



The first Scientific Conference for Medical and Health Sciences
University of Zawia - 27-28/02/2024

المؤتمر العلمي الأول للعلوم الطبية والصحية
جامعة الزاوية – 27-28/02/2024م



Physiotherapy and mastectomy (the physiotherapists' professionals' role in improving life for mastectomy patients in Al-Zawia, Libya)

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Abstract:

The Physiotherapy interventions post-operation of patients after mastectomy are important and a complex process. When muscle strength, shoulder range of motion ROM, incisional pain, chest expansion, and edema are considered the main complications after mastectomy. physiotherapy management such as therapeutic exercises, hydrotherapy, massage, and kinesiotherapy can be helpful and ensure good outcomes for the mastectomy. The study aims to determine the complications, goals, and availability of a Physiotherapy program for mastectomy patients in Al-Zawia, Libya to show the physiotherapy role with mastectomy patients. The study utilized a questionnaire that was distributed to a total of 108 physiotherapists. Only 100 physiotherapists responded, there were 66 females, and 34 of them were male. This study found that there are good interventions and access at physiotherapy centers to decrease shoulder functions, restriction the shoulder joint, and decrease muscle tone, also the study showed that there are many methods used to treat the pain, such as manual lymphatic drainage, exercises, Active exercises, breathing exercises (diaphragm) and effective coughing. The study showed there was a low level of patient's access to rehabilitation centers with chronic pain and lymphedema while chronic pain and reduction in lymphedema pain lead to reduced quality of life. Also, there are low methods used as electrical stimulation, passive

exercises, bio-stimulation laser, and electrical stimulation such as Iontophoresis iodine and TENS, while these are important methods but are low to use.

Keywords: Mastectomy, edema, cancer, physiotherapy, physiotherapists.

Introduction

Cancer is a term used for diseases in which abnormal cells divide without control and can include other tissues (Mehta, et al, 2018). Breast cancer is a type of cancer originating from breast tissue, most commonly from the inner lining of milk ducts or the lobules that supply the ducts with milk. Breast cancer is one of the most common malignancies in women worldwide. It can be a life-threatening disease for women, a surgical removal of partial or complete breast tissue, surrounding tissues, and nearby lymph nodes are called mastectomy. There are 5 different types, namely, lumpectomy, simple mastectomy, radical mastectomy, extended radical mastectomy, and modified radical mastectomy (Mehta, et al 2018).

The Physiotherapy interventions post-operation of patients after mastectomy are important and a complex process. Moreover, physiotherapy interventions should be combined with other healthcare professionals such as oncologists, surgeons, radiotherapists, and psychologists to ensure optimal therapeutic outcomes (Mehta, et al 2018). Reduced muscle strength, impaired shoulder ROM, incisional pain, reduced chest expansion, and edema are considered the main complications after mastectomy. Physiotherapy management such as therapeutic exercises, hydrotherapy, massage, and kinesiotaping can be helpful and ensure good outcomes (Mehta, et al 2018).

Regular physical activity is associated with the reduction and prevention of the occurrence of cancer and mortality (Landry, S. 2018), and improves mental health after the treatment of cancer (Biskup. M. et al 2015). Regular exercises have many physiological, psychological, and social benefits, improve well-being and support independent lifestyle behaviour (Sniegowska, W et al 2018).

Because of the increasing of breast cancer that leads to mastectomies among women in the world. Physiotherapy interventions were observed as the ways to help the patient to improve health and quality of their life, the study aimed to determine and describe the symptoms and the available Physiotherapy programs for mastectomy patients in Az-Zawia, Libya, according to mastectomy symptoms that referred patients to physiotherapy centres and the physiotherapy treatment used with the mastectomy patients' for helpful the patient to improve health and quality of life.

