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A Scoping Review of Occupation-based Interventions for Women with Breast Cancer

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A Scoping Review of Occupation-based Interventions for Women with Breast Cancer

Abstract

Background: Globally, breast cancer is the most commonly diagnosed cancer. Women diagnosed with breast cancer often experience physical and psychosocial changes influencing occupational participation and quality of life. Limited evidence exists that reports outcomes of occupation-based occupational therapy interventions for women with breast cancer.

Method: In this scoping review, we map occupation-based occupational therapy interventions conducted by occupational therapy professionals for women undergoing rehabilitation for breast cancer. The Joanna Briggs Institute Guidelines provided a structure for the review.

Results: Six articles met the inclusion criteria. Interventions included health management, leisure, and social participation occupations.

Conclusion: Occupational therapy interventions are important in promoting occupational engagement and quality of life for women experiencing breast cancer. Few studies exist that report these findings, thus necessitating more research.

Keywords

breast cancer, occupational therapy, rehabilitation

Cover Page Footnote

The authors declare that they have no competing financial, professional, or personal interest that might have influenced the performance or presentation of the work described in this manuscript.

Credentials Display

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Over two million women are diagnosed with breast cancer each year, making it the most prevalent cancer among women globally (World Cancer Research Fund International, 2018). Most diagnoses (nearly 85%) occur in women with no family history (BreastCancer.org, 2021). The most common risk factors for developing breast cancer include age and gender, making women over 40 years of age the most susceptible. Women diagnosed with breast cancer often experience changes in their physical and mental health, which impacts functional participation and places them at risk for reduced quality of life (World Health Organization, 2021). During treatment for breast cancer, women typically interact with many health professionals, each specializing in a specific area of the treatment plan. Although occupational therapists bring a holistic approach to improving health and well-being through promoting participation and addressing functional barriers, the use of occupational therapy intervention for women with breast cancer remains low (Baxter et al., 2017; Pergolotti et al., 2016; Petruskeviciene et al., 2018).

Literature Review

Women diagnosed with breast cancer may experience health changes related to their diagnoses, including functional decline associated with treatments required for survival (Pergolotti et al., 2016). As a result, the ability to optimally perform daily occupations may change. For example, women may experience restricted upper extremity movement, pain, lymphedema, fatigue, or changes in emotions and interests (Keesing et al., 2018; Sahin & Uyanik, 2019). Along with physical changes, women may also experience adverse effects on their well-being and quality of life (Sert et al., 2013). While early detection and treatment can improve a women's prognosis, lead to better outcomes, and positively impact physical and mental health outcomes, as well as survival, it remains important to address the comprehensive needs of women with breast cancer (Maher & Mendonca, 2018; Moreno-Chaparro et al., 2018).

The role of occupational therapy in breast cancer care is minimally reported in the literature and is underused in practice (Baxter et al., 2017; Keesing et al., 2018; Petruskeviciene et al., 2018; Pergolotti et al., 2016). Occupational therapists can provide education and tasks or environmental modification to reduce barriers to occupational participation to improve long-term outcomes, and they can address cancer-related fatigue, upper extremity impairment, cognition, lymphedema, and risk of falling (American Occupational Therapy Association [AOTA], 2012; Pergolotti et al., 2016). Occupational therapists can also work with women to address ongoing health management to provide them with the skills and education needed to optimize their health, thereby promoting the ability to manage their condition while improving their quality of life (Baxter et al., 2017).

Although management of symptoms, including edema, range of motion, and sensation, provide important outcomes when treating women with breast cancer, we were interested in isolating interventions that included occupation-based methods and that aligned with outcomes related to quality of life. As such, articles included in this review had to incorporate occupational engagement during the intervention and could not solely report outcomes related to lymphedema measurements that did not have a link to occupation or quality of life. This operational definition of occupation-based corresponds with the *Occupational Therapy Practice Framework: Domain and Practice* (AOTA, 2020), which states that occupation-based interventions include occupational engagement. Several of the studies we found included physical exercise, which we considered to be occupation-based under the occupation of health management. The focus of this scoping review was to map the literature to explore the types of occupation-based interventions provided to women with breast cancer and delivered by occupational therapy professionals.

