

**A Pilot Study of a Body Image Intervention for Breast Cancer Survivors**

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**Abstract**

Body image interventions for breast cancer survivors are lacking in empirical support. Examining existing research on effective body image interventions for women in midlife more broadly may provide useful insights. This pilot study assessed the acceptability, feasibility, and preliminary effects of a Cognitive Behavioural Therapy-based intervention adapted from women in midlife to promote positive body image among breast cancer survivors. Twenty-two breast cancer survivors received the 7-week group intervention, co-facilitated by a clinical psychologist and peer. Participant evaluations suggested the intervention was both acceptable (e.g., 94% would recommend it) and feasible (e.g., 91% completed the intervention). Improvements were identified at either post-test or 1-month follow-up in nearly all body image measures. Maintained improvements were found in body appreciation, weight and shape concern, acceptance of aging-related appearance changes, and self-esteem. This study suggests that the adapted intervention is acceptable, feasible, and demonstrates preliminary efficacy in improving body image and secondary outcomes among breast cancer survivors.

*Keywords:* body image; breast cancer; cognitive behavioral therapy; group; intervention; body appreciation; self-esteem

## Introduction

Breast cancer is the most commonly diagnosed cancer among women around the world (Ferlay et al., 2015). However, medical advances have led to an increase in survival rates. As a result, more women are living with the consequences of the disease and its treatment. One major consequence of breast cancer treatment is changes to appearance, including breast asymmetry, scarring, sensation loss, and lymphedema. Side effects of adjuvant therapies (chemotherapy, radiotherapy, hormone therapy) can include hair loss and thinning, weight fluctuation, fatigue, skin and nail discolouration, dermatitis, and the exacerbation of menopausal symptoms. These changes can evoke long-lasting body image concerns for women (Falk Dahl, Reinertsen, Nesvold, Fosså, & Dahl, 2010).

Body image is a multidimensional construct encompassing perceptions, thoughts, feelings, and behaviours, in relation to the body's appearance, functions, and capabilities (Cash & Pruzinsky, 2002). Up to 77% of women treated for breast cancer experience some degree of body image distress (Begovic-Juhant, Chmielewski, Iwuagwu, & Chapman, 2012), and longitudinal research indicates little improvement five years post-treatment (Falk Dahl et al., 2010). These findings warrant concern as poor body image predicts elevated levels of anxiety, depression, sexual and intimacy concerns, and shorter length of survival (Cousson-Gelie, Bruchon-Schweitzer, Dilhuydy, & Jutand, 2007; Lam et al., 2012). The importance of addressing residual psychosocial consequences of cancer diagnosis and treatment has been recognised internationally by governments, health policy and services, and community organisations (e.g., Centers for Disease Control and Prevention & Lance Armstrong Foundation, 2004; Department of Health, Macmillan Cancer Support, & NHS Improvement, 2013). Breast Cancer Care, a leading breast cancer charity in the United Kingdom, has called for more body image-specific support for women treated for breast cancer (Breast Cancer

Care, 2014). This consequently highlights the importance of developing effective body image interventions for this group.

Currently, body image support consists of practical services for camouflaging treatment-related appearance changes (e.g., “Look Good, Feel Better” skin care and make-up workshops), structured group courses to address more general psychosocial issues associated with cancer treatment (e.g., UK-based Breast Cancer Care’s “Moving Forward” programme), and formal one-to-one psychotherapeutic support. Nevertheless, these services have not undergone rigorous evaluation and their long-term impacts remain unknown (e.g., Taggart, Ozolins, Hardie, & Nyhof-Young, 2009). Further, a systematic review of interventions targeting body image concerns among women treated for breast cancer indicated limited effectiveness (Lewis-Smith, Diedrichs, Rumsey, & Harcourt, manuscript under review). Less than half of the interventions improved body image either at post-test or follow-up with no maintained effects, and there was a general lack of methodological rigour across studies. With regard to intervention approach and content, most interventions reviewed did not adopt an exclusive or explicit focus on body image. Instead, they addressed body image concerns within a smaller component of a larger intervention. Additionally, interventions tended to employ a narrow disease-focused approach (i.e., only focusing on disease- and treatment-related concerns specific to cancer), rather than adopting a holistic approach that recognises the interaction between the individual, the disease, and the broader sociocultural context of women’s lives. Finally, most interventions lacked an empirically supported theoretical or aetiological basis, thus failing to target modifiable risk factors and potential mechanisms of change (such as sociocultural and psychological influences). Overall, these findings indicate significant scope for the further development and rigorous evaluation of body image interventions for women who have undergone treatment for breast cancer.

Consulting evidence-based interventions in the wider body image field that have undergone rigorous testing with other populations may be a useful avenue for advancing research in this area. Given that women treated for breast cancer tend to be in midlife, they may also be vulnerable to the body image concerns associated with ageing-related bodily and appearance changes experienced by women who have not had cancer (McKinley & Lyon, 2008). Effective interventions among women in midlife more broadly may therefore offer clues for improving intervention effectiveness. Indeed, a systematic review of interventions targeting body image among women in midlife (Lewis-Smith, Diedrichs, Rumsey, & Harcourt, 2016) found that the majority were effective at post-test, with nearly half of interventions reporting maintained improvements. The methodological rigour was also superior across studies, thus drawing greater confidence in their findings.

A Cognitive Behavioural Therapy (CBT) – based intervention, which exclusively and explicitly addresses body image (McLean, Paxton, & Wertheim, 2011), was identified as particularly promising. The intervention, *‘Set Your Body Free’*, adopted an aetiological approach and targeted established risk factors for body dissatisfaction among women, including perceived sociocultural appearance pressures (e.g., from the media and family; Green & Pritchard, 2003), internalisation of appearance ideals (i.e., the extent to which an individual “buys into” socially determined standards of beauty; Katz, 2005), and the tendency to compare one’s appearance with that of others (i.e., appearance comparisons; Kozar & Damhorst, 2008). This intervention conferred the longest-lasting effects of the largest size on multiple measures of body image among women in midlife. It was also evaluated as the most methodologically rigorous study reported in the systematic review (McLean et al., 2011). Additionally, research has found that the targeted risk factors also predict body image among women treated for breast cancer (Moreira & Canavarro, 2010; Przedziecki et al., 2013).

