

# The Effects of a Pilates Exercise Program on Pain, Functional Capacity, and Quality of Life in Breast Cancer Survivors One Year Postsurgery

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**OBJECTIVES:** To evaluate the effects of Pilates exercises on functional capacity, pain, and quality of life in breast cancer survivors one year postsurgery.

**SAMPLE & SETTING:** 44 breast cancer survivors who participated in a 24-session Pilates exercise program at a physiotherapy clinic in Brazil.

**METHODS & VARIABLES:** This prospective longitudinal study evaluated breast cancer survivors who performed Pilates exercises for 60 minutes twice weekly. Functional capacity was analyzed using the Disabilities of the Arm, Shoulder, and Hand Questionnaire (DASH) and the Shoulder Pain and Disability Index (SPADI). Pain and quality of life were also analyzed. Scores were measured on admission, after 12 sessions, and after 24 sessions.

**RESULTS:** Median DASH and SPADI scores improved by 61% after 24 Pilates exercise sessions. The average number of breast cancer survivors who performed complex tasks without difficulty after 12 sessions and 24 sessions increased considerably. Pain scores significantly decreased, and quality of life significantly improved after all sessions.

**IMPLICATIONS FOR NURSING:** Incorporating a Pilates exercise program can decrease pain and improve functional status and quality of life among breast cancer survivors at least one year postsurgery.

**KEYWORDS** Pilates; breast cancer survivors; pain; functional capacity; quality of life; exercise

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Breast cancer treatment aims to increase disease-free survival for women following diagnosis. It is estimated that 99% of women with a local diagnosis and 85% of women with a locoregional diagnosis are alive five years after diagnosis, regardless of race or age (Howlader et al., 2021). About 25%–60% of women with breast cancer report persistent postoperative pain and limited range of motion of the shoulder and the homolateral upper limb following surgery (Khan et al., 2020). These conditions can lead to muscle hypotrophy and reduce the strength and function of the affected limb, functional capacity, and quality of life. However, pain is not limited to the early postoperative period, and 52% of women reported experiencing symptoms more than twice a week or daily 36 months after surgery. The incidence of and discomfort experienced from late symptoms varies among patients (Pillai et al., 2019). According to a study by Iovino et al. (2019), 30% of patients developed postoperative shoulder–arm morbidity following breast cancer surgery. The most common long-term shoulder–arm problems included pain, numbness, impairment of mobility and strength, lymphedema, and frozen shoulder (Iovino et al., 2019). Similarly, a study by Hauerslev et al. (2020) found that the majority of participants complained of one or more subjective symptoms related to shoulder and arm morbidity more than 11 years after undergoing surgery for breast cancer. Forty-nine percent of participants had one or more functional impairments, and 64% had one or more subjective locoregional symptoms, such as pain, swelling of the arm, and decreased shoulder mobility (Hauerslev et al., 2020).

In a study by Martins da Silva and Rezende (2014), physical functional disabilities were present in the