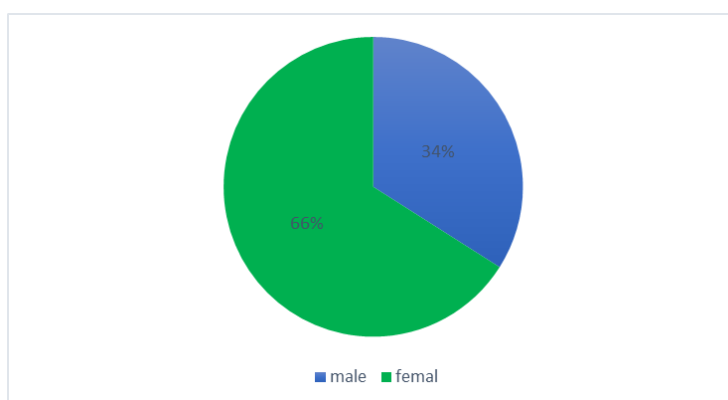
Methodology

The quantitative design was used to determine the physiotherapists' professionals' role in improving life for mastectomy patients in Az-Zawia, Libya. according to symptoms that necessitate the intervention of a physical therapist, the goal of physiotherapy in the treatment of mastectomy cases, and Physiotherapy treatment. The study was conducted in Az-Zawia, Libya and the participants selected were according to the availability of physiotherapists at centres during the study. A self-administered questionnaire was used to collect data. The authors independently developed the self-administered questionnaire for this study and undertook comprehensive assessments to establish its validity. This involved a thorough examination of the questionnaire's consistency and accuracy, ensuring a robust instrument for data collection. The data was collected by an online questionnaire. and the data collection of the researchers used a questionnaire consisting of four sections. Section A consisted of 2 questions relating to biographic information, section B contained 4 questions relating to Mastectomy complications that necessitate the intervention of a physical, Section C contained 5 questions relating to the goal of physiotherapy in the treatment of mastectomy cases, and Section D contained 3 questions relating to Physiotherapy methods other treatment ways used in mastectomies patients' treatment. Data analysis was done using counting the number of values present for the sampled data elements. Percentages were calculated using the sets of seen and expected values. The cleaning of the data used Microsoft Excel Version 2016 and Microsoft Word 2016 for illustrative diagrams.

Result

Demographic information

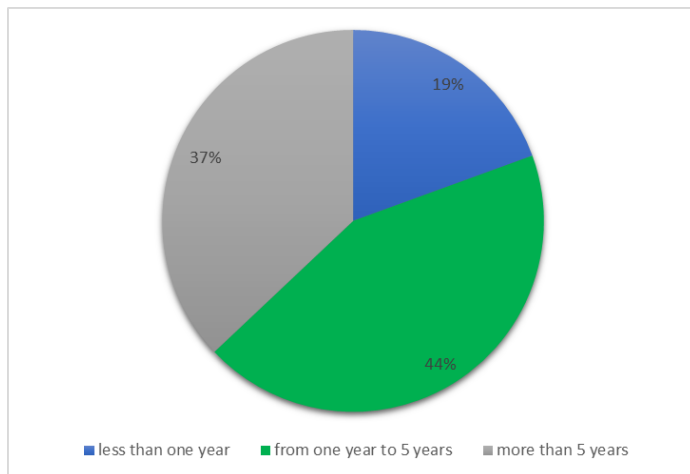
The diagram (1) shows the percentage of demographic information



Of the 100 physiotherapists who responded, there were 66 females and 34 males. The response rate was 92.5% (n=100)

