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Efficacy of stress management and psychosocial interventions on body image in breast cancer survivors-A systematic review

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Abstract

Breast cancer surgery and prolonged anticancer treatments lead to temporary of permanent changes in the appearance of the patients. Breast cancer conservative surgery or reconstruction can improve body image disturbances, however a subgroup of breast cancer survivors experience elevated levels of anxiety, depression and increased risk of mortality. Common practices often camouflage and target on temporary appearance changes. This paper systematically reviews the effectiveness of interventions on body image outcomes in this group, in order to inform healthcare providers. Pubmed and Scopus were searched for articles published from the start of the literature until 2018 that evaluated interventions with women who had undergone treatment for breast cancer in controlled trials with at least one body image measure. Data were extracted and studies were assessed for their methodological quality using the Jadad Scale. Results indicated four interventions that included a multimodal residential program, a multi-activity exercise program, a strength training program and a mindfulness based stress reduction intervention. We recommend that such interventions should be prioritized and be recommended to health care professionals aiming to improve body image among breast cancer survivors

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Background

Breast cancer is enlisted as the first common diagnosis of cancer in women worldwide.[1] Meanwhile, steadily arising percentages of long-term survival rates after diagnosis indicate that the breast cancer survivors have to face the adverse effects of the surgery and the prolonged anti-cancer treatments.

One major effect either temporary or permanent changes the appearance. Surgical procedures often lead to breast dimorphs, scarring, loss of sensation and lymphedema while adjuvant therapies affect hair, body weight, fatigue, nails and deterioration of menopausal symptoms. These changes can cause considerable psychological distress[2,3],as up to 77% of women with breast cancer experience some degree of body image disturbance[4] and do not seem to improve up to 5 years follow up.[5,6]

Breast-conserving surgery or reconstruction can help reduce BI disturbance. However, a subgroup of BC survivors continues to experience BI related concerns despite breast conservation or reconstruction.[7,8]

Prospective studies show that poor body image can lead to elevated levels of anxiety, depression, and sexual and concerns, and increased risk of mortality.[9,10]

Common practices that are more available on this group often camouflage and target on temporary appearance changes (e.g., make up, wigs). For instance, "Look Good, Feel Better" is a globally delivered skin care and make-up workshop, which instructs women make-up techniques to help manage eyebrow and eyelash loss.

Psychosocial support available following active treatment, such as the UK-based "Moving Forward" group courses, provides support and information on a wide range of issues, within which body image is only briefly explored. Even though these free services are beneficial, they undergo only superficial evaluation. As a result, their impact on body image is unknown. This emphasizes the importance of developing and evaluating psychosocial interventions to manage body image concerns for women at different stages of breast cancer treatment.

This paper therefore reports a systematic review of studies evaluating stress management and psychosocial interventions delivered to women diagnosed with breast cancer targeting on body image outcomes.

Method

Literature Review

A search for English-language papers published from the start of the literature until March 15, 2019 was carried out in Pubmed and Scopus. The combinations utilized were *(stress management) OR cognitive based stress management) OR mindfulness based stress reduction) OR mindfulness-based cognitive therapy) OR guided imaginary) OR psychosocial intervention) OR cognitive behavioral therapy) OR group therapy) OR psychotherapy) AND breast cancer) AND body image) AND distress) OR psychological distress***.** In addition, a snowball technique was employed in order to include any potential studies not revealed through this process. Issues of related journals, reference lists of included studies, and other relevant papers in the field were rummaged through in an attempt to locate possible records. The flow of information from record identification to inclusion followed the principles of the PRISMA statement.[11]

Study Selection

Regarding study selection, the inclusion criteriawereas follows: (1) original articles published in peer-reviewed journals, (2) two arm trials including an intervention and a control group, (3) being published in English, (4) applying an evidence based stress-management intervention or a combination of more or in combination with any other healthy lifestyle modification (e.g. physical activity), (5) measuring body image perceptions, (6) involving a baseline and at least one post-interventional assessment. Identified abstracts were stored using Zotero reference management software. Duplicates were deleted and a unique identification was assigned to each citation. When the information provided by the title and abstracts was found to be relevant to the present research, or when this information was insufficient to decide on inclusion, the full text article was retrieved and evaluated. All remaining articles were read in their entirety and a final selection was made.

