings, it is strongly recommended that there is need of frequent training and education to enhance nurses knowledge.

**Key words:** Effectiveness; Self Instructional Module; Thoracotomy; Post operative care of patient underwent thoracotomy; Staff Nurses.

## **Introduction**

The thoracic cavity is basically the chest, including everything between the neck and the diaphragm. It's home to the thoracic organs and is protected by the thoracic cage. The heart and lungs are essential for survival and both are prone to certain diseases. The thoracic cavity has three compartments: the mediastinum and two pleural cavities. The mediastinum is home to the heart, trachea, great vessels, and some other structures. The pleural cavities are on either side of the mediastinum and contain the lungs and the pleural linings<sup>1</sup>.

Thoracotomy is an incision into the pleural space of the chest. It is performed by surgeons or emergency physicians under certain circumstances to gain access to the thoracic organs, most commonly the heart, the lungs, the esophagus or thoracic aorta, or for access to the anterior spine such as is necessary for access to tumors in the spine. This procedure is performed in an operating room under general anesthesia. There are several different types of thoracotomy that can be performed, depending on the indication of surgery and condition being treated. These include postereolateral thoracotomy, median thoracotomy, and anterolateral thoracotomy.<sup>2</sup>

Thoracotomy may be performed to diagnose or treat a variety of conditions; therefore, no data exist as to the overall incidence of the procedure. Lung cancer, a common reason for thoracotomy, is diagnosed in approximately 172,000 people each year and affects more men than women ie 91,800 diagnoses in men compared to 80,100 in women<sup>3</sup>.

## **Need of the study**

Today increasing emphasis is placed on health, health promotion, wellness and self-care. Health is seen as resulting from a life style that is oriented towards wellness. Health problems affect people of all ages. The life style of clients profile provides information about health related behaviors<sup>4</sup>.

Thoracotomy is a surgical incision into the thoracic cavity, a thoracotomy is to locate and examine abnormalities, such as tumors, bleeding sites, or thoracic injuries; to perform a biopsy; or to remove diseased lung tissue. this procedure is most commonly performed to remove part or all of a lung to spare healthy lung tissue from disease. Lung

excision may involve pneumonectomy, lobectomy, segmental resection, or wedge resection<sup>5</sup>.

Studies shows that Nurses have a great role in preventing postoperative complications of patients undergoing thoracotomy. Continued understanding, knowledge and appreciation of complications by the staff nurses will be necessary to care effectively for postoperative patients and to create optimal outcome. Since many of the studies and researcher's own experience reveal an inadequate knowledge among staff nurses regarding post operative management of thoracotomy patients, the researcher wants to improve their knowledge by using a self instructional module.

### **STATEMENT OF THE PROBLEM**

"A study to assess the effectiveness of self instructional module on post operative care of patient underwent thoracotomy among staff nurses in selected hospital mangalore"

### **OBJECTIVES**

1. To assess the prior knowledge of staff nurses regarding post operative care of patient underwent thoracotomy.
2. To develop SIM on post operative care of patient underwent thoracotomy.
3. To find out the effectiveness of SIM in terms of gain in post test knowledge score.
4. To associate the pre test knowledge score with selected demographic variables.

### **MATERIALS AND METHODS :**

#### **Research design**

An evaluatory approach with pre-experimental one group pre-test post-test design was used to assess the effectiveness of self instructional module on post operative care of patient underwent thoracotomy among staff nurses working in selected hospital Mangalore.

#### **Sample Variables**

**Independent variable:** refers to Self Instructional Module on post operative care of patient underwent thoracotomy.

**Dependent variable:** refers to the knowledge of the staff nurses post operative care of patient underwent thoracotomy.

**Extraneous variable:** refers to age, educational qualification, years of experience as staff nurse, area of experience and exposure to any previous in-service educational programs on post operative care of patient underwent thoracotomy.

### **Study Setting**

The study was conducted at selected hospitals of Mangalore.