Work experiences

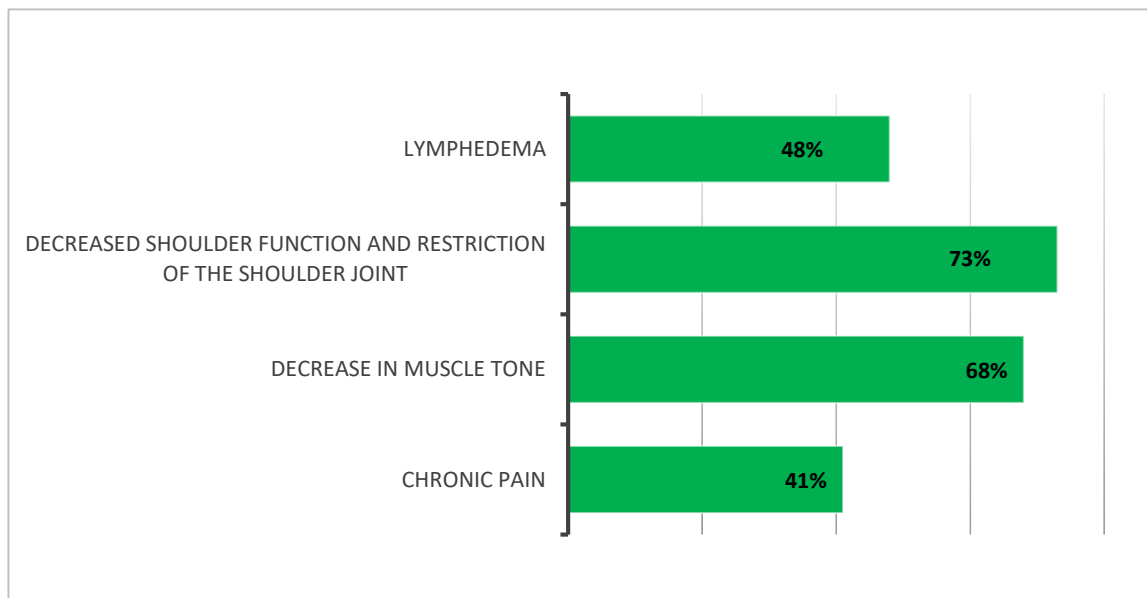
The diagram (2) shows the percentage of work experiences



The work experiences are less than one year 19% physiotherapists, from one year to 5 years 44% physiotherapists and the work experiences more than 5 years 37% physiotherapists

Mastectomy complications that necessitate the intervention of a physical therapist

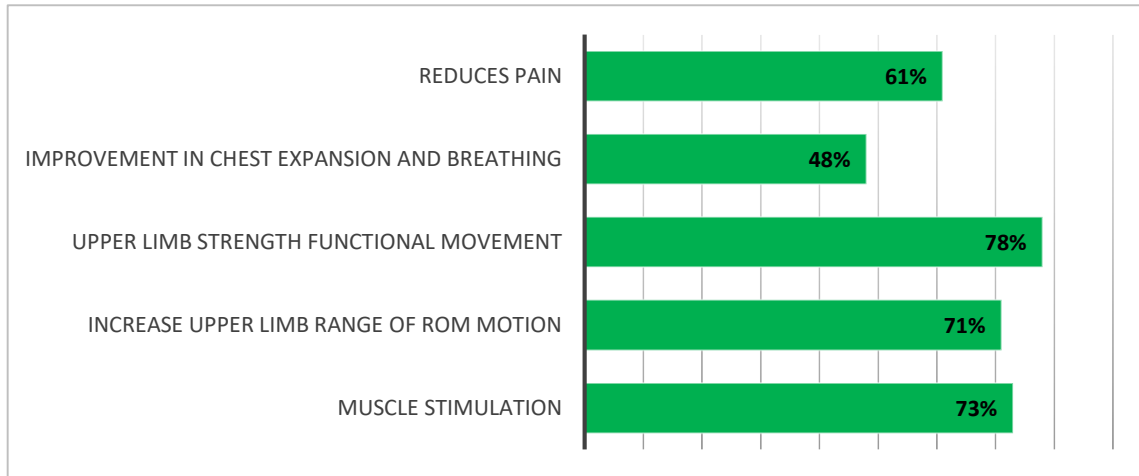
The illustrative diagram (3) shows the percentage of mastectomy symptoms that necessitate the intervention of a physical therapist



The illustrative diagram shows the percentage of mastectomy symptoms that necessitate the intervention of a physical therapist when 68 of physiotherapists the decrease in muscle tone, 73 of the physiotherapists decreased shoulder function and restriction of the shoulder joint, 41 of the physiotherapists had Chronic pain, and 48 of physiotherapists lymphedema.