Method

We conducted a scoping review to map the available research for occupation-based occupational therapy interventions for women with breast cancer. Scoping reviews can examine research, map findings, determine if a systematic review is warranted, descriptively summarize research findings, or identify gaps in existing published research (Arksey & O'Malley, 2005). A scoping review was determined as an appropriate methodology for this study, as the intent was to examine and describe the existing literature on this topic. To be included, interventions had to be occupation-based and conducted by an occupational therapy professional. We used the Joanna Briggs Institute Methodology to guide the review (Peters et al., 2020). We also used the PRISMA Extension for Scoping Reviews (Tricco et al., 2016).

Search Strategy

We established a list of search terms (occupational therapy AND breast cancer, women, quality of life, health promotion, well-being, mental health, function). Databases searched included PubMed, CINAHL, EBSCOhost, and OTSeeker. We also hand-searched the reference list of included articles. To be included, articles were required to be peer-reviewed research published between 2015 and 2020, written in English, report on an occupation-based occupational therapy intervention among women with breast cancer, and include an occupational therapist as the interventionist. We excluded studies that did not include an intervention (including qualitative literature, retrospective studies, case studies, expert opinions, and grey literature) and studies that reported outcomes not linked to occupation (i.e., solely lymphedema).

Data Screening, Selection, and Extraction

The authors began by screening database search results by article title and abstract to determine if the article met the study criteria. If, after reviewing the title and abstract, it was unclear if the study met inclusion criteria, the full text of the article was obtained to make a final determination regarding inclusion. Two researchers examined each full text article in depth independently to determine eligibility for inclusion. We then met collectively to discuss and make final decisions on articles to include. During screening, we tracked the number of articles (see Figure 1).

After screening was complete, we extracted the data-to-data tracking table (see Appendix). We analyzed the included studies using data from this table.

Results

Our initial search resulted in 135 articles. After screening, six articles met the inclusion criteria and were included in the review. Findings are described based on the study characteristics.

