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Effectiveness of Post-Operative Exercises on Upper Limb Function among Clients with Modified Radical Mastectomy at selected Cancer Hospitals, Hyderabad, Telangana, India

T. Sujatha^{*1} and Dr. Suraj J Masih²

¹Research Scholar, Himalayan University, Itanagar, Arunachal Pradesh, India

²Research Supervisor, Himalayan University, Itanagar, Arunachal Pradesh, India

About the Authors



T. Sujatha is a Research Scholar, Himalayan University, Itanagar, Arunachal Pradesh, India. She has attended various seminars and conferences. She is the author of a number of research and review articles which are published in many reputed national and international journal. She is currently pursuing her PhD under the guidance of Dr. Suraj J Masih.



Dr. Suraj J Masih is Ph.D. Guide at Himalayan University, Itanagar, Arunachal Pradesh, India. She is active researcher with many publications in her name. She is the author of a number of research and review articles which are published in many reputed national and international journal. She has attended and organised various National and International conferences.

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*Corresponding author: T. Sujatha, Research Scholar, Himalayan University, Itanagar, Arunachal Pradesh, India.

Abstract

Objective: The study was conducted to assess the Effectiveness of Post-Operative Exercises on Upper Limb Function among Clients with Modified Radical Mastectomy at selected Cancer Hospitals, Hyderabad, Telangana. Study objectives were to (i) Assess the upper limb function among the clients with Modified Radical Mastectomy before the intervention. (ii) Demonstrate post-operative upper limb function exercises to the clients with breast cancer posted for Modified Radical Mastectomy. (iii) Assess the effectiveness of post-operative exercises on upper limb function among clients with Modified Radical Mastectomy. (iv) Find out the association between the upper limb function among clients with Modified Radical Mastectomy and selected variables.

Methodology: Quantitative evaluative research approach was used for this study. The study was conducted at selected cancer hospitals, Hyderabad, Telangana. Pre-test post-test group only design adopted. The sample comprised of 30, 15 sample taken as experimental group, 15 sample taken as experimental group. Sample was selected by purposive sampling technique. The data was collected by observational checklist.

Results: The results revealed that pretest mean score was 64.03 and after intervention the post-test mean score was 57.16 there was a significant difference between the pre-test and post test scores from day 1 to day 5 of the clients at the level of $p=0.05$, computed 't' value is more than table

value hence null hypothesis was rejected. The obtained' value was 8.15, found greater than 't' table value.

Conclusion: The study concluded that most of the sample was improved upper limb function from day 1 to day 5. There is a significant difference between pretest and post- test scores, The findings point out that demonstration of teaching programme would improve the upper limb function of clients with Modified Radical Mastectomy.

Keywords: Post-operative exercises; Pre-test; Post-test; Upper limb function; Modified radical mastectomy

Introduction

Cancer is a “taboo” and the term cancer itself causes uneasiness to people who often believe it is untreatable. It takes up much of person’s time in thinking about treatment and what the future holds. The term cancer has been derived from the Greek word “Karakinos”. In Ayurveda the disease has been termed as “Karkataka” [1].

Breast cancer arises in the lining cells (epithelium) of the ducts (85%) or lobules (15%) in the glandular tissue of the breast. Initially, the cancerous growth is confined to the duct or lobule (“in situ”) where it generally causes no symptoms and has minimal potential for spread (metastasis). Over time, these in situ (stage 0) cancers may progress and invade the surrounding breast tissue (invasive breast cancer) then spread to the nearby lymph nodes (regional metastasis) or to other organs in the body (distant metastasis). If a woman dies from breast cancer, it is because of widespread metastasis.

Breast cancer treatment can be highly effective, especially when the disease is identified early. Treatment of breast cancer often consists of a combination of surgical removal, radiation therapy and medication (hormonal therapy, chemotherapy and/or targeted biological therapy) to treat the microscopic cancer that has spread from the breast tumor through the blood. Such treatment, which can prevent cancer growth and spread, thereby saves lives [2]. Cancer is public health burden in which there is uncontrolled tissue growth which results from an imbalance between cell division a Cancer. Cancer can affect people of all ages, and a few types of cancer are more common in children. In India most frequently cancers in men are lung, esophagus, and stomach and larynx. In female’s cervix cancer, breast, ovary and esophagus are most common cancers [3]. Cancer is a group of more than 200 disease characterized by uncontrolled and unregulated growth of cells. It is a major health problem that occurs in people of all ethnicities. Many cancer people associated