### **Target population**

The target population for conducting the research study consisted of the nurses working in selected hospitals, Mangalore.

### **Sampling technique**

Purposive sampling was used to collect data from the samples.

### **Sample Size**

A total 50 nurses working in Athena Hospital, Mangalore were selected for the study.

### **Development and description of research tool**

As the study was related to assess the effectiveness of self instructional module on post operative care of patient underwent thoracotomy among staff nurses in selected hospital mangalore. The tool was prepared on the basis of:

1. Review of literature
2. Preparation of blue print
3. Consultation with experts of nursing and medicine.

The tool for data collection was a self structured questionnaire and it consists of the following:

**Section 1: Sociodemographic data** e.g. age, educational qualification, years of experience as staff nurse, area of experience and exposure to any previous in-service educational programs on post operative care of patient underwent thoracotomy.

**Section 2:** Structured knowledge questionnaire to assess the knowledge of staff nurses. The maximum score was 36. The items were developed as to cover 3 different areas, namely

- **Unit I** (Anatomy and Physiology of Lung) [6 items]
- **Unit II** (Thoracotomy) [9 items]
- **Unit III**(Post operative care of patient underwent thoracotomy) [21 items]
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### **Validity of research tool**

The validity of research tool was checked as follows:-

- Consultation with guide regarding content and language of the tool.
- The tool was given to the experts from different nursing fields for the validation of the tool.
- Tool was found complete in terms of content and clarity of language. However, some changes were incorporated as per requirement after consultation with guide.

### **Reliability of research tool**

- The reliability of research tool was confirmed by split half method.

### **Data collection procedure**

Data collection was done in the month December 2013. Prior permission was taken from the Nursing Superintendent of hospitals and consent from samples. The structured knowledge questionnaire was administered to assess the knowledge of staff nurses regarding post operative care of patient underwent thoracotomy.

### **Ethical considerations**

This study did not include any intervention on the subjects. A written permission was taken from Superintendent of hospitals. An informal verbal consent was also taken from the subjects. Anonymity of subjects and confidentiality of information was maintained. It was ensured that the study did not affect the subjects in any way.

**ANALYSIS AND INTERPRETATION OF DATA :**

**Table 1: Frequency and percentage distribution of demographic variables of staff nurses.**

Sl.No	VARIABLES	FREQUENCY	PERCENTAGE (%)
1	<b>Age in years</b>		
	a) 21 - 30	40	80
	b) 31 - 40	05	10
	c) 41 and above	05	10
2	<b>Professional Qualification</b>		
	a) General nursing and Midwifery	09	18
	b) Post certificate BSc(N)	05	10
	c) BSc Nursing	36	72
	d) MSc Nursing	00	00
3	<b>Years of experience</b>		
	a) < 1 year	05	10
	b) 1-5 years	45	90
	c) ≥ 5 years	00	00
4	<b>Current area of experience</b>		
	a) Coronary care unit	12	24
	b) Cardiac catheterization lab	12	24
	c) Cardiac postoperative ward	14	28
	d) Any other	12	24
5	<b>Inservice educational programme attended on post operative care of patient underwent thoracotomy.</b>		
	a) Yes	01	02
	b) No	49	98
	c) If yes, specify	00	00

**Table 2: Assessment of Pre-test and Post-test level of knowledge score on post operative care of patient underwent thoracotomy.**

Level of knowledge Score levels		Number of respondents		Percentage (%)	
		Pre test	Post test	Pre test	Post test
Very poor	0-6	05	00	10	0
Poor	7- 12	40	00	80	00
Average	13 – 18	05	00	10	00
Good	19 – 24	00	20	00	40
Very good	25 – 30	00	24	00	48
Excellent	31-36	00	06	00	12
<b>Total</b>	<b>36</b>	<b>50</b>	<b>50</b>	<b>100</b>	<b>100</b>

**Maximum score = 36**

Assessment of the level of pre test knowledge score among staff nurses depicts that, majority of respondents 40(80%) had poor knowledge scores, 5(10%) had average knowledge, 5(10%) of them had good knowledge scores and none of the respondents possessed very good and excellent knowledge score category, it might be due to lack of updating their knowledge. The findings of the study has revealed that there is an urgent need to educate the staff nurses regarding post operative care of patient underwent thoracotomy.