Data Extraction

The extracted data from the papers included in our analysis was: reference, country, sample size and age, intervention, control condition, measures used, intervention main findings, control group main findings. The quality of trials was estimated by using the Jadad Scale. The Jadad Scale is a brief (score range 0–5 points) instrument used to rate the quality of a trial by assessing the methods relevant to random assignment, double blinding, and the flow of patients Randomization and double blinding were given two points each, while reporting withdrawal and dropout reasons received a single point[12] (Table 1).

Results

The initial literature search by key words revealed 928 papers; after excluding duplicates and irrelevant papers by review of titles and abstracts, this number was reduced to 31. After reading the full text of these 31 papers, more papers were excluded according to the selection criteria, finally leaving 4 papers for analysis (Figure 1).[13,14,15,16] All of these were randomized controlled trials. The participants in all studies were measured at baseline, those in the intervention group were provided with a stress management practiced during the full length of follow-up, and all were measured during an endpoint assessment. The specific characteristics of the four studies are detailed in Table 2. The quality of the four included in the review trials was found to be moderate (rating of 3 points) on the Jadad Scale. The eligible studies are presented in narrative form in the next section.

Summaries of Included Studies

Beatty et al.[13], hypothesized that the use of aworkbook together with suggestions would show greater reductions than controls in the primary outcome, distress, and greater improvements in the secondary outcomes, QoL(Quality of Life), coping and body image(BI).Forty nine womenwith Stage 0 to II breast cancer were randomly assigned into an intervention and a control group. The intervention group received a self-help workbook entitled "Finding your way: a workbook to help you cope with your breast cancer diagnosis and treatment". Chapters included information and worksheets about common psychosocial and medical issues, sessions for relaxation and meditation (progressive muscle relaxation and mindful meditation tracks) along with a compact disc, coping with side effects, emotional adjustment, body image and identity as well as social support. Gradual reading of chapters was recommended over a 3-month period to reduce participant burden, and to select sections of higher relevance rather than reading sequentially. Control participants received a booklet that contained identical information to that in the workbook, but were provided with no suggestions, worksheets or compact disc with relaxation and meditation tracks. The duration of the program lasted for 3 months and follow-up was after 3 months after the end of the program. Measurements included: Sociodemographic characteristics as well anxiety, depression and distress with DASS-21, Posttraumatic Stress Diagnostic Scale — Self Report, European Organisation for Research and Treatment of Cancer quality of life core questionnaire and breast cancer questionnaire (global QoL and BI), and Mini-Mental Adjustment to Cancer scale. Results showed that the intervention group had improvement on posttraumatic stress, cognitive avoidance, and certain depressive symptoms. However, to the researchers' surprise the control group showed greater improvements on BI.

Fadeiet al.[14] examine the effects of cognitive behavioral counseling on body image among Iranian women with primary breast cancer. Seventy two patients who had undergone breast cancer surgery were randomly assigned in two groups. The intervention group received consultation based on Ellis Rational Emotive Behavior Therapy (REBT) method for 6 sessions during 3 weeks while control group did not receive any intervention. Measurements included Sociodemographic characteristics as well as assessment of BIwith Body Image Scale, QoL with the instrument of Organization for Research and Treatment of Cancer (EORTC).

Results indicate that BI score was significantly improved in the intervention group compared to control group.

Pintadoet al.[15] hypothesized that mindfulness training will be effective in reducing negative thoughts and emotions re-

lated to BI in patients with breast cancer. Forty nine women with Stage I- II breast cancer were randomly assigned into two groups. Intervention group consisted of mindfulness training to improve BI for 8 weeks while control group was assigned in a program based on personal image advice for 6 weeks.Measurements included Sociodemographic characteristics as well as the Body Image Scale and the Scale of Body Connection. Intervention group showed improvements on BI -decreased the alterations and negatives thoughts while control group improved body awareness.