with pain and death and set realistic goals to meet the challenges inherent in caring for patient with cancer [4-8]. Breast cancer is cancer that forms in tissues of the breast, usually the ducts and lobules. it occurs in both men and women, but very rare in males. Globally breast cancer is the most common in females, estimated 1.4 million cases each year more than half of the 400,000 breast cancer death cancers occurring globally [9]. In Indian, the incidence of breast cancer is increasing with an estimated 80,000 new cases diagnosed annually. In India in 2007 48,170 women died with breast cancer, In 2010, 50,00 women’s died with breast cancers. Cancer mortality in Andhra Pradesh 3,863. Lowest mortality rate in Andaman and NICO bar Islands with 19 deaths annually. Incidence of United States in 2011-New cases 230,480 females & 2,140 males. Mortality rate in females 39,520, Males 450 [9]. Secondary Prevention of breast cancer by monographic screening in women of age 50 years and old reduces mortality from breast cancers should range of motion excises are secondary prevention for the clients with modified radical mastectomy which prevents complications like lymph edema. After mastectomy the client needs to learn about post-operative care and care of breast prosthesis. In the early post-operative period. Encourage the client to focus on post-operative upper limb exercises to prevent complications like lymph edema, infection, seroma, hematoma and cellulitis. There are various types of exercises for the prevention of these complications. They are: Standing exercises- Shoulder stretch, Chest wall stretch, Rope turning, Pulley tugging. Lying down exercises- Wand exercise, Elbow winging exercise. Sitting up exercises - Shoulder blade stretch, Shoulder blade Squeeze, Side bending exercises [10].

The Nurse need to be knowledgeable about specific types of cancer treatment options, protocols for the management of side effects of therapy, and supportive therapies for individuals, who are diagnosed with cancer. Nurses are in strategic position to educate and

encourage practicing post-operative exercises after Modified Radical Mastectomy [11].

Need for the Study

In 2020, there were 2.3 million women diagnosed with breast cancer and 685 000 deaths globally. As of the end of 2020, there were 7.8 million women alive who were diagnosed with breast cancer in the past 5 years, making it the world's most prevalent cancer. There are more lost disability-adjusted life years (DALYs) by women to breast cancer globally than any other type of cancer. Breast cancer occurs in every country of the world in women at any age after puberty but with increasing rates in later life. Breast cancer mortality changed little from the 1930s through to the 1970s. Improvements in survival began in the 1980s in countries with early detection programmes combined with different modes of treatment to eradicate invasive disease [11]. Breast cancer is the most common malignancy in women in the United States. The incidence of breast cancer in the United States had been increasing gradually for the past 30 years from 2006-2007. The number of cases of invasive breast cancer diagnosed women in U.S. Breast cancer is estimated to affect over 190,000 American Women in 2009. The global incidence of mastectomy cases per annum 33, 814 million, the incidence of mastectomy in India 90,000, the incidence of mastectomy in Andhra Pradesh 12 to 16 /1000 population [12]. There is also a trend of increasing morbidity of breast cancer in China. It is estimated to be 23/100, 000 in China in 1999, account for the 7 -10% of all types of cancer. The prevalence of breast cancer high in China. The morbidity was estimated to be 53.4/100, 000 in Shanghai in 2002 [13]. Report of Adyar cancer institute at Chennai shows that in the year of 2001, incidence had been increased to 52.7% in comparison to 50.9% during 2010 [14]. Age-standardized breast cancer mortality in high-income countries dropped by 40% between the 1980s and 2020. Countries that have succeeded in reducing breast cancer mortality have been able to achieve an annual breast cancer mortality reduction of 2-4% per year. If an annual mortality reduction of 2.5% per year occurs worldwide, 2.5 million breast cancer deaths would be avoided between 2020 and 2040 [15]. The strategies for improving breast cancer outcomes depend on fundamental health system strengthening to deliver the treatments that are already known to work. These are also important for the management of other cancers and other non-malignant non communicable diseases (NCDs). For example, having reliable referral pathways from primary care facilities to district hospitals to dedicated cancer centres

