

# Knowledge And Awareness of Pilates in Post Operative Breast Cancer Rehabilitation Among Physiotherapists of Surat District - A Cross-Sectional Survey Study

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## ABSTRACT

**Purpose of the study:** To determine the knowledge and awareness of Pilates in post-operative breast cancer rehabilitation among physiotherapists of Surat district.

**Relevance:** Breast cancer survivors' levels of activity may be significantly and negatively impacted by their treatment for the disease; such as decrease upper extremity muscle strength and functioning, reduce range of motion, pain, stiffness, lymphedema, depression, fatigue and they all have detrimental effects on the quality of life in terms of health. Pilates is now used in the rehabilitation of breast cancer survivors. Pilates is a low-impact workout that helps with posture, strength, flexibility, range of motion, stress reduction, and mental control. The principals of Pilates, such as breathing, concentration, body alignment, accuracy, control, and flow, represent the basis of the exercises.

**Participants:** This research study was conducted among 77 clinical and academic physiotherapists aged between 25 to 55 years of surat district.

**Methods and analysis:** A per-designed, per-tested, Structured questionnaire on the knowledge and awareness of Pilates was given to the participants via online and offline both the modes.

Knowledge and awareness among physiotherapists were tested using descriptive analysis method

**Results & Conclusion:** Most participants were female (89.6%), aged 21-25 (66.2%), and held a Bachelor's in physiotherapy (98.7%). Musculoskeletal practice was common (34.6%), with many having 2-4 years of experience (75.3%). Awareness of Pilates varied, with 35.1% moderately aware and 36.4% slightly aware of its application in breast cancer rehab. Notably, 27.3% were unaware of Pilates for breast cancer symptoms. Regarding Pilates implementation, 58.5% agreed on enforcing it for breast cancer-related issues, and 85.7% emphasized the importance of education. Looking forward, 79.5% were interested in pilates workshops, and 28.8% considered Pilates a potential breast cancer treatment.

**Keywords:** Pilates, Breast Cancer, Awareness, Physiotherapist

## INTRODUCTION

Breast cancer is the most common cancer among Indian women, with an age-adjusted

mortality rate of 12.7 per 100,000 women and the occurrence rate as high as 25.8 per 100,000 women <sup>(1)</sup>. Male breast cancer is rare and

accounted for 1.03% of total breast cancer cases<sup>(2)</sup>.

The glandular tissues and the stromal (supporting) tissues are the two basic tissue types that make up the breast. The stromal tissues consist of the breast's fatty and fibrous connective tissues, while the glandular tissues contain the milk-producing glands (lobules) and the ducts (the milk passageways). The immune system's lymphatic tissue, which drains waste and cellular fluids, is also present in the breast. There are various types of tumors that can appear in various breast regions. The majority of breast tumors are induced by benign (non-cancerous) changes.<sup>(3)</sup>

Mammography is a frequently used screening method for finding breast cancer and has been shown to significantly decreased mortality. Over the past ten years, additional screening techniques, such as Magnetic Resonance Imaging (MRI), which is more sensitive than mammography, have also been used and studied<sup>(4)</sup>. The Prevalence of breast cancer has increased globally due to ageing, lifestyle habits such as high fat diet, alcohol intake, smoking, physical inactivity and reproductive history , as well as family history of breast cancer<sup>(5)(6)(7)</sup>. These sign and symptoms may present a palpable breast lumps , nipple discharge or retraction, as well as change in size of breast and skin colour<sup>(8)(9)</sup>.

There are various techniques available today for treating breast cancer, including surgery, radiation therapy, chemotherapy, hormone therapy, and more recently, nanotechnology and gene therapy. There are two major breast cancer surgery i.e., Breast-conserving surgery and mastectomy. In breast-conserving surgery tumour is removed together with the surrounding normal tissue. This surgery includes the lumpectomy in which a small amount of surrounding tissue is excised and quadrantectomy in which one-fourth of the breast is excised. In mastectomy all the breast tissue removed and in radical mastectomy

breast tissue as well as lymph nodes are removed<sup>(3)(10)</sup>.

