

Original Research Article

# A Study to Assess the Effectiveness of Video Assisted Teaching on Knowledge Regarding Post Mastectomy Exercises among Breast Cancer Patients at Kidwai Memorial Institute of Oncology, Bangalore

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## ABSTRACT

**Introduction:** Mastectomy is the common surgical procedure for breast cancer. Following mastectomy potential complications are likely to occur and lymphedema is one of the dreadful complications. Post mastectomy exercises play an important role in prevention of complications by releasing muscular tension, preventing contractures and restoring strength. Studies have reported that pre and post operative education is the best method to reduce complications. Realizing the importance to create awareness on management of Lymphedema, a study was undertaken with an aim to determine the effectiveness of video assisted teaching on knowledge regarding post mastectomy exercises among breast cancer patients.

**Materials and Methods:** A quasi experimental study, with pre and post test research design without control group approach was undertaken among breast cancer patients who undergo mastectomy at Kidwai Memorial Institute of Oncology, Bangalore (Karnataka). A total of 50 pre operative breast cancer patients were selected using convenient sampling method. Pre test was conducted for those patients using structured interview schedule, the same day video assisted teaching was given for duration of 20min and on the 7<sup>th</sup> day post test was given. Results were compared between pre test and post test knowledge scores and association was studied between various demographic variables.

**Results:** In pre test, the overall knowledge score was (16.42±3.0) which is 36.48% whereas after implementation of video assisted teaching programme, the post test knowledge score had improved (34.92±3.80) which is 77.6% and the gain in knowledge was statistically significant. It was noted that knowledge on post mastectomy exercises had significant association with demographic variables like type of family and family history of cancer at p<0.05 level.

**Conclusion:** The study concluded that video assisted teaching is an effective instructional method & educational tool in imparting knowledge on post mastectomy exercises among breast cancer patients who undergo mastectomy.

**Key words:** Post mastectomy exercises, knowledge, video assisted teaching, lymphedema.

## INTRODUCTION

Cancer is a leading cause of morbidity and mortality worldwide. According to GLOBOCAN, cancer

mortality and morbidity are increasing worldwide, with an estimated 13.1 million deaths in 2030. Cancer prevalence in India is established to be around 2.5 million with

over 800,000 new cases and 5,50,00 deaths occurring each year. <sup>[1]</sup>

Breast cancer is the most common cancer among women in India. The incidence of breast cancer is increasing globally especially in developing countries such as India. The data from Indian council of Medical Research (ICMR) shows that, one out of every 22 women in India is diagnosed with breast cancer in her lifetime. In Karnataka, according to ICMR statistics 16% of breast cancer cases of 1998 had increased to 34% per 100,000 in 2008. According to population based cancer registry report in 2013, Bangalore city tops the chart with 36.6 new cases for every one lakh population having the disease. <sup>[2]</sup>

Mastectomy is the treatment of choice in an operable breast cancer. Lymphedema is a common complication of breast cancer surgery and also one of the impacts of survivorship. Lymphedema has no cure but can be successfully managed when properly diagnosed and treated. <sup>[3]</sup> The other common complications after mastectomy is, short term pain, numbness of the skin along the incision site, mild to moderate tenderness of the adjacent area, swelling, seroma formation, wound infection, and reduced shoulder range of movement, which may contribute to the reduced shoulder function. <sup>[4]</sup>

Complications are common following any surgery. However complications increase the suffering of the patient, prolong their stay in the hospital, and cause psychological trauma and delay in the recovery to normal life. <sup>[5]</sup> Therefore specific nursing intervention and restoration of functioning of the arms in the affected side after mastectomy and axillary lymph node dissection is one of the important goals of the nurse's. The nurse must also be able to recognize the early signs and symptoms of lymphedema and act promptly and effectively to increase range of motion. <sup>[6]</sup>

Studies have shown that exercises improve breast cancer patients' quality of life and their physical well being, (Wong. P. et al 2010). <sup>[7]</sup> Study conducted by