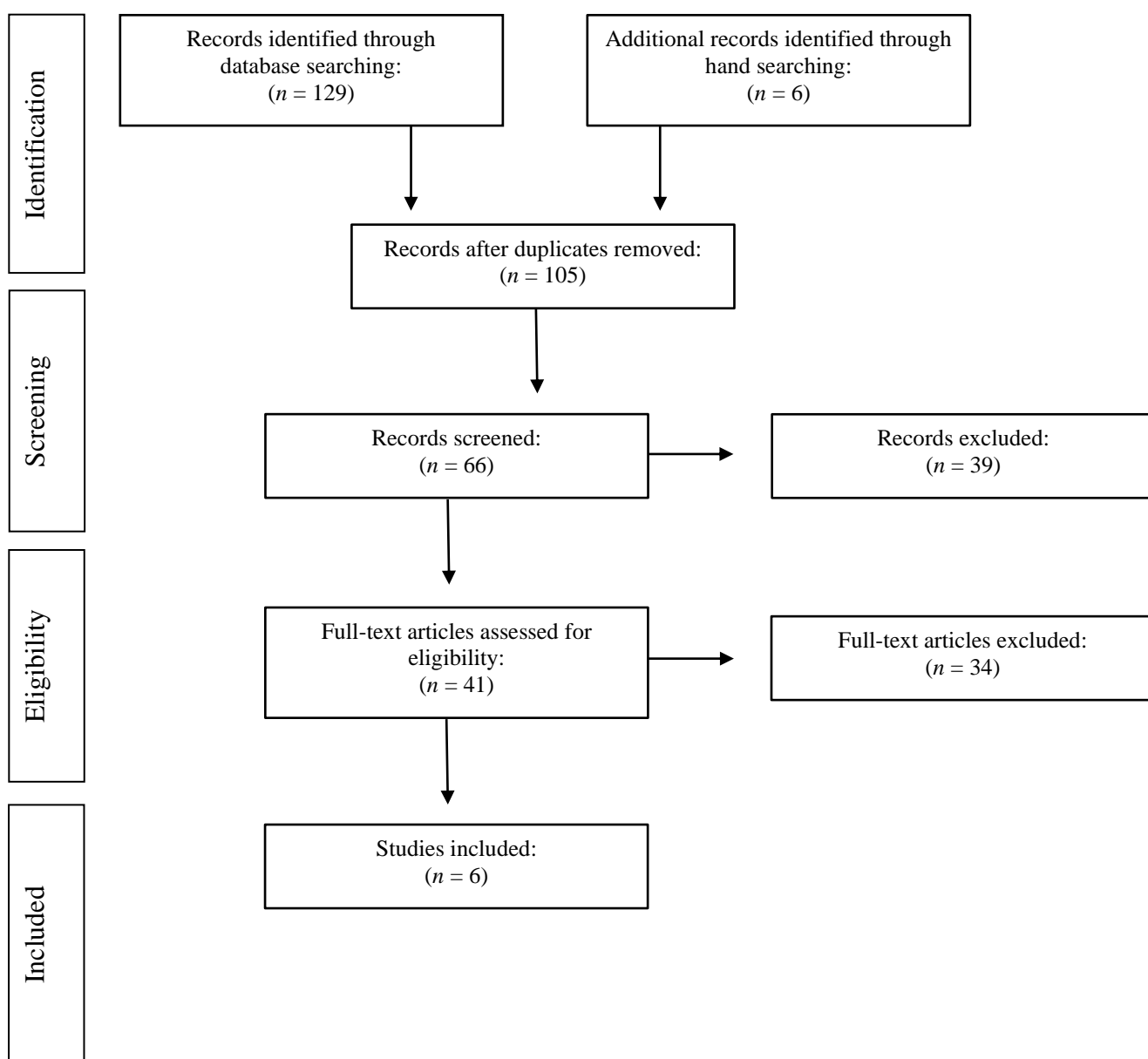
We identified four studies in which researchers used physical interventions to promote quality of life (Baruth et al., 2015; Lahart et al., 2016; Leach et al., 2019; Lozano-Lozano et al., 2020). These studies were considered health management interventions. Several of the studies included a home-based exercise program (Baruth et al., 2015; Lahart et al., 2016; Lozano-Lozano et al., 2020) and telephone follow-ups (Baruth et al., 2015; Lahart et al., 2016). Two studies incorporated social cognitive theory into session intervention combined with exercise (Baruth et al., 2015; Leach et al., 2019). Findings indicated improved quality of life across the studies (Baruth et al., 2015; Leach et al., 2019; Lozano-Lozano et al., 2020) and enhanced mental health and well-being (Baruth et al., 2015; Lozano-Lozano et al., 2020).

Two studies focused on participants who identified purposeful activities (Petruševičienė et al., 2018; Sahin & Uyanik, 2019). In the study conducted by Petruševičienė et al. (2018), the intervention included a variety of occupations that varied by participant. In this randomized controlled trial, participants engaged in a 6-week community-based program incorporating purposeful activity with creativity. The

control group engaged in typical activities only and received occupational therapy consultation if needed. Results reporting on the quality of life were assessed using the European Organization for Research and Treatment of Cancer Quality of Life Questionnaire (EORTC QLQ-C30) and the Breast Cancer Specific Quality of Life Questionnaire (QLQ-BR23), which showed improved overall quality of life for participants in the intervention group. Sahin and Uyanik (2019) used a problem-solving intervention to assess depression and quality of life. The intervention consisted of four stages, carried out over six sessions, in which participants set goals (using the Canadian Occupational Performance Measure), considered pros/cons, planned, and received feedback. There was a reduction in depression and an increase in quality of life following the intervention.