Further, CBT has been found to effectively alleviate psychological distress more broadly among women with breast cancer (Tatrow & Montgomery, 2006).

The CBT-based intervention developed by McLean and colleagues (2011) also overcomes the limitations of previously evaluated interventions among women treated for breast cancer (Lewis-Smith, Diedrichs, Rumsey, & Harcourt, manuscript under review) in several ways. *'Set Your Body Free'* exclusively and explicitly addresses body image, and thus addresses and validates women's body image specific concerns. This is valuable, given that many women treated for breast cancer feel that the adverse consequences of treatment-related appearance changes, and their body image concerns more specifically, are not recognised or adequately addressed by health professionals (McWilliam, Brown, & Stewart, 2000). Further, it adopts a holistic approach by recognising the broader sociocultural context beyond cancer which is likely to influence one's body image (e.g., appearance ideals that reinforce youth, thinness, etc. for all women). The intervention also adopts a cognitive-behavioural and aetiological therapeutic approach by targeting broader and modifiable sociocultural and psychological risk factors. Taken together, with some adaptation, *'Set Your Body Free'* may be a useful intervention to improve body image among women who have received treatment for breast cancer.

In the current study, *'Set Your Body Free'* was adapted for use with women treated for breast cancer, by tailoring it to this population on the basis of existing research in the field and consultation with women from this group and relevant health professionals. In line with the Medical Research Council's framework for the Development of Complex interventions (Craig et al., 2008), before proceeding to a large-scale efficacy trial, this pilot study aimed to evaluate the acceptability, feasibility, and preliminary efficacy of *'Accepting your Body after Cancer'* (the adapted intervention) among women treated for breast cancer.

## **Method**

### **Participants**

Details regarding participant recruitment and retention are included in Figure 1. The first form of recruitment involved soliciting interest in the study from local cancer charities and support groups. Their advertising resulted in 27 women expressing an interest in the study. The second form of recruitment was via university advertising (e.g., using social media), and resulted in 13 women expressing an interest. Finally, six women who were interested in participating in the prior phase of consulting on the intervention adaptation, but were unable to attend the focus group sessions, were invited to take part in the current study. Four of these women were interested.

The 44 women were assessed for their eligibility. Inclusion criteria included being above the age of 35 years, completed active treatment for breast cancer, and being able to attend at least five of the seven intervention sessions. Reasons for not taking part were predominantly related to the timing and location of the intervention. In total, 22 eligible women were enrolled into the study.

### **Intervention**

The original intervention, *'Set Your Body Free'* (McLean et al., 2011), used CBT strategies to address concerns associated with aging-related appearance changes and disordered eating. Other themes included engagement in self-care, body acceptance, and reducing the importance of appearance to one's self-worth. The intervention was adapted, and feedback was sought, prior to the current pilot study. First, all intervention materials were adapted for use with women treated for breast cancer by removing all elements pertaining to disordered eating. Second, examples were adapted and added to represent concerns associated with cancer treatment-related appearance changes. All three authors

were involved in the adaptation of the intervention materials, including DH, who possesses 20 years of expertise and knowledge in the field of breast cancer and body image. Existing literature concerning the wide-ranging nature of body image concerns among this group of women (e.g., Ashing-Giwa et al., 2004; Beatty, Oxlad, Koczwara, & Wade, 2008; Harcourt & Frith, 2008; Ridner, Bonner, Deng, & Sinclair, 2012) was also consulted to inform the adaptations. The adaptation process led to a reduction in the number of sessions from the original 8 to 7.

Following this, feedback on the adapted intervention was sought through focus groups with a separate sample of 22 women treated for breast cancer. The mean age of these women was 51.42 years, and the majority were White (90.1%), partnered (90.9%), employed (68.2%), and educated beyond secondary school (77.3%). Women had been diagnosed and treated at least 1.5 years earlier, and half of them had undergone a mastectomy with reconstruction (54.6%), and received adjuvant therapy (chemotherapy: 63.6%, radiotherapy: 63.6%, hormonal therapy: 50%). Six focus groups were conducted with 3-5 women in each group. The focus groups lasted 3 hours on average including short breaks. Women were provided with the intervention materials prior to attending the focus group, and their opinions were sought in relation to each session's content during the focus group. Feedback was also sought via one-to-one interviews from three clinical psychologists and two breast cancer nurse specialists, who possessed between 10 and 25 years of expertise in the areas of breast cancer and body image. Similarly, these health professionals reviewed the intervention materials prior to participating in an interview, which lasted 71 minutes on average. The intervention was considered acceptable among both the women treated for breast cancer and health professionals. However, both groups recommended adding content concerning intimacy and managing the reactions of others. These topics were therefore incorporated into the adapted intervention.



In the current pilot study, the adapted body image intervention, '*Accepting your Body after Cancer*', was delivered to two groups of participants (9-12 participants per group) across seven weekly 2-hour group sessions. A summary of the content of the sessions is provided in Table 1. Groups were facilitated by a clinical psychologist (with four years' experience of delivering CBT and group-based interventions) and a peer who had received treatment for breast cancer. This pairing of facilitators was informed by a previous online questionnaire exploring general preferences for body image support among 135 women treated for breast cancer (Lewis-Smith, 2017) and the focus groups reported in the present study, which were conducted with 22 women to explore the acceptability of the adapted intervention. The questionnaire indicated that a peer was women's most preferred person to deliver body image support (73.3%). Subsequent discussions in the focus groups in the present study revealed an overall preference for co-leadership for this specific intervention from a peer, who has the "lived" experience and can relate to other women who have undergone breast cancer treatment, and a clinical psychologist, who has the expertise and knowledge in delivering CBT. Facilitators received training (lasting 9 hours) in delivering the intervention from the first author prior to the first session. Whilst the clinical psychologist was consistent for both groups, the peer differed for each group. Facilitators followed session agendas to ensure standardised session delivery across the two groups. The facilitators took it in turns to present the content during each session. However, the peer tended to lead the activities that required participants to reflect on their experience (e.g., reactions from partners), whilst the clinical psychologist led all cognitive and behavioural change strategies techniques. Each week, participants were given handouts to read, which included activities to complete prior to the next session. These include psychoeducational material and cognitive and behavioural change strategies. Session attendance was good across both groups, with at least 67% of participants attending each session (see Figure 1).