International Journal of Research in applied, natural and social sciences has concluded that, enrichment of patient's knowledge and practices in relation to their condition and utilization of the educational program had positive impact and an improvement of patient's outcomes. <sup>[8]</sup>

Post mastectomy exercises plays an important role in prevention of complications by releasing muscular tension, preventing scar tissue development and restoring strength and flexibility to joints and muscles that have been affected by surgery. Commonly performed post mastectomy exercises are (1) Arm exercises (2) Ball squeezing (3) Arm and neck movement (4) Wall hand climbing (5) Hair combing (6) Shoulder blade stretch and squeezing. These exercises could be performed without the help of any complex device and it does not need any particular preparation in the part of the performer. <sup>[9]</sup>

Exercises of the (hand, shoulder, and arm) are initiated on the first postoperative day, as per instructions given preoperatively. The aim of the exercises is to increase circulation and muscle strength, prevent joint stiffness and contractures, and restore full range of motion. Also, self-care activities, such as brushing the teeth, washing the face, combing and brushing the hair, are physically and emotionally therapeutic because they aid in restoring arm function and a sense of normalcy for the patient. <sup>[10]</sup>

The patient themselves plays a vital role in prevention of complications following mastectomy. Most of the women have less knowledge regarding exercises and hence their knowledge has to be enhanced by teaching. Therefore extensive education is needed before and after surgery. Education is the best way to prevent further complications of mastectomy. Video assisted teaching is an effective instructional method & effective educational tool. <sup>[11]</sup> As researcher personally observed the complications suffered by the patients, it provided an insight to undertake a study to develop a

video teaching programme which helps to improve the patient's knowledge regarding post mastectomy exercises and which in turn improves the quality of patient's life.

### **Objectives of the Study**

1. To assess the existing knowledge regarding post mastectomy exercises among breast cancer patients at Kidwai Memorial Institute of Oncology, Bangalore.
2. To prepare and conduct video assisted teaching programme regarding post mastectomy exercises.
3. To evaluate the effectiveness of video assisted teaching programme through the post-test knowledge scores.
4. To determine the association between posttest knowledge with selected demographic variables.

### **MATERIALS AND METHODS**

A quasi experimental study, with pre and post test research design without control group approach was undertaken among breast cancer patients who had to undergo mastectomy at Kidwai Memorial Institute of Oncology, Bangalore (Karnataka). A total of 50 pre operative breast cancer patients were selected using convenient sampling method who met the inclusion criteria. Patients who can't understand Kannada and English were excluded from the study. The self prepared and content validated structured questionnaire was used to gather data related to knowledge among the study variables. It included 2 sections namely 1. Section A: Socio demographic data of breast cancer patients, 2. Section B: Knowledge questionnaire.

The scoring was based on correct and incorrect response. Each correct response carried a score of "one" & incorrect response scored "zero". Based on scores, knowledge was categorized as Inadequate (<50%), Moderate (50-75%), Adequate (>75%).

The reliability of the tool was computed by using split half technique employing Spearman Brown's prophecy formula ( $r=0.83$ ) and found the tool was

reliable. The video teaching programme on post mastectomy exercises was developed based on the title of the topic and objectives.

A formal written permission was obtained from Scientific Review Board and Ethical Review Board of Kidwai Memorial Institute of Oncology to conduct the study. The investigator personally visited the breast cancer patients, explained the purpose of the study and informed consent was taken from the selected breast cancer patients before starting the study. They were assured of anonymity and confidentiality. Pre-test was conducted with the help of structured interview questionnaire. Video assisted teaching was conducted on the same day and on 7<sup>th</sup> day post test was given. The collected data was compiled, tabulated and analyzed based on objectives with the help of descriptive (mean, SD and Mean %) and inferential (chi square test) statistical methods.