[16]. The establishment of reliable referral pathways from primary care facilities to district hospitals to dedicated cancer centers is the same approach as is required for the management of cervical cancer, lung cancer, colorectal cancer and prostate cancer. To that end, breast cancer is an "index" disease whereby pathways are created that can be followed for the management of other diseases. The complications can occur after Modified Radical Mastectomy like Lymph edema, contractures, swelling and edema. Post operative upper limb exercises are to restore arm function, self exercises help in preventing progression from lymph edema and contractures [17]. Oncology nursing is one of the specialized areas with a rapid growth of cancer treatment modalities. The education of self, other nurses, clients and care givers and general public is recognized as an important role component of the oncology nurse's role. Today's nurse's role is enhanced as caregivers, educators, researchers, innovators, collaborators and communicators. The oncology nurse must have an adequate background in oncology nursing to meet the growing need for much of knowledge of cancer, its causes, treatment and effects [18].

Methodology

Quantitative evaluative approach was used with Pre – experimental research design (one group pre-test - post-test design). The study conducted at selected cancer hospitals in Hyderabad, Telangana. The sample used for the study was 15 experimental group, 15 control group who fulfils the inclusion criteria. The sample size is 30 and the sample was selected by purposive sampling technique. The method of data collection by observation method and tool used for data was modified observational checklist. Independent variable was post-operative exercises, Dependent variables upper limb function. age, religion, marital status, Parity education, occupation, income of family, Body mass index, Diagnosis, Period of illness, Duration of hospitalization, source of information. Split half method was used to find out the reliability of the tool. The research tool is organized into 3 sections (section A: sociodemographic data, Section B: modified observational checklist and Section C: lymphedema scoring checklist).

Results

Ordinarily the amount of data collected in a study is extensive to be reliably described in a study by mere perusal. The data was organized, tabulated, analyzed and interpreted by using descriptive and inferential statistics.



Figure 1: Distribution of upper limb function of clients with modified radical mastectomy in pre-test and post-test.

In Figure 1 the graph shows that pre-operatively 30 clients were (100%) able to perform exercises independently, After Modified Radical Mastectomy, After intervention post operative day 1 thirty (100%) were not able to perform upper limb exercises post operative day 2 two out of thirty (6.7%) were not able to perform upper limb exercises, twenty eight out of

thirty (93.3%) able to perform with assistance on post-operative day 3 and three out of thirty (10%) were able to perform upper limb exercises with assistance, twenty seven out of thirty (90%) were able to perform independently. It is interesting to note that post op day 4 and 5 able to perform upper limb function exercises independently with the frequency of thirty (100%).

