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Arm Function in Women Treated for Breast Cancer

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Background

Women treated for breast cancer report functional limitations in the affected arm and decreased quality of life (QOL) following treatments for breast cancer. Arm function is dependent on adequate levels of motion, strength, and muscular endurance. While multiple studies document decreased range of motion and strength, kinesiophobia and its effects on arm function have not been as steadily pursued in the literature involving breast cancer survivors.

Purpose

The purpose of this study was to compare objective measurements of arm function in a population of breast cancer survivors to assess how it relates to self-reported function and fear of physical activity.

Participants

A total of 30 women with a mean age of 57 (SD 13.65) participated. Diagnosed with stage 0-3 breast cancer 6-60 months prior to enrollment. Women with breast cancer were excluded if they had a history of metastatic disease, shoulder pathology, or history of shoulder/neck surgery.

Materials

Printed surveys including: PENN, FACT-B QOL, PSS, RAPA, COPM and medical history intake forms. An inclinometer was used to assess ROM. This study also used hand weights, handheld dynamometer, scale, measuring tape, the Peg test and Zoom video conference system.

Acknowledgements:

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Methods

Participants completed multiple qualitative surveys. Bilateral range of motion, strength using hand-held dynamometry, muscular endurance using the Upper Limb Lift Test (ULLT), and finger dexterity using the Peg test were measured. Kinesiophobia of the affected arm and objective tests and measures were analyzed with t-tests. Significance was set $\leq .05$ a priori.

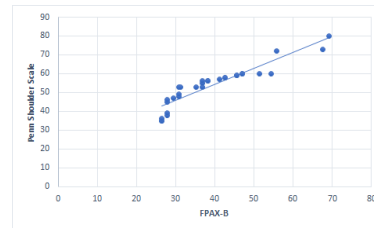
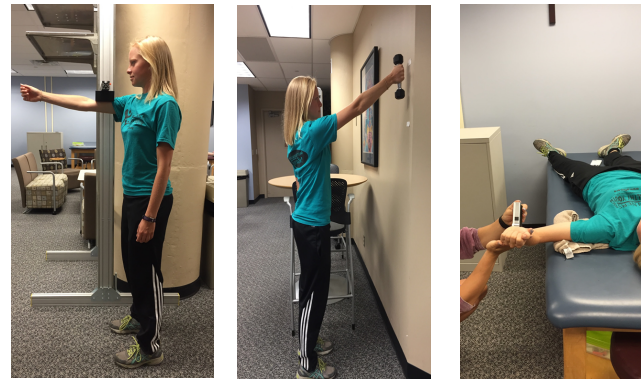


Figure 1. Penn and FPAX-B

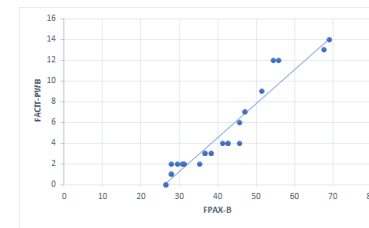


Figure 2. FACIT-PWB and FPAX-B

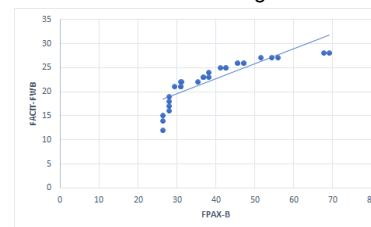


Figure 3. FACIT-FWB and FPAX-B

Results

Mean age and BMI were 57 (SD 13.65) and 28.86 (SD 5.17). Mean scores (SD) were: PENN 84.15 points (4.8), FACT-B 110.89 (16.13), FPAX-B 39.22 (11.73), COPM satisfaction 6.34 (1.71) and COPM performance (7.42 (1.19)). Fear of PA was significantly correlated to PENN pain and satisfaction subscales ($p < 0.05$, $r = -.405$, $-.557$); FACT-B ($p < 0.001$, $r = .573$), PSS ($p < 0.05$, $r = .448$), and COPM satisfaction and performance subscales ($p < 0.001$, $r = -.655$, $-.600$). Fear of PA was not correlated with objective measures.

Discussion

Fear of physical activity was associated with self-reported function, QOL and perceived stress in this population of women with breast cancer, while objective measures were not. These factors suggest personal factors play a significant role in functional recovery. Limitations to this study include differences in self-reported function measures between participants and a long range of survivorship.

Clinical Relevance

Physical therapy is an important step of the rehabilitation process to help steadily progress and improve confidence in the affected limb. Rehabilitation professionals must address personal factors to ensure complete and successful functional recovery and to avoid the development of kinesiophobia after breast cancer treatment. Physical therapists should be sensitive to all aspects of treating patients with breast cancer to prevent fear of moving the involved limb.

References: 1. Hayes SC, Rye S, Battistutta D, DiSipio T, Newman B. Upper-body morbidity following breast cancer treatment is common, may persist longer-term and adversely influences quality of life. *Health Qual Life Outcomes.* 2010;8:92.
2. Aerts PD, De Vries J, Van der Steeg AF, Roukema JA. The relationship between morbidity after axillary surgery and long-term quality of life in breast cancer patients: the role of anxiety. *Eur J Surg Oncol.* 2011;37(4):344-349.