### **RESULTS**

#### **Section 1: Socio demographic profile of breast cancer patients:**

Among 50 breast cancer samples surveyed the higher percentage 44% were in the age group 50 years or more, 86% of the subjects belonged to nuclear family, 54% of the subjects were married where as 22% were unmarried, majority 80% of the subjects belonged to Hindu family, 46% of the subjects had no formal schooling, most of the subjects were housewives 62%, 44% of the subjects were having an income above Rs.6000, 60% of the subjects had no family history of cancer and 40% had a family history of cancer, 54% of the samples received health information from electronic media (i.e. from TV /radio programmes).

#### **Section 2: Pre-test and Post-test knowledge scores of breast cancer patients**

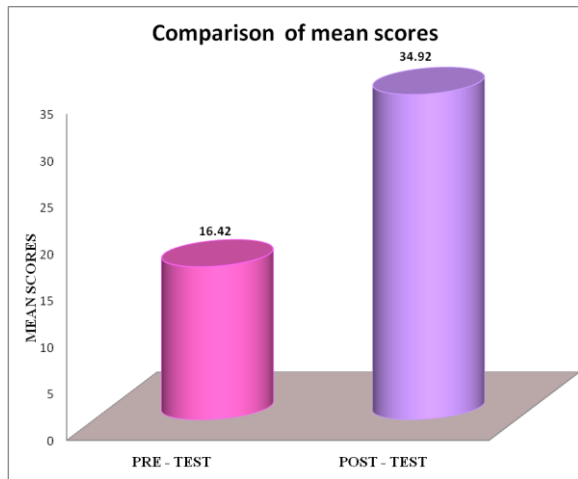
Table 1 shows that, the mean  $\pm$  SD of pretest score is  $16.42 \pm 3.004$  and for post test it was  $34.92 \pm 3.795$ . The difference between pre and post test showed that there is a significant improvement in the post test score when compared to pre test score

which is statistically significant.( $t=24.177$ ,  $P<0.001$ )

**Table 1: Comparison of pre-test and post-test knowledge scores of breast cancer patients N=50**

Knowledge scores	Mean	SD	Range	t - value	P value
Over all pre test scores	16.42	3.004	10-22	24.177	P<0.001
Over all post test scores	34.92	3.795	23-40		

df= 49, Critical value of  $t= 1.990$



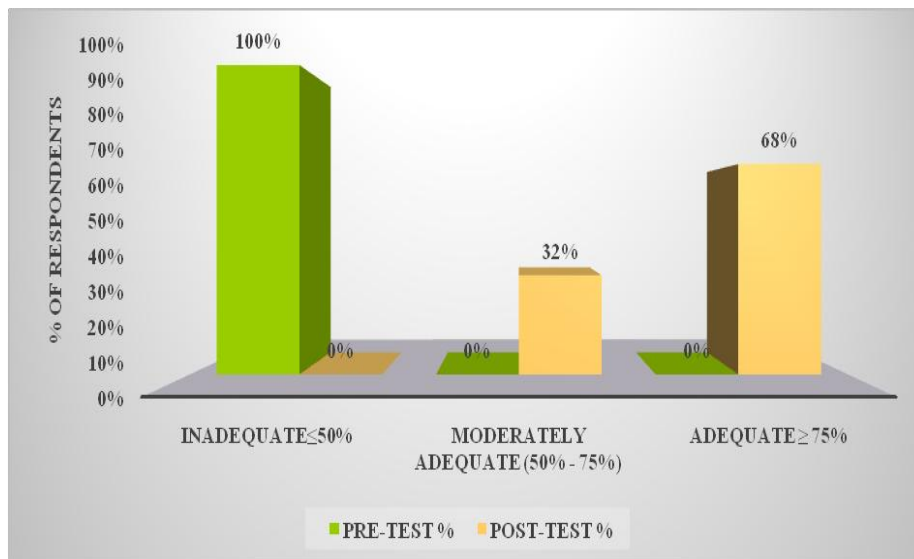
**Figure 1: Comparison of Pre-test and Post-test knowledge mean scores of breast cancer patients.**

### Section 3: Percentage category of pre and post test knowledge scores

**Table 2: Over all percentage of pre test and post test knowledge score of breast cancer patients regarding post mastectomy patients. N=50**

Knowledge	Pre-Test		Post-Test	
	Frequency	%	Frequency	%
Inadequate $\leq 50\%$	50	100%	0	0%
Moderately Adequate (50% - 75%)	0	0%	16	32%
Adequate $\geq 75\%$	0	0%	34	68%
Total	50	100%	50	100%

Table 2 shows that, in pre test 100% of the respondents had inadequate knowledge when compared to the post test scores, where as in post test it was noticed that 68% of the samples had an adequate knowledge, 32% of them had moderate knowledge and none of them had inadequate knowledge regarding post mastectomy exercises.