Esplen et al.[16] assessed primarily the efficacy of a multimodal psycho educational intervention (based on cognitive behavioral therapy) on enhancing positive BI, and secondary outcomes included sexual functioning and QoL. One hundred ninety four women with I-III breast cancer were randomly assigned into two groups. The intervention group consisted of guidedImagery exercises as well as an educational component on the socialization factorsaffecting women's BI and self-esteem. The control group received no intervention. Both groups received educational reading materials. Measurements included Sociodemographic characteristics, BI perceptions, sexual functioning and QoL with breast cancer. Intervention group showed lower BI concerns, a lower level of body stigma, sexualfunctioning improvement(not statistically significant to control group) and improvement in QoL.

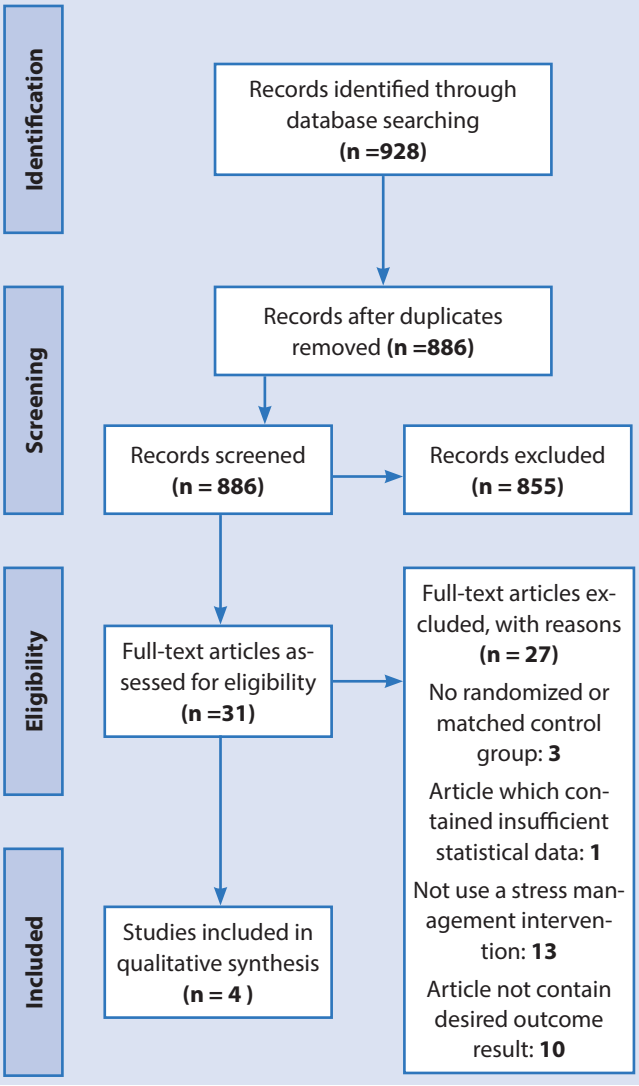
Conclusion

Common practices available on breast cancer survivors' body image issues are covered either superficially or briefly explored. Despite the necessity for psychosocial interventions addressing to this group, literature is limited to a few studies.

As indicated in Table 1 the most commonly used instrument for assessing BI is the Body Image Scale. All studies included women with non metastatic breast cancer stage I-II and one included stage III too. Furthermore, two studies had active control groups whereas the other two did not have active control group. All four studies used randomization. All selected studies used different psychosocial intervention including rational emotive behavioral therapy, mindfulness-based stress reduction in comparison to personal image advice, group psychotherapy with guided imaginary exercises and a self-help workbook plus CDs with relaxation and meditation tracks in comparison to a similar information booklet without CDs.