Assessment of the level of post-test knowledge of the staff nurses after the administration of self instructional module had revealed that majority of the respondents 24(48%) had very good knowledge score, 6(12%) had good knowledge score and 20 (40%) had excellent knowledge score in the post test regarding post operative care of patient underwent thoracotomy. It has shown that self instructional module was very effective in improving the knowledge level of the respondents.

**Table 3: Pre-test and post-test knowledge scores regarding post operative care of patient underwent thoracotomy.**

Area	Maximum score	Respondents knowledge			Paired 't' test
		Mean	Mean%	SD	
Pre-test(X)	36	10.48	29	2.82	<b>36.27</b>
Post-test(Y)	36	30.8	85.55	2.15	
<b>Effectiveness(Y-X)</b>		<b>19.84</b>	<b>55.11</b>	<b>2.87</b>	

't' table value = 1.6766 at p < 0.05, df=49

The knowledge scores of staff nurses regarding post operative care of patient underwent thoracotomy has revealed that, post-test mean knowledge score was found higher 30.8(85.55%) and SD of 2.15 when compared with pre-test mean knowledge score which was 10.48(29.11%) with SD of 2.82. The mean effectiveness score was 19.84 (55.11%) with SD of 2.87. The results of the study indicates the effectiveness of self instructional module in enhancing knowledge score of staff nurses on post operative care of patient underwent thoracotomy by using interventional measures in the form of self instructional module.

**Table 4: Area wise mean, SD and Mean percentage of pre-test and post-test knowledge scores of staff nurses regarding post operative care of patient underwent thoracotomy.**

Sl. No	Area	t a s e m e n t s	Respondents knowledge level						't' v a l u e
			Pre-test(X)		Post-test (Y)		Effectiveness (Y-X)		
			Mea n± SD	M ean %	Mean ± SD	M ean %	M ean± S D	Mea n %	



1	<b>Unit I</b> (Anatomy and Physiology of lungs)	6	2.72 ± 0.673	4 5.33	5.48± 0.59	91. 33	1.3 2± 0.835	44	26.12
2	<b>Unit II</b> (Thoracotomy)	9	4.2± .72	4 6.66	8.08± 0.589	89. 78	5.9 4± 1.268	49.5	43.2
3	<b>Unit III</b> (Management of post operative care of patient underwent thoracotomy)	2 1	9.18 ± 1.18	4 3.71	11.98 ± 0.958	79. 87	7.8 ± 1.654	52	46.3
<b>Total</b>		3 6	16.1 ± 2.82	2 9.11	30.8± 2.15	85. 55	19. 84± 3.87	55.1 1	36.27

Data in the table 4 depicts that in Unit I (Anatomy and Physiology of lungs) the pre-test mean knowledge score was 45.33% (2.72±0.673) where as post-test mean knowledge score was 90% (5.48 ±0.59) with an effectiveness in the knowledge score as 44% (1.32± 0.835) where as in Unit II(Thoracotomy) the pre-test mean knowledge score was 31.66% (3.8± 1.246) where as post-test mean knowledge score was 81.17% (9.74± 0.922) with effectiveness in the knowledge score as 49.5% (5.94± 1.268). In Unit III(post operative care of patient underwent thoracotomy) the pretest mean knowledge score was 43.7% (9.18± 1.18) whereas post test mean knowledge score was 79.87%(11.98± 0.958) with an effectiveness in the knowledge score as 52%(7.8± 1.654). The study results indicate that least effectiveness in the knowledge score was found in the unit I and highest effectiveness in Unit III.