Only one participant dropped out of the intervention (in Group 2), and this was due to cancer recurrence.

## **Measures and Procedure**

Approval for the study was obtained from the University's Research Ethics Committee (REC REF No: HAS.17.02.110). After participants provided informed consent, they completed the baseline questionnaire online via Qualtrics. This included questions relating to demographic and cancer information, and the primary and secondary intervention outcome measures. The outcome measures were also completed upon finishing the intervention (post-test), and 1-month later (follow-up). To inform intervention acceptability, participants completed a weekly feedback form, in addition to an extensive questionnaire following completion of the last session.

**Intervention feasibility.** Objective data collected on intervention feasibility included participant enrolment, retention, and completion of the outcome assessments at each time point.

**Intervention acceptability.** The weekly feedback forms asked participants to rate the particular session for relevance, interest, and comfort. The questionnaire at the end of the intervention explored participants' experience of the intervention as whole. This included open-ended or multiple-choice questions relating to content, facilitators, format, and perceived impact of intervention. Participants indicated their agreement with each statement using the following options: *not at all*, *very little*, *somewhat*, *quite a bit*, and *very* (see Table 2). The responses in the *quite a bit* and *very* categories were collapsed to indicate agreement with the question. In an attempt to minimise demand characteristics, participants were informed that their feedback would remain anonymous, and would not be shared with the facilitators.

**Cancer and demographic information.** Cancer and treatment information (e.g., stage of disease, treatment received) and demographic data (e.g., age, weight, marital status) were collected via a series of self-report multiple-choice and open-ended questions.

**Intervention outcomes.** Descriptions and internal consistencies of the measures are displayed in Table 3. Body image was the primary outcome of interest. Several measures were employed to capture its multidimensional nature and to allow comparisons with the effects of the previous trial evaluating the original intervention with women in midlife. We also assessed a range of modifiable psychological factors that have been associated with body image among women in midlife (secondary outcomes).

### **Data Analyses**

Statistical analyses were conducted on quantitative data in SPSS version 23. Descriptive statistics were calculated on participant demographics, feasibility, and acceptability data, and on intervention outcomes. The degree of missing data was 14% at baseline, 18% at post-test, and 27% at follow-up. However, this should be interpreted with caution in light of the small sample size (e.g., 14% is equivalent to 3 participants). Multiple imputation was employed to handle missing data, whereby 20 imputed datasets were generated and pooled. The primary analysis was a series of intent-to-treat one-way repeated measures analysis of variance (ANOVAs), conducted separately for each primary and secondary outcome measure to examine whether there were any significant changes across time. Significance was set at  $p < .05$  and effect sizes were reported as partial eta-squared (partial  $\eta^2$ ), whereby .01 is considered a ‘small’ effect size, .06 is considered a ‘medium’ effect size, and .14 is considered a ‘large’ effect size (Cohen, 1988). Intent-to-treat analyses with paired-samples *t*-tests were then conducted to examine changes in the primary and secondary outcome measures from baseline to post-test (immediate effects), and from

baseline to 1-month follow-up (either maintained or emerging at follow-up effects). A  $p < .05$  was determined to be statistically significant and 95% confidence intervals were calculated. Finally, Cohen's  $d$  effect sizes were calculated across the three time-points, whereby  $d$  around  $|0.20|$  is considered a 'small' effect size,  $d$  around  $|0.50|$  is a 'medium' effect size, and  $d$  around  $|0.80|$  is a 'large' effect size (Cohen, 1988).

Semantic thematic analysis (Braun & Clarke, 2006) was conducted on the qualitative data relating to the open-ended question about the perceived impact of the intervention. This analytical approach involves the identification of themes within the explicit meanings of the data. The participant responses were read and re-read by the first author, and subsequently coded line by line to identify unique features of the data. These codes were then synthesized into explicit themes. The second and third authors reviewed excerpts, example codes, and confirmed the identified themes. There were no discrepancies between the authors' individual interpretation of the codes or themes.

## Results

### Sample Characteristics

On average, participants were 51.55 years of age and had a body mass index of 24.89. The majority were White (95.5%) and partnered (72.7%), and all were parents. Most were employed (63.6%) and educated beyond secondary school (72.7%). Participants tended to have been diagnosed and finished active treatment at least two years earlier. A diagnosis of Stage II (27.3%) or III (36.4%) cancer was most common, and just over half of participants (59.1%) had undergone mastectomy with reconstruction. With regard to adjuvant therapy, the majority of the sample had received chemotherapy (68.2%), radiotherapy (77.3%), and hormonal therapy (86.4%). Most women were postmenopausal (72.7%). More details regarding demographic and medical characteristics of the sample are provided in Table 4.

There were no significant differences between the groups on demographics and medical characteristics at baseline (all  $ps > .05$ ).

### **Participant Attrition**

Twenty-two women were enrolled into the study, but one withdrew before the first session of the intervention, as she did not feel psychologically prepared to address her body image concerns. Of the remaining participants, one later withdrew due to breast cancer recurrence. The rate of participant retention was therefore high, as 91% of those enrolled completed the intervention, and of these, 85% attended at least six of the seven sessions. Of the 20 participants who finished the intervention, 18 (90%) completed the post-intervention assessment, and 16 (80%) completed the one-month follow-up assessment (see Figure 1).

### **Intervention Acceptability**

Table 2 displays detailed quantitative and qualitative findings concerning participants' perceived acceptability of different aspects of the intervention.