**Figure 2: Over all percentage of pre test and post test knowledge score of breast cancer patients regarding post mastectomy patients.**

### Section 4: Association between knowledge on post mastectomy exercises with demographic variables.

Table 3 shows that, there was significant association between type of family and family history of cancer in post-test knowledge score ( $P=0.05$ ).

There was no association with other demographic variables such as age of breast cancer patients, marital status, religion, educational status, occupational status, monthly income and source of informatio

**Table 3: Association between post-test knowledge scores with demographic variables N=50**

Demographic Variables		Knowledge Level		Chi square value( $\chi^2$ )	df	P Value
		Below Median	Above Median			
		N	N			
Age	±<40	7	5	FEP=.575		P=>0.05 <sup>NS</sup>
	>40	23	15			
	Total	30	20			
Type of Family	Nuclear	23	20	FEP=0.020		P=<0.05 <sup>S</sup>
	Joint	7	0			
	Total	30	20			
Family History of Cancer	Yes	12	8	0.000	1	P=<0.05 <sup>S</sup>
	No	18	12			
	Total	30	20			
Source of Information	Electronic Media/Print Media	15	18	8.55	1	P=>0.05 <sup>NS</sup>
	Health Personnel/Family Member/Relative/Friend	15	2			
	Total	30	20			

\*\*FEP= Fisher's Exact Probabilities, NS= Not Significant, S= Significant

## DISCUSSION

The findings of the study demonstrated that the mean pre-test score (16.42) was lower than the post-test score (34.92). The computed 't' value of 24.2 was more than the table value (t=1.990, P<0.001). This reveals that there is a significant difference between pre-test and post-test knowledge scores at a 0.001 level of significance. Thus, it clearly showed that the video assisted teaching was effective in increasing the knowledge of subjects. The study concluded that video assisted teaching program was effective in improving the knowledge of subjects under study.

The findings of the present study are also consistent with that of a study by faculty of nursing, Jubilee Memorial Hospital, Trivandrum, which assessed the effectiveness of structured education programme regarding post mastectomy exercises among women undergoing mastectomy. The results of the study showed that structured education program was effective in improving knowledge of women undergoing mastectomy regarding post mastectomy exercises. [12]

The findings of the study also showed that knowledge score has significant association with type of family and family history of cancer. This could be due to families who had a history of cancer had some knowledge on cancer and its treatment and hence showed more interest towards learning.

## CONCLUSION

The study concluded that teaching on various aspects of post mastectomy exercises was an effective method for providing adequate knowledge and help breast cancer patients to reduce complications by releasing muscular tension, preventing contractures and restoring strength. The study highlights that video assisted teaching is an effective instructional method & educational tool in imparting knowledge among breast cancer patients who undergo mastectomy.

On the basis of the findings it is recommended that a similar study may be replicated using a larger number of samples. It is also recommended that different methods of teaching along with frequent reinforcement play a important role in improving the knowledge of breast cancer patients.

Hence, educational sessions along with educative material like pamphlet, leaflet, poster should be emphasized which would improve the knowledge of breast cancer patients who undergo mastectomy.

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How to cite this article: Ashwini KN, Satyanarayana TE, Ramesh C. A study to assess the effectiveness of video assisted teaching on knowledge regarding post mastectomy exercises among breast cancer patients at Kidwai memorial institute of oncology, Bangalore. *Int J Health Sci Res*. 2018; 8(8):176-181.

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