**Table 5: Paired ‘t’ test showing the significance of mean difference between pre-test and post-test knowledge scores of staff nurses after the administration of SIM.**

Group	Mean %		Mean difference %	SD difference	‘t’ value
	Pre test	Post test			
Staff nurses working in selected hospital.	29	85.55	56.55	.67	36.27

**Maximum Score = 30 Table value = 1.6766 at 0.05 level of significance**

Data in Table 8 depicts that the mean post-test knowledge score 85.55% was higher than the mean pre-test knowledge score 29%, with a mean difference of 56.55%. The calculated ‘t’ value, 36.27 was greater than the table value 1.6766 at 0.05 level of significance. Therefore the null hypothesis is rejected and research hypothesis was accepted indicating that the gain in knowledge was not by chance. Hence the research hypothesis accepted and concluded that there was significant gain in knowledge after implementation of self instructional module.

From the above findings it was concluded that the Self Instructional Module is an effective teaching strategy to improve the knowledge scores of staff nurses regarding post operative care of patient underwent thoracotomy.

**Table 6: Association of the pre-test knowledge scores with selected demographic variable.**

Variables	>M	<M	Chi-square value	Result
<b>1)Age in years</b>				
a) 21 – 30	22	18	.081	Not Significant
b) 31 – 40	03	02		
c) 41 and above	03	02		

<p><b>2)Educational Qualification</b></p> <p>a) GNM</p> <p>b) Post certificate BSc (N)</p> <p>c) BSc Nursing</p> <p>d) MSc Nursing</p>	05	04	1.321	<b>Not Significant</b>
<p><b>3)Years of experience as staff nurse</b></p> <p>a) ≤ 1 year</p> <p>b) 2-5 years</p> <p>c) &gt;5 years</p>	03	02	14.678	<b>Not significant</b>
<p><b>4) Current area of experience</b></p> <p>a) Coronary care unit.</p> <p>b) Cardiac catheterization lab</p> <p>c) Cardiac postoperative ward.</p> <p>d) Any other.</p>	07	05	1.589	<b>Not Significant</b>
<p><b>5)Attended any inservice education programs on care of patient with cardiomyopathy.</b></p> <p>a) Yes</p> <p>b) No</p>	01	00	20.45	<b>Not significant</b>

**M=Median(11)**

Chi square was carried out to analyze the significant association between the pre-test knowledge scores and the selected demographic variables. The study findings have shown that, there is significant association of pre-test knowledge score with selected demographic variables.

**CONCLUSION :**

The following conclusions were drawn based on the findings of the study:

In the pre test, the distribution of staff nurses according to their level of knowledge has shown that 10% had very poor knowledge,80% had poor knowledge and 10% had average knowledge on post operative care of patient underwent thoracotomy.

Mean percentage of the knowledge score in the pre test was 29.11% with mean and SD of 10.48±2.82, which increased after administration of self instructional module with

mean percentage of knowledge score in the post test by 85.55% with mean and SD of  $30.8 \pm 2.15$ . The self instructional module tested in the study was found to be effective ( $t = 15.63$ ,  $p < 0.05$ ) in improving the knowledge on post operative care of patient underwent thoracotomy among staff nurses. This shows that self instructional module was an effective teaching method for providing information.

Association of demographic variables with pre test scores was computed using chi-square test. Analysis has shown that, there was no association between the pre test knowledge scores with selected demographic variables.

Thus, the finding indicates that there was lack of knowledge among staff nurses regarding post operative care of patient underwent thoracotomy and information through various means like self instructional module is an important source for improving the knowledge.

#### **RECOMMENDATIONS :**

Based on the present study findings, it is recommended that:

1. A similar study can be conducted on a larger sample which may help to draw more definite conclusions and make generalisation.
2. An experimental study can be carried out with a control group.
3. A follow-up study of the self instructional module can be carried out to find the effectiveness in terms of retention of knowledge.
4. A comparative study between the institutional practices on post operative care of patient underwent thoracotomy could be done.
5. A study can be conducted at private and government hospitals and the results of the study may be compared to find out the knowledge on post operative care of patient underwent thoracotomy.

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