The goal of physiotherapy in the treatment of mastectomy cases

The illustrative diagram (4) shows the percentage of the goal of physiotherapy in the treatment of mastectomy cases

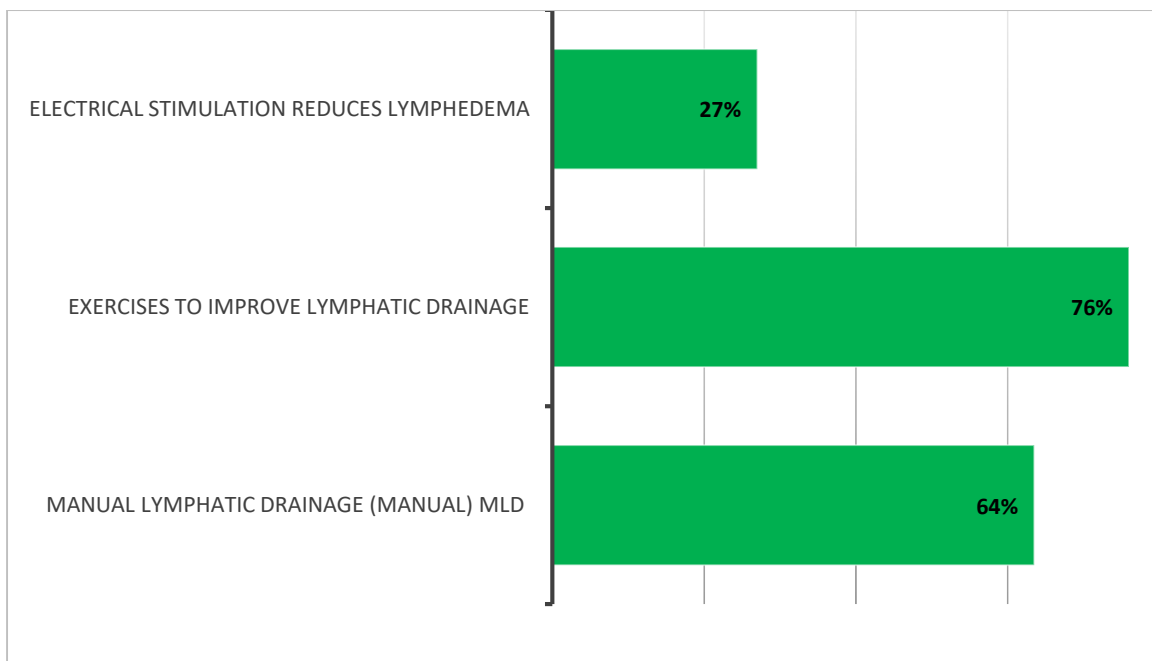


The illustrative diagram shows the percentage data of the goal of physiotherapy in the treatment of mastectomy cases in the muscle stimulation 73%, Increased upper limb range of ROM motion 71%, Upper limb strength functional movement 78%, reduced pain 61%, and improvement in chest expansion and breathing 48%.

Physiotherapy methods used in mastectomy patients' treatment

Lymphatic drainage

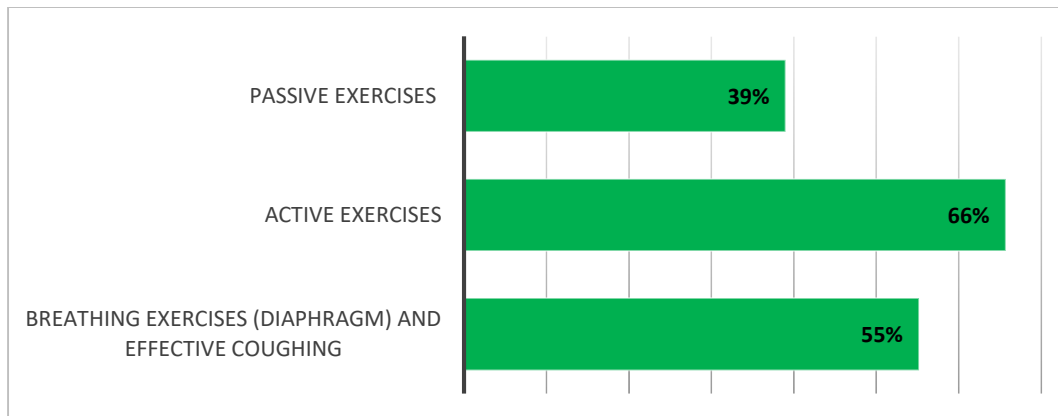
The illustrative diagram (5) shows the percentage of lymphatic drainage



The illustrative diagram shows the percentage of the methods they could use to treat lymphatic oedema when 64% of the participants used Manual lymphatic drainage (Manual) MLD, 76% used Exercises to improve lymphatic drainage, and 27 used Electrical stimulation to reduce lymphedema.