Figure 1

Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Flow Diagram of Studies Included in the Scoping Review (Moher et al., 2009).



Discussion

The purpose of this scoping review was to investigate occupation-based occupational therapy interventions for women diagnosed with breast cancer. We found few studies that were conducted by an occupational therapy professional that used occupation-based interventions. Included studies generally reported positive findings among participants in the intervention groups following occupational therapy. In mapping our findings, health management was the most represented occupation-based intervention.

Many articles included in this review were classified under the occupation of health management. Physical health was a primary focus in these articles. The studies that incorporated physical health primarily focused on exercise, which was found to be advantageous for improving mental health and quality of life. Findings from this review align with prior research addressing therapeutic exercise protocols for cancer (not all specific to breast cancer), concluding that exercise is shown to be beneficial in many aspects of the lives of those diagnosed with cancer (Egan et al., 2013; Hilfiker et al., 2018; Hunter et al., 2017; Mokhatri-Hesari & Montazeri, 2020; Scott et al., 2013; Stout et al., 2017).

Two studies explicitly addressed occupation and purposeful activity as key components of the study designs (Petruseviciene et al., 2018; Sahin & Uyanik, 2019). More research is needed to extend the findings from Sahin and Uyanik's (2019) study, which used meaningful activities and daily routines to address problem-solving. Despite additional evidence demonstrating that participation in purposeful and meaningful activities promotes health (Gallagher et al., 2015), few additional published studies have applied this intervention specifically to individuals diagnosed with breast cancer.

The comprehensive role of occupational therapy intervention in breast cancer rehabilitation may not be fully recognized based on the limited published research articles identified in this review. With the growing number of survivors experiencing physical and emotional impacts resulting from cancer treatments, there is a need for increased awareness and utilization of occupational therapy in breast cancer rehabilitation to address quality of life, which may interfere with occupational engagement (Hwang et al., 2015). Although the purpose of this study was to map and describe the literature, we identified a gap in this area of practice. Occupational therapists may routinely provide occupation-based interventions for women experiencing breast cancer; however, these interventions may not be formally incorporated into research. As such, a gap exists in demonstrating the full value of occupational therapy interventions post breast cancer diagnosis. The research highlights that women may experience declines in functional status, performance in activities of daily living (ADLs), and reduced quality of life as a result of treatments for breast cancer (Chia et al., 2021; van Abbema et al., 2017). None of the articles identified in this review focused on ADLs re-training. Additional research conducted by occupational therapy professionals to address functional impairments using occupation-based approaches is necessary.

Strengths and Limitations

To improve quality, the researchers conducted screenings separately before coming together to synthesize the findings. The number of articles was reduced, as we elected to include studies in which the intervention was carried out by an occupational therapist. While this limited the number of included studies, it provided evidence specific to what occupational therapists are doing in practice. Of the included studies, only two were conducted by researchers in the United States. The generalizability of the remaining articles may be decreased because of differences in the health care systems among countries.

Conclusion

Breast cancer impacts physical and mental health. Women undergoing treatment following a breast cancer diagnosis often report decreased quality of life. We explored the literature to map occupational therapy interventions. Most of the articles included in this review incorporated physical interventions in the form of exercise (health management), while fewer articles used social and leisure participation. Overall, the findings show a need for more research reporting the use of occupation-based occupational therapy intervention among women with breast cancer. Additional research focusing on functional status and ADL performance can help to promote the role and value of occupational therapy in this area of practice.

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¹ * Indicates articles includes in the scoping review.

