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Are Five Sessions of Individual Based Art Therapy Effective In Reducing Emotional Problems in Swedish Women with Nonmetastatic Breast Cancer Receiving Radiation Therapy?

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ABSTRACT

OBJECTIVE: The objective of this selective EBM review is to determine "Are five sessions of individual based art therapy effective in reducing emotional problems in Swedish women with nonmetastatic breast cancer receiving radiation therapy?"

STUDY DESIGN: This review is based on three randomized control studies, two which were published in 2009 and one that was published in 2006.

DATA SOURCES: All articles used were published in English, in peer-reviewed journals, and found using PubMed, Ebscohost, and Cochrane Review databases.

OUTCOMES MEASURED: For all studies, factors pertaining to emotional problems were measured through self-assessment questionnaires.

RESULTS: Svensk et al found improvement in overall quality of life as well as several subsets. Öster et. al found improvement in social coping resources. Thyme et. al showed improvement in general symptoms, depression, somatic symptoms, and anxiety. Each study also had measured outcomes that did not show improvement with the use of art therapy.

CONCLUSIONS: All studies showed evidence to support improvement in emotional problems after art therapy. However, due to small sample sizes, similar cohorts, lack of replicated outcomes measured between studies, and other factor, additional studies are needed prior in order to determine clinical significance.

KEY WORDS: Breast cancer, emotional problems, psychosocial, art therapy

INTRODUCTION:

Breast cancer is the most common cancer in women, affecting one in eight, and a leading cause of death from cancer across all races of women in the United States.[1] In 2013, 230,815 women were diagnosed with breast cancer in the US, and of those women, most were diagnosed with infiltrating ductal cancer. [1,2] While occurring more commonly in women of increasing age, of Caucasian race, with a strong family history, or personal history of a BRCA1/2 mutation, advances in mammography and routine screenings have helped in the prevention and progression of the disease.[2] Current therapies, including breast-conserving surgical excision, chemotherapy, radiation therapy, and adjuvant endocrine therapy, are mainstays in treating the pathological side of breast cancer, however, little research has been done into treating the sequelae experienced by cancer survivors.[2,3]

Breast cancer affects a woman physically, mentally, and emotionally. In some cases, emotional and psychosocial sequelae of breast cancer lasts long after treatment of the primary disease. Providers are instructed to follow up on breast cancer patients not only for risk of worsening pathology, but to also inquire in regards to their psychosocial issues.[3] Serious depression is rarely seen in breast cancer patients and survivors.[4] Patients are more likely to experience treatment-related distress, fear of recurrence, decreased body image, lower desire for sexual intercourse, as well as physical toxicities that result from adjuvant therapy that can impact their quality of life.[4] As with any patient experiencing emotional and psychosocial problems, providers should be able to treat patients to the best of their ability or refer patient to the appropriate specialist when treatment is out of the scope of their practice. Support groups, counselors, therapists, and relaxation techniques are currently utilized to treat the emotional problems that may result from breast cancer. [3,4]

An alternative option for the management of emotional difficulties in patients with breast cancer is the use of art therapy. Art therapy uses multiple artistic mediums, the creative process, and patients' own artwork to improve emotional problems. These benefits include exploring their feelings, dealing with conflicts, improving self-awareness, decreasing stress, and bettering self-image. When administered by specially-trained, Master's-prepared, licensed mental health professionals, research supports the use of art therapy for such previously stated benefits in individuals that experience illness.[5]

This need for an alternative therapy becomes even more salient when considering the overwhelming economic cost of managing the disease process and long-lasting sequelae of breast cancer in patients and survivors. Each patient diagnosed with breast cancer may expect to have multiple visits with a variety of care providers each year. Estimating the total number of visits is difficult, as care is tailored to the needs of each individual. Current guidelines recommend routine surveillance visits every 3-4 months during the first 2-3 years of remission and then once every 6 months to a year of remission.[3] This, in addition to the number of ancillary visits required to cover the social costs of cancer, place conservative estimates of the economic burden placed on the healthcare system at $16.5 billion in the US.[6]

This paper evaluates three randomized control trials for the efficacy of five sessions of art therapy in improving emotional problems in breast cancer patients.

OBJECTIVE

The objective of this selective EBM review is to determine whether or not five session of individual based art therapy is effective in reducing emotional problems in Swedish women with nonmetastatic breast cancer receiving radiation therapy.

METHODS:

All three randomized control trials used in this review utilize similar cohorts of women undergoing radiotherapy for non-metastatic breast cancer in Sweden as depicted in Table 1. All studies use an intervention of five sessions of art therapy treatment at one week intervals that is compared to a control group receiving conventional treatment post-radiation as listed in Table 1. Each randomized control trial assesses psychosocial outcomes, including coping resources, self-image, psychological symptoms, and quality of life.