Breast cancer survivors' levels of activity may be significantly and negatively impacted by their treatment for the disease; Such as decrease upper extremity muscle strength and functioning , reduce range of motion, pain , stiffness , lymphoedema , depression , fatigue and they all have detrimental effects on the quality of life in terms of health<sup>(11)(12)(13)(14)</sup>. Exercise has enhanced the quality of life, cardiorespiratory fitness, and emotional state of cancer survivors<sup>(14)(15)</sup>. For the rehabilitation of breast cancer survivors, several exercises such as aerobic exercise, resistance exercise, massage, breathing exercises, yoga, and functional exercise are used.<sup>(15)(16)</sup>

In the 1920s, Joseph Pilates created the Pilates method of exercise. According to the original name of the study, "Contrology," an emphasis is made on control of body position and movement. Pilates Method is more than just a physical exercise programme for the body; it is also a well-rounded programme for strengthening and conditioning the mind.<sup>(17)</sup>

Joseph Pilates created his first exercises as mat exercises, which are performed on a mat on the floor. After that, Pilates developed a number of equipment devices that allow you to work out against resistance, which is given by springs and pulleys.<sup>(18)</sup>The two main categories of these exercises are mat exercises and apparatus exercises ( Reformer, Trapeze Table/Cadillac, Ladder Barrel, and Step/Wunda Chair.<sup>(19)</sup> Pilates based mat exercises and Pilates based theraband exercises are used in breast cancer rehabilitation.<sup>(13)</sup> Chair Pilates is recommended if you have difficulties facing from standing to lying down, for maximum benefit , select a stable chair without arms.<sup>(10)</sup> Pilates is now used in the rehabilitation of breast cancer survivors.<sup>(13)(16)</sup> Pilates is a low-impact workout that helps with posture, strength, flexibility, range of motion, stress reduction, and mental control.<sup>(13)(14)(15)(20)</sup> The principals of Pilates, such as breathing,

concentration, body alignment, accuracy, control, and flow, represent the basis of the exercises.<sup>(13)(21)</sup>

According to a prior study, Pilates exercises that target the upper extremities had excellent positive effects, such as range of motion, over home exercise routines for breast cancer rehabilitation.<sup>(22)</sup> Another study has shown that receiving Pilates treatment increases range of motion.

There was still a lack of knowledge and understanding of breast cancer, as well as a lot of misconceptions about the causes, risk factors, and treatment options.<sup>(15)</sup> The purpose of this study is to evaluate the level of knowledge and awareness of Pilates in breast cancer rehabilitation among Surat physiotherapists.

### Aim

The study aims to determine the knowledge and awareness of Pilates in post operative breast cancer rehabilitation among physiotherapists of Surat district.

### Objectives

- To determine the knowledge of Pilates
- To determine the awareness of Pilates in breast cancer
- To determine the implementation of Pilates in breast cancer

## METHODOLOGY

**Population:** Physiotherapists of Surat district

**Study design:** A cross-sectional survey

**Sample size:** 77

**Study duration:** 6 months (September 2022 to February 2023)

**Sample technique:** Online and offline mode

**Source of data:** The data for the study was collected from clinics, hospitals and colleges of Surat

**Outcome measure:** A per-designed, per-tested, Structured questionnaire on the knowledge and awareness of Pilates

### Inclusion criteria:

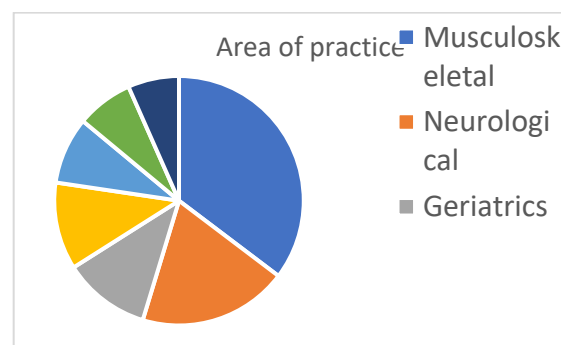
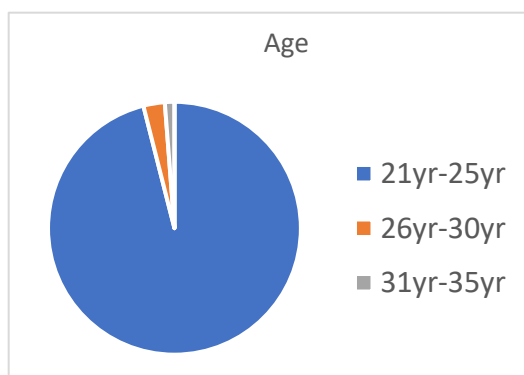
1. Physiotherapists of Surat district.
2. Both clinical and academic physiotherapist.
3. Age between 25 to 55 years.

