The Effects of Exercise on QOL in Women Living with Breast Cancer: A Systematic Review

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How it all started...

• Literature review- 'Exercise for Women with or at Risk for Breast Cancer Related-Lymphedema’

• Accepted for publication in October 2006 in Physical Therapy
Breast Cancer

• In 2006, 1 in 9 women will develop breast cancer and 1/3 of them will succumb to the disease.
Breast Cancer

- Improved screening has resulted in increased survivorship
- More women are coping with the changes that may accompany the disease and its treatment
• Quality of life (QOL) is the overall pleasure, comfort and enjoyment in someone’s life

• QOL is often affected in women with breast cancer
Physical Activity

- Improves overall health
- Affects mood and QOL
To examine the effect of exercise on QOL in women living with breast cancer
• Initial Search strategy performed in November 2005

• Electronic databases searched: MEDLINE, EMBASE, CINAHL, PubMed, and PEDro

• Keywords: ‘breast cancer’ and ‘quality of life’ or ‘QOL’ and ‘exercise’ or ‘physical activity’
Inclusion Criteria

1) Females diagnosed with breast cancer
2) Physical activity or exercise
3) Quality of life
4) Standardized QOL measurement tool
5) Randomized control trials (RCT)
6) Published in a peer-reviewed journal
Exclusion Criteria

1) They were review articles, descriptive, correlational, observational or survey studies, unpublished dissertations, or abstracts
2) Physical activity or exercise was related to a person’s occupation,
3) Physical activity or exercise intervention was carried out for less than four weeks,
4) They did not use a standardized QOL outcome measurement tool
Quality Assessment

• Methodological Quality:

• Levels of Evidence:
  - Centre for Evidence-Based Medicine (CEBM)
Results

MEDLINE 79
EMBASE 167
CINAHL 53
PubMed 93
PEDro 18

410

178 Excluded duplicates

232

155 excluded post title and abstract screening

77

71 excluded due to inclusion/exclusion criteria

6

3 new alerts included

9
Included Studies

- Segal et al. (2001) Structured Exercise Improves Physical Functioning in Women with Stages I and II Breast Cancer: Results of a Randomized Control Trial

- Courneya et al. (2003) Randomized Controlled Trial of Exercise Training in Postmenopausal Breast Cancer Survivors: Cardiopulmonary and Quality of Life Outcomes


Included Studies

• Campbell et al. (2005) *A pilot study of a supervised group exercise programme as a rehabilitation treatment for women with breast cancer receiving adjuvant treatment*

• Sandel et al. (2005) *Dance and Movement Program improves Quality-of-Life Measures in Breast Cancer Survivors*

• Ohira et al. (2006) *Effects of Weight Training on Quality of Life in Recent Breast Cancer Survivors*

• Herrero et al. (2006) *Combined Aerobic and Resistance Training in Breast Cancer Survivors: A Randomized, Controlled Pilot Trial*
Criteria List for the Methodological Quality Assessment

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>SCORE</th>
<th>STUDIES</th>
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<tr>
<td>Poor</td>
<td>0-3</td>
<td>n/a</td>
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<tr>
<td>Moderate</td>
<td>4-6</td>
<td>McKenzie, Mustian, Campbell, Headley</td>
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<tr>
<td>High</td>
<td>7+</td>
<td>Segal, Courneya, Sandel, Ohira, Herrero</td>
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</tbody>
</table>
Physical Activity/Exercise Intervention

- Broad range of exercise protocols including:
  - Aerobic
  - Resistance training
  - Gentle arm exercises
  - Dance and movement therapy
  - Tai Chi-Chuan
Quality of Life Outcome Measures

- Functional Assessment of Cancer Therapy- Breast (FACT-B)
- The Functional Assessment of Cancer Therapy- General (FACT-G)
- Satisfaction with Life Scale (SWLS)
- Functional Assessment of Chronic Illness Therapy-Fatigue Version IV (FACIT-F)
- Medical Outcomes Trust 36- Item Short Form Survey (SF-36)
- Cancer rehabilitation evaluation system short form (CARES-SF)
- European Organization for Research and Treatment of Cancer Questionnaire (EORTC QLQ-C30)
Discussion

McNeely et al. (2006) ‘Effects of exercise on breast cancer patients and survivors: a systematic review and meta-analysis’

- Examined the effects of exercise on QOL, fatigue, physical functioning and body composition in women living with breast cancer
Discussion – Baseline Characteristics

• Baseline characteristics noted were age, weight, height, race, education, marital status, stage of disease, treatment type and initial activity level

• For the majority, control and intervention groups in each study did not statistically differ
  • Exception: Headley et al. (2004) and Mustian et al. (2004)
Discussion - Limitations

- Heterogeneity of Exercise Intervention and QOL outcome measures used
- Poor generalizability
- Stages of breast cancer
- Inability to blind subjects
- Small sample sizes
Recommendations

- Physical activity and exercise are safe for women with breast cancer to perform.

- Exercise is consistently found to be a positive predictor of QOL following breast cancer diagnosis and treatment.
Most beneficial exercise regime is still unknown due to lack of consensus and the number of studies.

Clinicians must remain up to date on current research findings.
Acknowledgements

- Special thanks to Susan Harris and the various authors who contributed to our review


References

References

Thank You Questions?