The key words used in the searches to find these studies were "art therapy" and "breast cancer." All articles were published in peer-reviewed journals in English. The articles were searched via PubMed, Medline, and Ebscohost, and the articles were selected based on relevance and creating a similar cohort of subjects across studies. To be included, studies were required to be RCTs published in an English language, peer-reviewed journal after 2000. Studies were excluded if they were published before 2000, not in a peer review journal, or not in English. Statistics including p values, mean and standard deviation, ANOVA, t value, 2 tailed p value, adjusted p value, and U test were utilized in the three RCTs selected.

Table 1- Demographics & Characteristics of included studies

Study	Type	# pts	Age (years)	Inclusion Criteria	Exclusion Criteria	W/D	Intervention
Svensk (2009)[7]	RCT	42	control: 55 intervention: 59.5 (median)	Women who were referred to the Department of Oncology at Umeå University Hospital, Umeå, Sweden, for post-operative	Dementia or severe psychiatric illness	1 participant was excluded due to incomplete data/	Five weeks of individualized art therapy.

				radiotherapy for nonmetastatic breast cancer.			
Öster (2006)[8]	RCT	55	37-69 Median 59	Women who were referred to the Department of Oncology at Umeå University Hospital, Umeå, Sweden, for post-operative radiotherapy for nonmetastatic breast cancer.	Dementia or severe psychiatric illness	13 8 from control group 5 from intervention group	Five weeks of individualized art therapy Session 1 was based on drawing analogs. Session 2 focused on a full scale body tracing Session 3 &4 followed the woman's own choice. Session 5 was devoted to displaying all of the woman's images.
Thyme (2009)[9]	RCT	55	37-69 Median 59.5	Women with who were undergoing post-operative radiotherapy for nonmetastatic breast cancer	Preexisting physical or psychiatric illness	13 8 from control group 5 from intervention group	Session 1 was based on drawing analogs. Session 2 focused on a full scale body tracing Session 3 &4 followed the woman's own choice. Session 5 was devoted to displaying all of the woman's images.

OUTCOMES MEASURED

Each study utilized measurements for a different psychosocial outcome. Svensk et al measured quality of life components through subject self-assessment by the Swedish version of the World Health Organization Quality of Life-BREF (WHOQOL) as well as the QLQ-BR23, version 1.0, developed by the EORTC- Quality of Life Group.[7] Öster et al measured coping resources across cognitive, social, emotional, spiritual/philosophical, and physical domains by the CRI questionnaire.[8] Thyme et al measured multiple outcomes. This included perceived self-image by subject self-assessment using the Structural Analysis of Social Behavior survey, multiple symptoms through a self-rating scale entitled Symptom Checklist-90, and the use of a thematic interview focused on perceived psychosocial experiences to self and others.[9]

RESULTS

In the study by Svensk et al., of the 42 women initially included in this study, one woman was excluded from the control group analysis due to incomplete data. This resulted in data analysis of 20 women in the interventional group receiving art therapy and 21 women in the control group. Quality of life (QoL) was measured three times: once prior to start of radiotherapy, at two months, and at six months. Results of the WHOQOL-BREF and EORTC QLQ-BR23 used to assess QoL were provided as means and standard deviations. This was then analyzed using Mann-Whitney U-tests to determine statistically significant differences with a level of significance of 5%.[7]

Results for the WHOQOL-BREF instrument indicated that by the third assessment at 6 months after the start of treatment, women in the interventional group art had significantly improved their overall QoL (mean: 85.00, SD: 12.57) compared to the control group (mean: 67.50, SD: 20.03) with an asymptotic significance of 0.003. It was also shown that the

interventional group had a higher general health scores (mean: 71.25, SD: 20.32) compared with the control group (mean: 55.00, SD: 23.79) with an asymptotic significance of 0.024 by occasion 3. In addition, the interventional group had an environment score (mean: 74.69, SD: 8.54) compared with the control group (mean: 68.59, SD: 11.58) with an asymptotic significance of 0.034 by occasion 3. A significant improvement within the interventional group itself from occasion 1 to occasion 3 was noted for domains involving Overall QoL, General health, Physical health, and Psychological health with an asymptotic significance of 0.033, 0.008, 0.042, and 0.045 respectively. A significant improvement within the control group itself from occasion 1 to occasion 3 was only noted for domain involving Psychological health with an asymptotic significance of 0.015; this is notably less than that within the control group for the same domain.[7]

No statistically significant differences were found on measurement occasions 1, 2 and 3 between the intervention group and control group based on EORTC QLQ-BR23 assessments. It is notable that statistically significant improvement within the intervention group from occasion 1 to occasion 3 was noted for body image, future perspectives, and systematic therapy side effects with asymptotic significance of 0.027, 0.016, and 0.006 respectively. No improvement was noted within the control group. [7]

In the study by Öster et. al., of the 55 women began in this study, 13 women dropped out. Five women dropped out of the interventional group and eight dropped out of the control group. Reasons from dropping out included too much strain (n: 7), disease complications (n: 2), and dissatisfaction with randomization outcome (n: 4). This resulted in data analysis of 20 women in the interventional group receiving art therapy and 21 women in the control group. Coping resources were measured three times in order to compare to patient baselines. Results of the CRI

were provided as means and standard deviations. This was then analyzed to obtain a p-value with a level of significance of 5%.[8]