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Appendix

Table 1

Data Extraction Table for Included Articles

| Author, Design, & Location | Study Details | Groups | Outcomes | Occupation-based Intervention | Results |
|--|--|---|--|-------------------------------|---|
| Baruth et al., 2015 <i>Design</i> RCT <i>Location</i> United States | <i>Participants</i> N = 32 (M age, 57.4 [intervention]; 54.9 [control]) <i>Inclusion Criteria</i> Diagnosed with Stage I-III breast cancer, female, postmenopausal, no orthopedic or cardiovascular limitations, not previously active adjuvant <i>Intervention Setting</i> Home | <i>Intervention (n = 20)</i> 12-week home-based walking program with one in person session focusing on goal setting and safety and five phone follow-up counseling sessions that used social cognitive theory to adapt behaviors and thought processes. Pedometers and activities logs were given to track progress. <i>Control (n = 12)</i> Participants continued normal physical activities throughout the intervention window. | - Short Form Health Survey (SF - 36) - International Breast Cancer Study Group Quality of Life Core Questionnaire (IBCSG QOL) | Health Management | <i>Significant Findings</i> The home-based intervention was effective at improving quality of life. Participants in the intervention group showed greater improvements in areas assessed on the IBCSG QOL, including current health (effect size = 0.27) mood (effect size = 0.30), physical well-being (effect size = 0.38). They also improved quality of life as measured using the SF-36 more than those in the control group on role-emotional (effect size = 0.14), mental health (effect size = 0.28) <i>Nonsignificant Findings</i> Intervention group had small gains in quality of life while the control participants' quality of life remained the same. |
| Lahart et al., 2016 <i>Design</i> RCT <i>Location</i> United Kingdom | <i>Participants</i> N = 80 (M age, 53) <i>Inclusion Criteria</i> Female, ages 18-72, diagnosed with stage I-III breast cancer within two years of enrollment, post-surgery and no surgery planned for at least 6 months, fully completed adjunct therapy, no previous malignancy <i>Intervention Setting</i> Home | <i>Intervention (n = 40)</i> Participants did 6-month home-based physical activity intervention, received face-to-face consultation, then telephone counseling at end of Months 1, 2, 3. Last 2 months, received a mailed reminder encouraging physical activity. <i>Control (n = 40)</i> Usual care including standard information regarding physical activity, instructed to maintain current lifestyle. | - Functional Assessment of Cancer Therapy – Breast (FACT – B); Domains included physical, social, emotional, and functional well-being | Health Management | <i>Significant Findings</i> The intervention resulted in small improvements in health-related quality of life as assessed on the FACT-Breast ($p = .024$) and functional wellbeing subscale ($p = .025$) which improved significantly between participant groups. <i>Nonsignificant Findings</i> None |