Kinesiotherapy

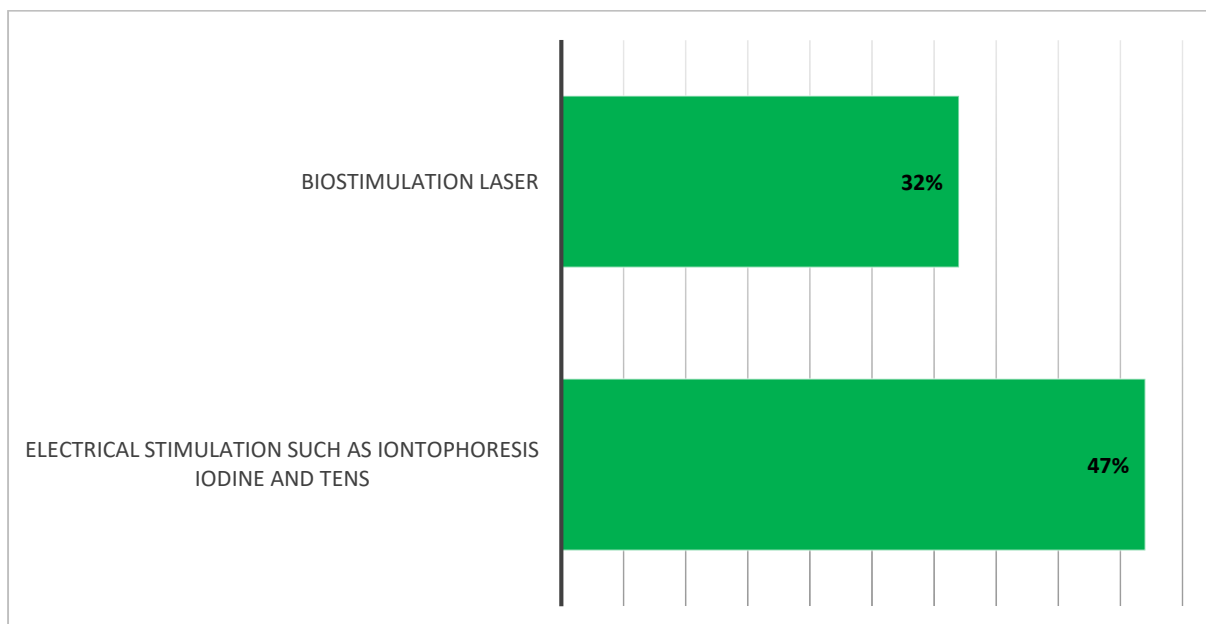
The illustrative diagram (6) shows the percentage of kinesiotherapy



The illustrative diagram shows the type of kinesiotherapy the participants can use with their patients, 55% of physiotherapists use Breathing exercises (diaphragm) and effective coughing, 66% use Active exercises, and 39% use Passive exercises).

Other treatment ways

The illustrative diagram (7) shows the percentage of other treatment ways



The Illustrative diagram shows the percentage of treatments used by the physiotherapists with their patients, 47% use Electrical stimulation such as Iontophoresis iodine and TENS, and 32% use biostimulation laser.

Discussion

Mastectomy complications that necessitate the intervention of a physical therapist

Chronic pain is a related factor in post-operative pain that leads to reduced quality of life and motor dysfunction, in this study the findings found that the majority of physiotherapist's interventions decreased shoulder functions and restriction of the shoulder joint. This was like the study done in India by Mehta et al., (2018) found the Impaired ROM of the shoulder joint is due to incisional pain that causes muscle guarding and tenderness of the shoulder joint. Physiotherapist's interventions decrease muscle tone similar to the results in the study done by Erden, (2022); Ay, et al. (2014) showed that the surgical treatment of breast cancer can cause many undesirable changes in the upper limb on the operated side such as lymphedema and decreased muscle tone. All these symptoms need physiotherapy treatment, which aims to prevent, reduce, or eliminate the consequences of surgical intervention, and to improve the quality of life of patients after mastectomy.

