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Table of Contents

Effects of a multicomponent exercise program with duration of 12 weeks on the quality of life in breast cancer survivors

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ABSTRACT

The aim of this study was to verify the changes induced by the multicomponent exercise program with duration of 12 weeks on quality of life in breast cancer survivors. The sample of this study consisted of 7 female subjects with an average of 64 (± 8.6) years who volunteered for this investigation and presented breast cancer pathology diagnosed in the clinical history. The exercise program had a duration of 12 consecutive weeks and a weekly frequency of three days. The duration of the exercise was 60 continuous minutes and the exercise used were from the multicomponent method, combining aerobic, resistance, flexibility and balance training. The variables of healthy-related quality of life questionnaire EORTC QLQ-C30 and QLQ-BR23 were evaluated on the baseline and after 12 weeks. The data followed a descriptive and statistical analysis related to the results obtained in the various subscales of the EORTC QLQ-C30 and QLQ-BR23 on the baseline and 12 weeks. From baseline to 12 weeks, the most increased values were 24 (± 16.5) points in the role function; 11 (± 5.3) in the emotional function. In the symptomatic scales, the most improved symptoms were fatigue with a reduction of 20 (± 3.5) points; 14 (± 3.8) in the pain scale, 16 (± 4.8) on breast symptoms, and 19 (± 10.9) points on arm symptoms. The results suggest that the multicomponent exercise program in this study didn´t have significant differences on the health-related quality of life subscales in breast cancer survivors. **Keywords**: Breast cancer; Quality of life; Exercise.

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INTRODUCTION

The classification of "cancer survivor" indicates any person who had or has cancer from the time of diagnosis (Marzorati et al., 2017). The treatment is essentially centred on the objective of curing the disease and in the prevention of its metastic reappearance (Devin et al., 2019). This evidence emphasizes the importance of research on the development of strategies to improve quality of life, reduce the risk of recurrence, probability of contracting other diseases and prolong the survival of this population (Lee et al., 2016).

MATERIAL AND METHODS

Initial assessments were performed in January 2019, and the post-intervention evaluation was performed in April 2019. Inclusion criteria were: 1) be diagnosed as breast cancer patients; 2) designated for definitive surgery (any type); 3) designated for chemotherapy, radiotherapy, hormonal therapy, or a combination of these treatments after surgery.

Participants

The sample of this study consisted of 7 female subjects. The volunteers had an average of 64 (± 8.6) years.

Measures

The assessment of quality of life related to Health was performed using the third version of the questionnaire of the European Organization Research Treatment of Cancer, Quality of life of the patient with cancer (EORTC QLQ-C30) and breast cancer (QLQ-BR23) (Aaronson et al., 1993).

Procedures

The subjects that volunteered for this investigation presented breast cancer pathology diagnosed in the clinical history. The questionnaires were submitted on the baseline and after 12 weeks by the investigators in the facilities of Polytechnic Institute of Bragança, Portugal. The sessions of 60 minutes were constituted by: 1) 5-8 minutes of general warming, 2) aerobic exercises (15-20 min); 3) 1 to 3 series of muscular endurance exercises involving the main muscular groups, such as knee flexors/extensors, abductors and adductors of the shoulder, elbow flexors/extensors; 4) Static and dynamic balance training for 5-8 min; 5) 5 min of return to the calm. The intensity was maintained in 12-14 on the scale of subjective perception of Borg exertion (1998).

Analysis

The data followed a descriptive and statistical analysis using the Statistical Package for Social Sciences (SPSS) software, version 23.

RESULTS

From baseline to 12 weeks, the most increased values were 24 (± 16.5) points in the role function; 11 (± 5.3) in the emotional function. In the symptomatic scales, the most improved symptoms were fatigue with a reduction of 20 (± 3.5) points; 14 (± 3.8) in the pain scale, 16 (± 4.8) on breast symptoms, and 19 (± 10.9) points on arm symptoms. However, we didn´t found significant differences on the variables of this study.

Table 1. Baseline and 12 weeks health-related quality of life subscales (EORTC QLQ-C30/BR23) of breast cancer survivors

Variables QLQ-C30	**Baseline (n=7) M (±SD)**	**12 weeks (n=7) M (±SD)**	**U**	**P**
Global Health Status (QOL)	60.71 (±17.8)	57.1 (± 11.1)	20.500	0.620
Physical Function (PF)	83.8 (± 9.3)	84.7 (± 11.9)	29.500	0.535
Role Function (RF)	59.5 (± 33.1)	83.3 (± 16.6)	35.500	0.165
Emotional Function (EF)	67.8 (± 23.2)	78.5 (± 17.9)	31.000	0.456
Cognitive Function (CF)	76.1 (± 18.8)	80.9 (± 11.5)	29.000	0.620
Social Function (SF)	83.2 (± 21.6)	71.3 (± 34.3)	20.000	0.620
Fatigue (FA)	46 (± 24.3)	26.9 (± 27.8)	14.500	0.209
Pain (PA)	46.2 (± 24.4)	32.1 (± 28.2)	17.000	0.383
Variables QLQ-BR23				
Breast Symptoms (BRBS)	23.8 (± 17.9)	7.14 (± 13.1)	9.500	0.053
Arm Symptoms (BRAS)	32.9 (± 27.6)	13.88 (± 16.7)	13.500	0.165

DISCUSSION

The variables related to quality of life improved after the intervention of the exercise. These results are consistent with Naumann et al. (2012), who reported an increase of more than 10 points in the variables of quality of life, in breast cancer survivors, after 9 weeks of exercise. In the present study, the exercise induced a marked decrease in the symptoms of fatigue and pain, which is in line with the results of the literature, stating that exercise can help reduce fatigue during and after the treatments (Naumann et al., 2012).

CONCLUSIONS

The results of the present study suggest that supervised multicomponent exercise program for 12 weeks didn´t have significant differences on the health-related quality of life subscales in breast cancer survivors.

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