## PROCEDURE

In this study, Physiotherapists of Surat district who fulfilled the inclusion and exclusion criteria were taken up for the study. A structured questionnaire on the knowledge and awareness of Pilates was distributed to the all physiotherapists of Surat district.

- The questionnaire comprises four sections, with the
  1. Personal information, sociolect-demographic information, years of clinical experience, and clinical field specialty
  2. The knowledge on the Pilates
  3. Awareness on the application of Pilates in the rehabilitation of cancer patients
  4. Implementation of Pilates in treatment of breast cancer patients

## RESULT



	Frequency	Percent
Not aware at all	8	10.4%
Slightly aware	26	33.8%
Moderately aware	27	35.1%
Strongly aware	13	16.9%
Extremely aware	3	3.9%
Total	77	100.0%

	Frequency	Percent
Not aware at all	21	27.3%
Slightly aware	28	36.4%
Moderately aware	19	24.7%
Strongly aware	5	6.5%
Extremely aware	4	5.2%
Total	77	100.0%

## DISCUSSION

The study aims to determine the knowledge and awareness of Pilates in breast cancer rehabilitation among physiotherapists of the Surat district. In this study, 27.3% of participants were unaware that breast cancer symptoms can also be treated with Pilates, whereas 35.1% of participants had a moderate understanding of Pilates. Yap Hui Yi et al. in 2021 The results of the study indicate that 45.13 % of the participants were unaware of how Pilates could manage their breast cancer symptoms. <sup>(15)</sup> Kim S Keays et al. in 2008 and S.EYIGOR et al. in 2010 According to a study, Pilates exercise enhanced upper limb function, quality of life, range of motion, pain, and mood. <sup>(20) (22)</sup>

Almost 35.1% of participants said that the Pilates method's guiding principles do not include endurance. Olena Shkola et al. 2020 determined the six basic principles of Pilates—centering, focus, control, efficiency, flow, and breath. It develops fitness skills like cardiorespiratory endurance, flexibility, balance, muscle strength, and durability. <sup>(25)</sup>

Besides, 20.8% of participants knew that Pilates takes as little as 10 minutes a day to perform. Pilates has been demonstrated to have significant positive effects on your mind and body, even when done for just 10 minutes a day in addition to your usual practice. <sup>(23)</sup>

More than 40% of the participants thought that using a Pilates reformer instead of a mat consistently allowed users to advance and provided intense strength training. Olena Shloka et al. in 2020 determine That resistance to ropes and springs, rather than gravity, is the

primary factor in why reformer's work has gained popularity so quickly. Exercise on the Reformer is more efficient than exercise on the Mat, and both types of exercise may have varying degrees of impact on various parts of the body. <sup>(25)</sup>

The current study shown that 15% of participants in the current study stated that Pilates is not contraindicated for herniated discs or pregnancy. Luciano Rodríguez-Díaz et al. in 2017 determine. No matter what stage of pregnancy a woman is in, she can start a Pilates program even if she has never done the exercise before because it demands her to modify her routine to the new circumstances and physical changes that pregnancy brings about. <sup>(23)</sup> For symptomatic individuals with lumbar disc herniation, Pilates was an efficient and secure method for reducing pain level and functional impairment and enhancing flexibility, static and dynamic endurance, and partially their QOL. <sup>(24)</sup>

## CONCLUSION

The results of this present study indicate that 35.1% physiotherapists moderately aware about Pilates and 36.4 % physiotherapists slightly aware that symptoms can be treated using Pilates. Additionally, we believe that the findings of this study could help modern Pilates practitioners broaden their field of practice.

### *Declaration by Authors*

**Ethical Approval:** Approved

**Acknowledgement:** None

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**Conflict of Interest:** The authors declare no conflict of interest.

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