**Quantitative findings.** The two intervention groups were compared on all acceptability domains. The only significant difference was found in relation to the duration of each session ( $p = .03$ ), whereby a greater proportion of participants in Group 1 perceived the individual sessions to be too short in duration. The two groups were subsequently pooled together for all analyses. The majority of participants felt comfortable during the sessions (83.3%), and felt the content was of interest (100%) and relevant (83.3%). Most participants felt the intervention was beneficial (94.4%) and had improved their body image (77.8%). In addition, nearly all participants believed the intervention should be made widely available (94.4%) and would recommend it to others (94.4%).

Participants were generally happy with the intervention format and materials. All participants (100%) considered the group size (9-11) appropriate. The majority felt the number (7; 72.2%) and duration (2 hours; 77.7%) of sessions were appropriate, whilst remaining participants believed these could be longer. More than half (61.1%) felt the volume of between-session homework was adequate, with remaining participants believing it could be reduced. With regard to facilitators, nearly all participants ( $\geq 94.4\%$ ) perceived the clinical psychologist and peer as helpful and skilled.

**Qualitative findings.** The five themes that emerged in relation to the perceived impact of the intervention were ‘commonality of experience,’ ‘altered thinking,’ ‘greater acceptance and appreciation,’ ‘increased self-care and kindness,’ and ‘increased confidence and empowerment.’ See Table 4 for the illustrative quotes.

### **Intervention Outcomes**

Outcomes for the two intervention groups were compared at all three time-points, and no differences were identified ( $p > .05$ ). The data for the two groups were therefore pooled and analysed together. Table 5 displays the means and standard deviations for the primary and secondary outcomes at the three different time points. Table 6 shows the results of the repeated-measures ANOVA analyses and paired *t*-test analyses for the primary and secondary outcomes at baseline, post-test, and 1-month follow-up.

**Body image.** The one-way repeated measures ANOVA analyses revealed a significant effect for time across all outcome measures, apart from body image avoidance and body-related self-care attitude. These significant findings were of large effect size (partial  $\eta^2$ s = .37 - .59). However, medium and large effects (partial  $\eta^2$ s = .10 - .25) were still attained in the two nonsignificant outcomes.

Upon examination of the paired-samples *t*-test analyses, there were significant immediate and maintained improvements in weight and shape concern, body appreciation, and acceptance of age-related appearance changes. There were medium and large effect sizes ( $ds = 0.51 - -0.95$ ) at post-test, with effect sizes increasing in size at follow-up ( $ds = 0.71 - -1.11$ ). Significant improvements of medium effect size ( $ds = 0.65 - 0.72$ ) emerged at follow-up for both body dissatisfaction variables (cancer-specific and general). Whilst the improvements in body image avoidance that emerged at follow-up did not reach statistical significance, they were of small-to-medium effect size ( $d = 0.36$ ). There were no significant improvements in body-related self-care attitude at either post-test or follow-up.

**Secondary outcomes.** The one-way repeated measures ANOVA analyses revealed a significant effect for time of large effect size (partial  $\eta^2s = .26 - .36$ ) in appearance investment, appearance comparisons, body image-related avoidance of intimacy, self-esteem, and distress. Whilst there were no significant changes in internalisation of appearance ideals and health status as indicated by the visual analogue scale (i.e., EQ-5D-5L: Part 2), the effects were large (partial  $\eta^2s = .22$ ). With regard to the other non-significant outcome variables, effect sizes were medium for health status as indicated by the 5-item scale (i.e., EQ-5D-5L: Part 1) and small for negative affect.

The paired-samples *t*-test analyses revealed significant immediate improvements in body image-related avoidance of intimacy, health status as indicated by the visual analogue scale (i.e., EQ-5D-5L: Part 2), and self-esteem, with effect sizes ranging from small to medium ( $ds = 0.41 - -0.55$ ). Improvements were maintained at 1-month follow-up for body image-related avoidance of intimacy and self-esteem ( $ds = 0.48 - -0.79$ ). Whilst no immediate effects were observed for appearance comparisons, appearance investment, and distress, significant improvements emerged in these outcomes at follow-up, with medium effects ( $ds = 0.47 - 0.62$ ). There were no significant changes in internalisation of appearance

ideals, negative affect, and health status as indicated by the 5-item scale (EQ-5D-5L: Part 1) at either post-test or follow-up. However, the changes in internalisation were of small effect size ( $ds = 0.31-0.38$ ).

## Discussion

This pilot study explored the acceptability and feasibility of an evidence-based body image intervention for mid-life women adapted specifically to meet the needs of women who have received treatment for breast cancer. Additionally, it sought to assess the preliminary efficacy of the intervention on the primary outcome of body image and various secondary outcomes.

Results indicate that the intervention was acceptable and feasible among women treated for breast cancer. Indeed, 87% of participants completed the intervention, and reasons for dropping out were unrelated to the intervention itself (e.g., not feeling psychologically prepared, recurrence of cancer). This high rate of engagement is comparable with that of the original intervention among women in midlife (McLean et al., 2011). The high retention rate may relate to the targeted nature of the intervention whereby women who self-identified as having body image concerns were recruited, and its exclusive focus on body image, as opposed to focusing on general well-being or physical activity as has often been the approach for this population. Further, participants overwhelmingly described the intervention as comfortable, interesting, and relevant, and most participants perceived it as beneficial to their body image. Further, nearly all women said they would recommend the intervention and felt it should be widely made available. Qualitative feedback also supported the acceptability of the intervention. For example, participants expressed the benefit of the commonality of experience within the group. This finding is encouraging, given that a cohesive group-based format has been considered necessary for therapeutic factors to take effect (Yalom, 1995).



The intervention format, materials and measures were feasible and acceptable. The majority reported that the intervention and between-session work were optimal in length. Nearly all participants found co-leadership between the clinical psychologist and peer to be suitable. This supports previous research highlighting the value of peer-led programmes for both women with breast cancer (Dunn, Steginga, Occhipinti, & Wilson, 1999) and within body image-specific programmes for young adult women (Becker, Bull, Schaumberg, Cauble, & Franco, 2008). However, the identified benefit of co-leadership between a clinical psychologist and peer in the current study is novel, and such an approach may be worth consideration in other psychosocial interventions. The measures were acceptable and reliable, as reflected by high internal consistencies and minimal missing data.