The CRI measures coping resources across several domains: cognitive, social, emotional, spiritual/philosophical, and physical. *Cognitive* measures the extent to which subjects maintain a positive sense of self-worth, view towards others, and life as whole. *Social* measures the extent to which subject are part of supportive social networks in times of stress. *Emotional* measures the extent to which subjects are able to accept and show a range of affect, this is based on the theory that this range of emotional response can help with the chronic detrimental effects of stress. *Spiritual/philosophical* measures the extent to which actions of subjects are guided by consistent values derived from religion, family, culture, or personal philosophy. *Physical* measures the degree to which actions of subjects' behaviors believed to contribute to improve physical health.[8]

Results of the CRI scale showed statistically significant improvement only for the Social domain. This improvement was shown on occasion 2 and occasion 3 with 2- tailed p values of 0.037 and 0.030 respectively. All other domains had nonsignificant p-values.[8]

In the study by Thyme et. al of the 42 women initially included in this study, one woman was excluded from the analysis of the control group due to incomplete data. This resulted in data analysis of 20 women in the interventional group receiving art therapy and 21 women in the control group. This study assessed the effects of art therapy across multiple domains. The Structural Analysis of Social Behavior (SASB) was used to measure perceived self-image. This assesses 36 items which are grouped into eight clusters: spontaneous and impulsive self, accepting and exploring self, self-loving self, helping and nourishing self, controlling and restraining self, accusing and blaming self, self-hating self, and ignoring and neglecting self. Accepting and exploring self, self-loving self, helping and nourishing self are all loving clusters

and make up the attachment group of clusters (AG). Accusing and blaming self, self-hating self, ignoring and neglecting self are all negative clusters and make up the disruptive attachment group of clusters (DAG). This study also uses the Symptom Check List–90 (SCL 90), which assesses 90 symptoms divided into nine subscales, as well as the General Severity Index (GSI). This study utilizes subscales of depression, anxiety, and somatization are used along with the GSI. Lastly, this study uses interviews with art therapists focused on perceived psychological and social experiences of the subject and others was done prior to art therapy, at 2 months, and at 6 months after the first interview.[9]

SASB and SCL-90 were analyzed for group differences as well as hierarchical regression analysis. Means and standard deviations were reported for three measurements using the SASB and SCL-90. No significant differences were noted in this study in regards to data obtained using the SASB in comparing overall change as well as within the AG and DAG clusters. The data collected using the SCL-90 showed a statistically significant decrease in depression ($p= 0.002$), anxiety ($p= 0.009$), somatic symptoms ($p= 0.049$), and in GSI scores ($p= 0.005$) from the first to third measurement. The control group had no significant change in symptoms.[9]

DISCUSSION

Results from the three studies presented are conflicted. Although each of these studies showed some statistically significant improvement suggesting that art therapy is beneficial, the clinical significance is questionable given substantial limitations.

Of primary importance is the lack of generalizability of the results. Each study contained a similar cohort in size as well as demographics. All studies part of this review utilized a cohort of <60 individuals; therefore, the findings could be considered less significant than if a larger sample size was utilized. Similar cohorts in regards to demographics shows reproducibility of

findings which supports the significance for such patients. However, due to the fact all were seeking radiation therapy in Sweden and of similar age, it may be difficult to apply these results, which are specific to Swedish women who have benefitted from socialized medicine, to a more diverse and underserved American populace.

Additionally, each study utilized the same intervention of 5 specific art therapy sessions. While this adds validity by showing that this specific intervention has statistically significant improvement, it does not support the idea that art therapy as a whole is beneficial, but rather this specific art therapy regimen. Varying the number of therapy sessions or comparing the efficacy of art therapy to another alternative therapy, like music therapy, would help strengthen the validity of the findings.

Lastly, each study measures emotional outcomes differently. Svensk et al shows evidence of improved quality of life. Öster et al presents evidence of improved coping resources specifically for the Social domain. Thyme et al presents evidence of decrease in General severity of symptoms, depression, anxiety, and somatic symptoms. Although all of these support an improvement in emotional problems, none of them directly reproduce results found in another study.

CONCLUSION

After review of three RCTs involving five sessions of art therapy, the data supporting reduction of emotional problems in breast cancer patients is inconclusive. This data supports improvement in outcomes specifically for Swedish women with nonmetastatic breast cancer receiving radiation therapy. However, none of the randomized control studies compared art therapy to other treatment options such as medications or counseling.[4] With only a control group receiving no intervention it is difficult to determine if art therapy is a viable alternative or

adjunctive treatment to ones that are already being utilized. In addition, small sample sizes, similar cohorts, and multiple outcomes measured merits additional studies for application on a larger scale. Larger more diverse studies comparing art therapy to treatment options already in place are merited.

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