The goal of physiotherapy in the treatment of mastectomy cases

The goal of physiotherapy improve the quality of mastectomy patients' lives. The majority of the participants' goals were to increase upper limb strength functional movement, increase upper limb range of motion, and muscle stimulation confirmed by several researchers (Erden et al., 2022; Ribeiro et al., 2019) the use of upper limb range of motion exercises during rehabilitation may contribute to recovering shoulder movement and upper limb function, the evidence on the effectiveness of range of motion exercises for improved abduction, flexion, and external rotation six months after surgery was low and it was proven that the application of this electrical stimulation significantly alleviated pain to its analgesic action (by reducing cortical electrical activity). The study by Ay et al., (2014), also showed that improvement in upper limb and hand function done by physiotherapist's exercises with a one-hour home program led to decreased pain and improved hand function. According to Jigar et al., (2017) during vigorous or prolonged exercise, it is apparent that the speed and depth of respiration are increased.

Physiotherapy methods used in mastectomy patients' treatment

Lymphatic drainage

After mastectomy and the surgery one of the side effects was edema, there were methods used that affected and helped to remove edema. There are different mechanisms, actions, and procedures help physiotherapists as the findings reported that the exercises and manual lymphatic drainage were high methods of treatment used for their patients that confirmed by Jigar et al., (2017), the Physiotherapy intervention used to exercise to restore ROM and edema prophylaxis were given till the patient gets discharged. The exercises were initiated even when the drainage tubes and sutures were still in place. A study done by Ay et al., (2014) showed that manual lymphatic drainage (MLD) resulted in a significant reduction in lymph volume and an improvement in arm parameters and symptoms related to edema.

Kinesiotherapy

Effectuated side influences on the daily-life activity of the patients, the physiotherapist's interventions to treat the affected side to improve the quality of life and can use modalities of physical therapy for pain and increase range of motion. Most of the physiotherapists observed the active exercises, use of deep breathing exercises, and effective coughing as the methods used at rehabilitation centers. The same results shown by other researchers (De Groef et al., 2015 & Buragadda et al., 2015) reported that active exercises and passive mobilization were effective in treating postoperative pain and impaired ROM for mastectomy patients and can use breathing exercises and effective coughing for the patients to improve their breathing quality and lymphatic drainage and can use diaphragmatic breathing exercises by patients themselves also.

Other treatment ways

The treatment methods and techniques reduce anxiety, depression and increase the relaxation of patients, and improve of quality of their life. With that, some treatments cost more and are careful when used more than others such as laser treatment and electrostimulation. Chappell et al., (2019) reported that laser successfully pain relief decreases lymphedema and treats the skin with the release of scar contractures through stimulation of the local inflammatory response which increases blood flow. The laser can be treatment of chronic pain and after breast cancer surgery also highlights the importance of scar release, nerve decompression, and increased perfusion to the region of pain using bio-stimulation lasers in their treatment. According to Silva et al. (2014), TENS promoted electrical modification in the parietal region and a decrease in pain. As our study shows 47% of physiotherapists use Electrical stimulation such as Iontophoresis iodine and TENS in treatments.

Conclusions

This study found that there are good interventions and access at physiotherapy centers to decrease shoulder functions restrict the shoulder joint and decrease muscle tone, The study showed that most goals of physiotherapy improve the quality of mastectomy patients' lives by reducing pain, increasing upper limb strength functional movement, stimulated patients' muscle and increase upper limb range of ROM motion of mastectomy patients. There are many methods used to treat the patients as manual lymphatic drainage, exercises, Active exercises, breathing exercises (diaphragm), and effective coughing. This study showed there is low patients' access to rehabilitation centers with chronic pain and lymphedema while chronic pain and reduction in lymphedema pain lead to reduced quality of life. While study showed that low in physiotherapist's goals to improvement in chest expansion and breathing. While there are low methods used as electrical stimulation, passive exercises, bio-stimulation laser, and electrical stimulation such as Iontophoresis iodine and TENS, these are important methods but are low to use.

Recommendations

- Recommend initiating early physiotherapy for mastectomy patients, suggesting referral of those experiencing chronic pain to rehabilitation centers, and integrating chest expansion exercises into their physiotherapy program.
- Recommend increasing the adoption of beneficial methods such as electrical stimulation and underscore the importance of conducting further studies to investigate the underutilization of essential techniques in the field.

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