The preliminary efficacy results are promising. Despite the small sample size, significant improvements were identified at post-test and sustained, or emerged at follow-up, on the majority of the body image measures. The large effect sizes on body image are consistent with those reported in the evaluation of the original intervention among women in midlife (McLean et al., 2011), in a meta-analysis of CBT body image interventions among the general population (Jarry & Ip, 2005), and in a CBT-based intervention among women who have undergone breast cancer treatment (Fadaei et al., 2011). The effects that only emerged at follow-up in the general and cancer-specific measures of body dissatisfaction may indicate that deeply entrenched appearance concerns take longer to change, that some of the intervention content takes time to embed, or that they are explained by earlier changes in other outcomes. The potential mechanisms of change will be examined in a fully-powered randomised controlled trial.

With regard to the primary outcome measures that did not demonstrate significant changes across time, it was surprising that 'Increased self-care and kindness' emerged as a theme in the qualitative findings relating to the perceived impact of the intervention, yet the

related quantitative outcome measure did not change. These contradictory findings may be due to several reasons. Whilst nonsignificant, the changes in this outcome across time were of small effect size, as were the improvements from pre- to post- test. It may be possible that whilst self-care and kindness improved to a small extent immediately following the intervention (as reflected by the quantitative and qualitative findings), this degraded at one-month follow-up (as indicated by the quantitative findings). Unfortunately, as the qualitative feedback was collected at post-test only, we cannot triangulate these data. However, it may also be that the measure was not sensitive enough to capture the nature of self-care reported qualitatively by the participants. Future research might benefit from employing a different measure of self-care attitude. Nonetheless, the evaluation of the original intervention among women in midlife also found that body-related self-care attitude did not change among participants (McLean et al., 2011). It was proposed that beliefs in relation to caring for others before oneself, which are associated with midlife women's roles as mothers and caregivers, may be so deeply entrenched, that the intervention may not be able to shift such attitudes (Currie, 2004). This may also be the case with the present sample of women, all of whom are mothers. Whilst the women may have had good intentions in relation to self-care immediately following the intervention, their deeply entrenched attitude to caring for others before oneself may have prevailed.

With regard to secondary outcomes, the intervention demonstrated a significant maintained improvement of medium effect size in avoidance of intimacy due to body image concerns, a common issue among this group of women (Sheppard & Ely, 2008). It was also encouraging to observe a maintained large improvement on the global construct of self-esteem, which has been previously associated with body image among this group (Fobair et al., 2006). In contrast, a statistically significant improvement of large effect size was identified in distress only at follow-up, mirroring the findings from the original evaluation

among women in midlife (McLean et al., 2011). However, the absence of significant changes in negative affect (as measured by the EORTC-QLQ-C30: Emotion Subscale; Aaronson et al., 1993) was surprising, given the similarity of the two constructs. This incongruence may be due to the lower internal consistency of the EORTC-QLQ-C30: Emotion Subscale, or its more restricted rating scale, in comparison with the Kessler Distress Scale. Further, negative affect relating to cancer may not be eased by a body image intervention alone, whereas non-cancer-specific psychological distress may be more amenable to change. In addition, medium-to-large improvements emerged at follow-up in appearance investment and appearance comparisons, both of which have been associated with body image among breast cancer survivors (Moreira & Canavarro, 2010). Further, whilst the small sample size may have prohibited the detection of significance in the remaining secondary outcomes, changes in all measures were in the anticipated direction, with small effects observed on internalisation of appearance ideals. Overall, findings indicate that a fully-powered efficacy trial of the intervention is warranted.

Whilst the research presents an acceptable and feasible body image intervention for women treated for breast cancer, the pilot study is not without limitations. First, the small sample was ethnically homogenous. Future research evaluating intervention efficacy should attempt to recruit a more diverse sample in relation to ethnicity. Second, having had a different peer deliver each group may have introduced confounding variables, which may have influenced group dynamics. However, it is reassuring that nearly all participants considered their respective peer to be skilled and helpful, and there were no significant differences in relation to perceptions of the peer between the two intervention groups. Third, the pilot nature of the study means that there are methodological limitations to the research (e.g., a lack of control group, small sample size), which will be addressed in a fully-powered randomised controlled trial in future. Indeed, observed improvements may have occurred due

to the passing of time, particularly in the case of improvements that emerged at follow-up. It may also be possible that an equivalent non-CBT-based support group may have attained similar results, particularly in light of the qualitative feedback concerning the perceived benefits of commonality of experience. Further, there was neither a large enough sample or sufficient number of intervention groups to take clustering (i.e., shared group-level variance) into account during statistical analyses. Finally, the follow-up evaluation was restricted to only one-month, whereas the Society of Prevention Research criteria for efficacy recommend a follow-up of six months (Flay et al., 2005). However, one-month follow-up still advances existing evaluative studies among women treated for breast cancer, as the majority have not assessed for maintenance of effects (Lewis-Smith, Diedrichs, Rumsey, & Harcourt, 2018). These limitations highlight the importance of conducting a fully-powered randomised controlled trial to rigorously explore the longer-term impact of the intervention.

Despite these limitations, this study suggests a potential benefit of adapting an existing body image intervention without a condition-specific focus for use with women who have undergone treatment for breast cancer. Indeed, previously evaluated interventions among this group may have indicated limited effectiveness due to having adopted a narrow biomedical disease-focused approach, which fails to consider the interaction between the individual, the disease, and the sociocultural context. In contrast, the present adapted intervention adopts a more holistic approach, by addressing both treatment- and ageing-related appearance concerns, and by targeting broader modifiable sociocultural and psychological influences.

