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PHYSICAL CHANGES AFTER A 12 WEEK DEEP-WATER RUNNING GROUP CLASS PROGRAM FOR BREAST CANCER SURVIVORS WITH MASTECTOMY.

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Introduction: Breast cancer treatments can negatively affect the quality of life, including physical and psycho-sociological issues. Recent literature indicates that Physical activity and exercise, such as Deep-Water Running (DWR), can be effective against several disease symptoms. A common physical sequel after adjuvant therapy is a decrease in shoulder strength of the upper-limb of the affected side which is associated with the development of Lymphedema.

Objective: The aim of this study was to determine whether introduction to Deep-Water Running alone is effective to improve physical condition in breast cancer survivors, especially in the affected arm.

Methods: 12 breast cancer survivors (64 ± 8 years) with one side Mastectomy intervention were recruited and completed at least 30 DWR sessions in 12 weeks. Total weight, body mass index (BMI), body composition, circumferences, Hand-Grip strength and 30 - Second Chair Stand were measured pre and post intervention. Average and Standard Deviation were calculated and compared by the one-tailed paired t-test, was considered statistically significant when $P < 0.05$.

Results: BMI (25.0 ± 3.6 vs 24.7 ± 3.5 , $p = 0.13$) and total weight (65.2 ± 9.3 kg vs 64.2 ± 7.9 kg, $p = 0.11$) did not significantly changed, the muscle mass (19.4 ± 2.4 kg vs 20.6 ± 2.9 kg, $p < 0.01$) have increased and the body fat percentage (35.4 ± 5.9 % vs 32.2 ± 4.5 %, $p < 0.01$) significantly decreased. The 30 - Second Chair Stand test showed a significant improvement (18 ± 3 vs 20 ± 4 , $p = 0.04$). The Hand-Grip Strength significantly increased in the operated arm (20.7 ± 5.6 kg/m² vs 22.2 ± 4.5 kg/m², $p = 0.03$) but did not significantly changed in the non operated arm (21.7 ± 5.7 kg/m² vs 22.4 ± 4.9 kg/m², $p = 0.21$). The average difference between unoperated and operated arm decrease from 1.0 to 0.2 kg/m².

Conclusions: Introduction to DWR can positively improve body composition and strength and endurance in breast cancer survivors, presenting positive effects on the strength of the operated arm. Nevertheless, it was not sufficient to change total body weight and BMI.

Keywords: Breast Cancer; Deep-Water Running; Physical exercise, Group Exercise