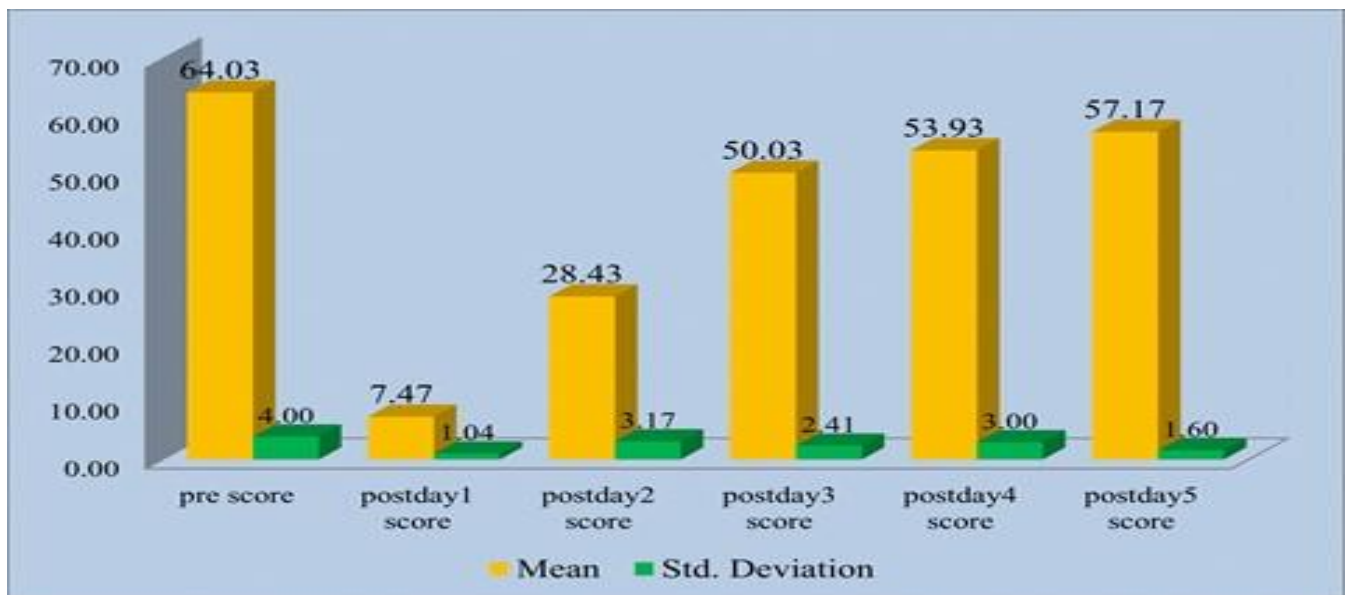


Figure 2: Mean, standard deviation and paired 't' test values of pre-test and post-test scores of clients with modified radical mastectomy.

In Figure 2 pre-test mean score was 64.03 before mastectomy and after Mastectomy on the 1st postoperative day mean score was 7.46 on 5th post-operative day, post-test mean score was 57.16. There was a significant difference in the post test scores from

day 1 to day 5 of the clients who underwent mastectomy, at the level of $p=0.05$, computed 't' value is 8.15, more than table value.

In the present study there were no clients having lymph edema of any grades after performing post-

operative exercises on upper limb function which is estimated by using Irsia Bhatti lymphedema scale.

Table 1: Distribution of upper limb function of clients with modified radical mastectomy in pre-test and post-test (n=30).

Upper Limb Function	Not able to perform		Able to perform with assistance		Able to perform independently	
	f	%	f	%	f	%
Pre-test	-	-	-	-	30	100
Post op day 1	30	100	-	-	-	-
Post op day 2	2	6.7	28	93.3	-	-
Post op day 3	-	-	3	10	27	90
Post op day 4	-	-	-	-	30	100
Post op day 5	-	-	-	-	30	100

The above table representing pre-operatively 30 clients were (100%) able to perform exercises independently, After Modified Radical Mastectomy, After intervention post-operative day 1 thirty (100%) were not able to perform upper limb exercises post operative day 2 two out of thirty (6.7%) were not able to perform upper limb exercises, twenty eight out of thirty (93.3%) able to

perform with assistance on post-operative day 3 and three out of thirty (10%) were able to perform upper limb exercises with assistance, twenty seven out of thirty (90%) were able to perform independently. It is interesting to note that post op day 4 and 5 able to perform upper limb function exercises independently with the frequency of thirty (100%).

Table 2: Mean, standard deviation and paired ‘t’ test values of pre-test and post test scores of clients with modified radical mastectomy (n=30).

	Pre-test	Post-test				
		Day 1	Day 2	Day 3	Day 4	Day 5
Mean	64.03	7.46	28.43	50	53.9	57.16
Standard deviation	3.99	1	3.1	2.41	3	3.22
Standard error	0.72	0.19	0.57	0.44	0.54	0.29
Paired ‘t’ test	-	70.6	34.2	15.3	10	8.15

The above table that the obtained pre-test mean score was 64.03 and after intervention the post-test mean score was 57.16 there was a significant difference between the pre-test and post test scores from day 1 to day 5 of the clients at the level of $p=0.05$, computed ‘t’ value is more than table value hence null hypothesis was rejected.

Objectives

Objective 1: Assess the upper limb function among the clients with Modified Radical Mastectomy before the intervention.

Preoperatively assessed upper limb function of the clients who posted for modified radical mastectomy, clients who are in experimental group had complete function of upper limb.

Objective 2: Demonstrate post-operative upper limb function exercises to the clients with breast cancer posted for Modified Radical Mastectomy.

Investigator demonstrated Upper limb exercises preoperatively to the clients who posted for modified radical mastectomy in experimental group, clients were very curious to learn those exercises.

Objective 3: Assess the effectiveness of post-operative exercises on upper limb function among clients with Modified Radical Mastectomy.

The nurse researcher assessed upper limb function of clients postoperatively there was significant change in from day 1 postoperative period to day 5 postoperative period, the clients who practiced upper limb exercises they haven't developed edema or pain of upper limb after surgery, also investigator educated to patients' continuity of exercises till period of one month which causes preventing upper limb function.

Objective 4: Find out the association between the upper limb function among clients with Modified Radical Mastectomy and selected variables.

There is no significant association found between selected demographic variables and upper limb function.

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