## **Conclusions**

Breast cancer survivors are a growing group and are at risk of experiencing body image concerns associated with treatment-related alterations to appearance. These, in turn,

can impose grave physical and psychological impacts, and consequently highlight the importance of intervention. Nonetheless, existing interventions for this group have lacked rigorous evaluation and have indicated little promise to improve body image. This pilot study therefore provides preliminary support for the acceptability and feasibility of an adapted body image intervention for women treated for breast cancer. Findings indicate the potential for '*Accepting your Body after Cancer*' to promote positive body image and improve proximal outcomes among this group. However, further research is necessary to determine the efficacy of this intervention in comparison to a control group and across a longer period of time. The next step of evaluation is therefore to conduct a randomised controlled trial to explore the longer-term impact of the intervention, with further assessment of cost-effectiveness should the intervention prove efficacious in a fully powered trial.

**Declarations of interest:** None

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Table 1.

*Overview of the Weekly Content of the Intervention Sessions*

<b>Session</b>	<b>Content</b>
1	<ul style="list-style-type: none"> <li>• Introduction to body image</li> <li>• Personal reflection upon the impact of body image concerns</li> <li>• Exploration of personal goals</li> </ul>
2	<ul style="list-style-type: none"> <li>• Introduction to the CBT approach</li> <li>• Physiological symptoms of anxiety</li> <li>• Exploration of body image and self-esteem</li> <li>• Relaxation training</li> </ul>
3	<ul style="list-style-type: none"> <li>• Stopping negative body-related self-talk</li> <li>• Developing alternative, balanced thoughts</li> <li>• Planning a self-care activity schedule</li> <li>• Relationship between body function and movement</li> </ul>
4	<ul style="list-style-type: none"> <li>• Sociocultural pressures for women in midlife</li> <li>• Internalisation of the youthful-thin ideal</li> <li>• Body comparisons – experimental activity</li> <li>• Body nurture with accepting self-talk</li> </ul>
5	<ul style="list-style-type: none"> <li>• Exploration of relationships and intimacy</li> <li>• Managing people’s reactions</li> <li>• Cognitive restructuring process</li> <li>• Physical activity and movement</li> </ul>
6	<ul style="list-style-type: none"> <li>• Identifying core beliefs</li> <li>• Modifying mistaken beliefs</li> <li>• Engaging the senses – mindful eating</li> <li>• Relaxation exercise</li> </ul>
7	<ul style="list-style-type: none"> <li>• Positive body affirmations</li> <li>• Reducing the chances of a setback</li> <li>• Dealing with a setback</li> <li>• Future plans</li> </ul>

Table 2.  
*Quantitative and Qualitative Findings Relating to the Acceptability of the Intervention*

Quantitative findings:		Percentage of participants (%) <i>N</i> = 18			
Intervention acceptability domains					
Perception of intervention	<i>Not at all</i>	<i>Very little</i>	<i>Somewhat</i>	<i>Quite a bit</i>	<i>Very</i>
Comfort	0.0	0.0	16.7	22.2	61.1
Interest	0.0	0.0	0.0	27.8	72.2
Relevance	0.0	5.6	11.1	38.9	44.4
Perceived impact of intervention					
Beneficial	0.0	0.0	5.6	44.4	50.0
Improved body image	0.0	0.0	22.2	44.4	27.8
Should be made available		<i>No</i>	<i>Don't know</i>	<i>Yes</i>	
Would recommend		0.00	5.6	94.4	
Format and materials					
		<i>Too little/short</i>	<i>Just right</i>	<i>Too large/long</i>	
Group size		0.0	100	0.0	
Duration of session †		22.2	77.7	0.0	
Duration of intervention		27.7	72.2	0.0	
Volume of between-session homework		0.0	61.1	38.9	
Facilitators					
	<i>Not at all</i>	<i>Very little</i>	<i>Somewhat</i>	<i>Quite a bit</i>	<i>Very</i>
Clinical Psychologist: Skilled	0.0	0.0	5.6	5.6	88.9
Clinical Psychologist: Helpful	0.0	0.0	0.0	11.1	88.9
Peer: Skilled	0.0	0.0	5.6	44.4	50.0
Peer: Helpful	0.0	0.0	5.6	22.2	72.2
Co-leadership	<i>Yes</i>				
	94.4				

† A significant difference was identified between the two intervention groups ( $p < .05$ ), whereby members of Group 1 felt the length of each individual session was too short.

Qualitative findings: Themes and illustrative quotes regarding the perceived impact of the intervention

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Commonality of experience

*It helped me to know that there are women in a similar situation as myself*

*It was reassuring to be part of a group and to become aware of how we all shared similar feelings and perceptions about our bodies*

*Sharing anxieties enables you to feel confident to speak out and become enabled to act upon changing those thoughts and fears*

Altered thinking

*The different stages within the programme enabled me to reflect upon and change my negative thinking about myself and my body.*

*Helped me to rethink my situation and to start to feel better about myself.*

*It has changed my life and my thinking. I never realised how much I've tortured myself psychologically over the past 7 years. It really has thrown me a lifeline.*

Greater acceptance and appreciation

*I can now stand in front of a full-length mirror naked don't really like the scars but have accepted that it is the new me.*

*It's made me appreciate my body for more than just looks.*

*Can now learn to live with my scars and be more positive and learning not to blame myself for getting the cancer.*

Increased self-care and kindness

*I can concentrate on looking after myself and being kind to myself.*

*How to move forward, not to feel guilty about 'me' time and value of self-care.*

*It's made me kinder on myself.*

Increased confidence and empowerment

*I feel more enlightened/empowered.*

*It has made me look more at my talents and what I can achieve. It has made me concentrate more on myself and my happiness.*

*It's increased my confidence.*

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Table 3.