| Author, Design, & Location | Study Details | Groups | Outcomes | Occupation-based Intervention | Results |
|-----------------------------|---|--|--|--------------------------------|---|
| Leach et al., 2019 | <i>Participants</i> N= 26 | <i>Intervention 1 (n = 14)</i> Supervised group intervention carried out for eight weeks. Participants were educated on strategies targeting group structure, processes, and environment to increase cohesion. Participants were encouraged to complete a minimum of 20–60 min of aerobic exercise once per week, outside of class. After Sessions 2, 5, 7, social cognitive theory was used. | - FACT-B | Health Management | <i>Significant Findings</i> Physical well-being ($p = .025$) and emotional well-being subscale scores ($p = 0.023$) improved significantly in the personal training intervention but not in the group dynamics group. Overall quality of life scores significantly improved for those in the group dynamics exercise intervention only ($p = .041$). <i>Nonsignificant Findings</i> Social and functional well-being did not improve significantly for either group. Overall quality of life did not improve for those in the personal training intervention ($p = .591$). |
| | <i>Design</i> 2 group, pre/post | | | | |
| | <i>Inclusion Criteria</i> Women, ages 18–70, diagnosed with stage I-III breast cancer, \geq eight weeks post surgery | | | | |
| | <i>Intervention Setting</i> Outpatient | | | | |
| | | <i>Intervention 2 (n = 12)</i> Personal training sessions were delivered 1:1 with a trainer two times/week for one hour. Participants were encouraged to complete a minimum of 20-60 min of aerobic exercise once per week, outside of class. | | | |
| Lozano-Lozano et al., 2020 | <i>Participants</i> N = 80 | <i>Intervention (n = 40)</i> Eight-week program using electronic app - Energy Balance on Cancer (BENECA mobile health program) at home while also receiving three time per week group therapy. Group sessions focused on symptom management, exercises, and group meditation. Participants were encouraged to incorporate the exercises into their daily routines. | - European Organization for Research and Treatment Cancer Quality of Life Questionnaire (EORT QLQ-C30) | Health Management | <i>Significant Findings</i> Global quality of life was significantly better for participants in the intervention group ($p = .004$) <i>Nonsignificant Findings</i> None |
| | <i>Design</i> RCT | | | | |
| | <i>Inclusion Criteria</i> Age 25–75, diagnosed with Stage I-III breast cancer, classified as overweight or obese | | | | |
| | <i>Intervention Setting</i> Outpatient | | | | |
| | | <i>Control (n = 40)</i> Completed 8-week BENECA mobile health program at home (with no rehabilitation). | - Breast Cancer Specific Quality of Life Questionnaire (QLQ-BR23) | | |
| Petruseviciene et al., 2018 | <i>Participants</i> N = 22 | <i>Intervention (n = 11)</i> Six-week community-based occupational therapy program with four group sessions one time per week for less than 2 hr. Sessions focused on creativity, purposeful activities, and communication with others. | - EORTC QLQ-C30 - QLQ-BR23 | Leisure & Social Participation | <i>Significant Findings</i> Overall quality of life (EORTC QLQ-C30) scores between groups showed the experimental group had statistically better global quality of life ($p = .001$), physical ($p = .013$), emotional ($p = .001$), cognitive ($p = .001$), and social functions ($p = .002$). |
| | <i>Design</i> RCT | | | | |
| | <i>Inclusion Criteria</i> Women, age ≥ 18 , diagnosed with breast cancer | | | | |
| | <i>Intervention Setting</i> | | | | |
| | <i>Location</i> Lithuania | | | | |

OCCUPATION-BASED INTERVENTIONS FOR BREAST CANCER

| | | | | | |
|---|---|--|--|---|--|
| | Community | <i>Control (n = 11)</i> Typical activities. Received occupational therapy consultation if needed. | | | On the QLQ-BR23 the experimental group had significantly better results in the systemic therapy side effects ($p = .001$) and breast symptoms ($p = .029$) scales. <i>Nonsignificant Findings</i> Scores in other functional or symptom scales did not differ between groups ($p \geq .05$). |
| Author, Design, & Location | Study Details | Groups | Outcomes | Occupation-based Intervention | Results |
| Şahin & Uyanik, 2019 | <i>Participants</i> $N = 22$ (M age, 47) | <i>Intervention (n = 22)</i> Six-session problem-solving strategy intervention, using a meaningful, purposeful, and observable target. Stage 1: Setting goals to solve performance problems. Stage 2: Pros/Cons of solutions with use of the Canadian Occupational Performance Measure. Stage 3: Make a plan and put into action. Stage 4: Receive feedback and revise process. <i>Control (n = 0)</i> NA | - Beck Depression Inventory - EORTC-QOL C30 - QLQ-BR23 | Variety (participants selected from selfcare, productivity, and leisure participation using the COPM) | <i>Significant Findings</i> Depression was reduced and quality of life improved after intervention with results indicating significant changes on the Beck Depression Inventory, EORTC-QOL C30, and QLQ-BR23 ($p < .01$). <i>Nonsignificant Findings</i> None |
| <i>Design</i> Non-randomized, pretest/posttest | <i>Inclusion Criteria:</i> Women, ages 18–64, diagnosed breast cancer Stage 1 or 2, received chemotherapy in the last 6 months | | | | |
| <i>Location</i> Turkey | <i>Intervention Setting:</i> Outpatient | | | | |