Beatty et al.[13] demonstrated that participants who received the self-help workbook plus CDs with relaxation and meditation tracks manifested improvements on posttraumatic stress, cognitive avoidance, and certain depressive symptoms while the distribution of an informative booklet in the

Figure 1. Information Flowchart



control group was beneficial on improving BI.Fadeiet al.[14] demonstrated that participants who received REBT improved their body image. Pintado et al.[15]showed that a mindfulness program was effective in decreasing negative emotions and thoughts related to body image and the dissociation; and to increase the positive thoughts related to patients' appearance and body awareness.Esplen et al.[16] demonstrated that group psychotherapy based on cognitive behavioral therapy in combination with guided imaginary exercises is beneficial in lowering BI concerns, lower level of body stigma; improve of sexual functioning and quality of life.

The present systematic review is the first study that clearly focuses on the effect of stress management programs on body image in breast cancer survivors.

Only one systematic review was conducted investigating the efficacy of psychosocial and physical activity-based interventions to improve body image among women treated for breast cancer. Results indicate 4 interventions that include a multimodal residential program, a multi-activity exercise program, a strength training program and a mindfulness based stress reduction intervention. Authors believe that such interventions should be prioritized and be recommended to health care professionals aiming to improve body image among breast cancer survivors.[17]

A limitation of our research might be the limited number of studies selected for review. Therefore, future studies are needed to study the effectiveness of stress management programs for body image improvements in breast cancer survivors. The huge impact of stress on body image indicates a need for stress management programs in breast cancer clinics. Such programs could be introduced in oncology units; for example, by educating existing staff in stress management interventions.

Table 1. The Jadad scale

1. Was the study described as randomized (this includes words such as randomly, random, and randomization)? (+1 Point)
2. Was the method used to generate the sequence of randomization described and appropriate (table of random numbers, computer-generated, etc)? (+1 Point)
3. Was the study described as double blind? (+1 Point)
4. Was the method of double blinding described and appropriate (identical placebo, active placebo, dummy, etc)? (+1 Point)
5. Was there a description of withdrawals and dropouts? (+1 Point)
6. Deduct one point if the method used to generate the sequence of randomization was described and it was inappropriate (patients were allocated alternately, or according to date of birth, hospital number, etc)
7. Deduct one point if the study was described as double blind but the method of blinding was inappropriate (e.g., comparison of tablet vs. injection with no double dummy

Table 2. Extracted studies

Recerence	N/mean age	Stage	Intervention group	Control group	Measures used	Intervention main findings	Control main findings
Beattyetal.[13]	49/55,25	0-II	self-help workbook+CDs with relaxation and meditation tracks 12weeks	Information book letwithoutCDs	DASS-21, PSDS, ORTC-Br, MMACaS	improve posttraumatic stress, cognitive avoidance & certain depressive symptoms	improved BI
Fadeietal.[14]	72/43.6	I-III	REBT 3weeks	standardcare	BIS, EORTC-Br	Improved BI	
Pintado.etal.[15]	29/49.34	I,II	MBSR 8 weeks	personal image advice 6 weekly sessions	BIS, SBC	Improved BI -decreased the alterations & negatives thoughts	Improved body awareness
Esplenetal.[16]	194/50,4	I-III	RBIC 8weeks	standard care + educational reading materials	BIS, BIBCQ, FSFI, FACT-B	lower BI concerns, a lower level of body stigma, improvement in FSFI & QoL	

BI: Body Image, **BIBCQ:** Body Image After Breast Cancer Questionnaire **BIS**: Body Image Scale, **DASS**: Depression Anxiety and Stress Scale, **EORTC-Br**: European Organization for Research and Treatment of Cancer quality of life core questionnaire Breast cancer module, **FACT-B:** Functional Assessment of Cancer Treatment, **FSFI**: Female Sexual Function Index, **MBSR:** Mindfulness-based Stress Reduction, **MMACaS:** Mini-Mental Adjustment to Cancer scale, **PSDS**: Posttraumatic Stress Diagnostic Scale-Self Report, **RBIC**: Restoring Body Image after Cancer, **REBT**: Rational emotive behavior therapy,

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