*Outcome Measures and Internal Consistencies (Cronbach's alphas) of the Sample at the Three Assessment Points*

Outcome	Measure	$\alpha$
<i>Primary Outcome: Body Image</i>		
Body Dissatisfaction (cancer-specific)	Body Image Scale (Hopwood, Fletcher, Lee, & Al Ghazal, 2001): 10 items (e.g., "Have you felt less physically attractive as a result of your treatment?"); 4-point Likert-type scale; scale total. <i>Degree of body dissatisfaction following treatment for cancer; assesses feelings of attractiveness, femininity, and self-consciousness.</i>	.86 - .92
Body Dissatisfaction (general)	MBSRQ: Appearance Evaluation Subscale (Cash, 2000): 7 items (e.g., "I like my looks just the way they are"); 5-point Likert-type scale; scale mean. <i>Degree of dissatisfaction with appearance as a whole; assesses perceptions of attractiveness, and satisfaction both wearing and not wearing clothes.</i>	.72 - .79
Weight and Shape Concern	EDE-Q: Weight and Shape Concern Subscales (Fairburn & Beglin, 1994): 12 items (e.g., "Have you felt fat?"); 7-point Likert-type scale; scale mean. <i>Frequency of anxiety and dissatisfaction with weight and shape.</i>	.86 - .91
Body Image Avoidance	BIAQ: Social Activities and Clothing Subscales (Rosen, Srebnik, Saltzberg, & Wendt, 1991): 13 items (e.g., "I do not go out socially if the people I am with are more attractive than me", "I avoid going clothes shopping"); 6-point Likert-type scale; scale mean. <i>Degree of avoidance of social activities and wearing certain clothes.</i>	.84 - .89
Body Appreciation	Body Appreciation Scale (Avalos, Tylka, & Wood-Barcalow, 2005): 13 items (e.g., "Despite its flaws, I accept my body for what it is"); 5-point Likert-type scale; scale mean. <i>Degree of appreciation and acceptance of the body irrespective of its physical appearance and imperfections.</i>	.76 - .90

Acceptance of Ageing-Related Appearance Changes	PARCA: Cognitive Reappraisal Subscale (McLean, Paxton, & Wertheim, 2010): 11 items (e.g., “I try to adjust my expectations rather than think that my body should not change with age”); 5-point Likert-type scale; scale mean. <i>Degree to which one adapts the expectations of their body or accepts the aging-related changes to their appearance.</i>	.73 - .92
Body-Related Self-Care Attitude	Body-Related Self-Care Scale: Attitude Subscale (McLean et al., 2010): 9 items (e.g., “Take time to relax”); 5-point Likert-type scale; scale mean. <i>Frequency of engagement in self-caring attitude and behaviours.</i>	.80 - .93
<i>Secondary Outcomes</i>		
Appearance Investment	Self-Objectification Questionnaire (Noll & Fredrickson, 1998): Appearance Subscale total (i.e., sum of the ranks of only the appearance-based attributes; 5 items: e.g., physical attractiveness, sex appeal). <i>Degree of importance of appearance.</i>	$r =$ .69 - 1.00
Internalisation of Appearance Ideals	SATAQ-3: Internalisation (general) Subscale (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004): 9 items (e.g., “I would like my body to look like models who appear in magazines”); 5-point Likert-type scale; scale total. <i>Degree of endorsement of messages from the media which promote unrealistic beauty ideals and striving towards these ideals.</i>	.77 - .85
Appearance Comparisons	PACS-R (Schaefer & Thompson, 2014): 11 items (e.g., “When I meet a new person (same sex), I compare my body size to his/her body size”); 5-point Likert-type scale; scale mean. <i>Frequency of comparisons of one’s appearance with that of others.</i>	.95 - .97
Body Image-Related Avoidance of Intimacy	RFH and CAR Intimacy Scale: Short Form (Clarke, Moss, & Jenkinson, 2008): 8 items (e.g., “I prefer sex with the light off because it means my body cannot be seen”); 5-point Likert-type scale; scale mean.	.82 - .83

	<i>Degree of avoidance of intimate situations due to body image concerns.</i>	
Self-Esteem	The Single-Item Self-Esteem Scale (Robins, Hendin, & Trzesniewski, 2001): 1 item: “I have high self-esteem”; 7-point Likert-type scale.	N/A
Distress	Kessler Psychological Distress Scale (Kessler et al., 2002): 10 items (e.g., “How often did you feel nervous?”, “How often did you feel hopeless?”); 5-point Likert-type scale; scale total.	.77 - .79
	<i>Degree of psychological distress.</i>	
Negative Affect (cancer-specific)	EORTC-QLQ-C30: Emotion Subscale (Aaronson et al., 1993): 4 items (e.g., “Did you feel tense?”); 4-point Likert-type scale; scale mean.	.60 - .90 †
	<i>Frequency of distress over the previous week.</i>	
Health Status	EQ-5D-5L: Part 1 (Herdman et al., 2011): 5 items (e.g., mobility, self-care, usual activities); 4-point Likert-type scale converted to single index value.	.44 - .76 ‡ N/A
	<i>Health status as indicated by any problems in various domains.</i>	
	EQ-5D-5L: Part 2 (Herdman et al., 2011): Visual analogue scale (VAS) ranging from the ‘worst’ to ‘best’ health one can imagine.	
	<i>Indicated by the point on the scale that represents one’s current state of health.</i>	

† Mean inter-item correlation = 0.29 – 0.72

‡ Mean inter-item correlation = 0.29 – 0.42

*Note.* MBSRQ = Multidimensional Body-Self Relations Questionnaire; EDE-Q = Eating Disorder Examination Questionnaire; BIAQ = Body Image Avoidance Questionnaire; SATAQ-3 = Sociocultural Attitudes towards Appearance Scale-3; PACS-R = Physical Appearance Comparison Scale-Revised; PARCA = Perception of Aging-Related Changes to Appearance Scale; RFH and CAR = Royal Free Hospital and Centre for Appearance Research; EORTC-QLQ-C30 = European Organisation for Research and Treatment of Cancer - Quality of Life Questionnaire; EQ-5D-5L = European Quality of Life-5 Dimensions 5 Levels

Table 4.

*Demographic and Medical Characteristics of the Sample (N = 22)*

Characteristic	<i>M</i>	<i>SD</i>
Age at baseline (years)	51.55	6.81
BMI	24.89	3.78
Months since diagnosis	39.18	35.75
Months since treatment	31.48	34.65
	<i>N</i>	%
Ethnicity		
White	21	95.45
Black/African/Caribbean/Black British	1	4.55
Relationship Status		
Single	3	13.64
Married/In a relationship	16	72.73
Divorced/Separated	2	9.09
Widowed	1	4.55
Parenthood		
At least one child	22	100
Employment status		
Employed (full or part-time)	14	63.64
Unemployed or Homemaker	4	18.18
Retired	2	9.09
Prolonged sick leave	3	13.64
Education		
GCSE/O-Level or equivalent	4	18.18
A-Level or equivalent	1	4.55
Higher education certificate or diploma	7	31.81
Undergraduate/Postgraduate degree	9	40.91
Prefer not to say	1	4.55
Stage of cancer		
0	3	13.64
I	1	4.55
II	6	27.27
III	8	36.36
IV	1	4.55
Surgical treatment		

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Lumpectomy	5	22.73
Mastectomy without reconstruction	4	18.18
Mastectomy with reconstruction	13	59.09
Adjuvant treatment		
Chemotherapy	15	68.18
Radiotherapy	17	77.27
Hormonal therapy	19	86.36
Menopausal status		
Postmenopausal	16	72.73

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Table 5.

*Summary of Means and Standard Deviations at Different Time Points*

Outcome	T1 (Baseline) <i>M (SD)</i>	T2 (Post-test) <i>M (SD)</i>	T3 (Follow-up) <i>M (SD)</i>
<i>Primary Outcome: Body Image</i>			
Body Dissatisfaction (CS)	29.50 (7.92)	26.02 (6.49)	24.28 (6.40)
Body Dissatisfaction (G)	3.56 (0.68)	3.44 (0.70)	3.14 (0.61)
Weight and Shape Concern	4.50 (1.38)	3.82 (1.28)	3.60 (1.15)
Body Image Avoidance	2.54 (0.79)	2.61 (0.84)	2.25 (0.84)
Body Appreciation	2.91 (0.45)	3.36 (0.62)	3.40 (0.51)
Acceptance of Ageing-Related Appearance Changes	3.32 (0.71)	3.88 (0.44)	4.03 (0.56)
Body-Related Self-Care Attitude	2.83 (0.56)	3.01 (0.74)	2.97 (0.57)
<i>Secondary Outcomes</i>			
Appearance Investment	24.57 (6.83)	22.95 (5.07)	21.12 (3.96)
Internalisation	2.27 (0.69)	2.06 (0.74)	2.06 (0.65)
Appearance Comparisons	2.88 (1.00)	2.72 (0.91)	2.42 (0.97)
Avoidance of Intimacy	3.36 (0.97)	2.96 (0.98)	2.90 (0.93)
Self-Esteem	2.95 (1.29)	3.66 (1.54)	3.82 (0.88)
Distress	23.22 (5.57)	22.19 (5.95)	20.44 (4.21)
Negative Affect	2.28 (0.66)	2.20 (0.72)	2.20 (0.46)
Health Status: Part 1	0.77 (0.14)	0.79 (0.15)	0.79 (0.15)
Health Status: Part 2	71.95 (18.64)	80.44 (11.04)	74.01 (21.27)

*Note.* CS = Cancer-specific; G = General.

Table 6.

*Summary of Repeated-Measures Analysis of Variance Results, Paired Samples t-test Results and Effect Sizes at Different Time Points*

Outcome	<i>F</i> (2, 20)	Partial $\eta^2$	T1-T2			T1-T3		
			<i>t</i>	95% CI	<i>d</i>	<i>t</i>	95% CI	<i>d</i>
Body Dissatisfaction (CS)	7.24***	.42	1.91	-0.09 – 7.05	0.48	3.61***	-0.98 – 4.46	0.72
Body Dissatisfaction (G)	7.34***	.40	0.66	-0.23 – 0.46	0.17	2.84**	0.13 – 0.71	0.65
Weight and Shape Concern	5.98**	.37	2.15*	0.06 – 1.29	0.51	3.05***	0.32 – 1.51	0.71
Body Image Avoidance	3.48	.25	-0.42	-0.43 – 0.28	-0.09	1.41	-0.11 – 0.69	0.36
Body Appreciation	15.36***	.59	-3.33***	-0.70 – -0.18	-0.83	-1.16***	-0.72 – -0.26	-1.01
Acceptance of Ageing-Related Appearance Changes	12.87***	.55	-3.95***	-0.84 – -0.28	-0.95	-4.14***	-1.05 – -0.37	-1.11
Body-Related Self-Care Attitude	1.21	.10	-1.02	-0.51 – 0.16	-0.27	-0.86	-0.46 – 0.18	-.025
<i>Secondary Outcomes</i>								
Appearance Investment	4.17*	.30	1.46	-0.56 – 3.78	0.27	2.50*	0.72 – 6.04	0.62
Internalisation	2.87	.22	1.32	-0.10 – 0.52	0.38	1.52	-0.06 – 0.48	0.31
Appearance Comparisons	3.66*	.26	0.80	-2.06 – 4.65	0.17	2.10*	0.75 – 8.50	0.47
Avoidance of Intimacy	5.89**	.36	2.38*	0.07 – 0.73	0.41	2.40*	0.08 – 0.83	0.48
Self-Esteem	4.93*	.33	-2.07*	-1.38 – -0.04	-0.50	-2.82**	-1.46 – -0.26	-0.79
Distress	4.54*	.31	0.88	-1.68 – 4.40	0.18	2.48*	0.65 – 5.55	0.56
Negative Affect	0.41	.04	0.42	-0.31 – 0.48	0.12	0.49	-0.23 – 0.38	0.07
Health Status: Part 1	1.25	.06	-0.59	-0.10 – 0.05	-0.14	-0.59	-0.10 – 0.05	-0.15
Health Status: Part 2	2.83	.22	-2.27*	-15.76 – -1.14	-0.57	-0.378	-12.75 – 8.63	-0.10

Two-tailed; \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .005$ . *Note.* CS = Cancer-specific; G = General; CI = Confidence intervals.

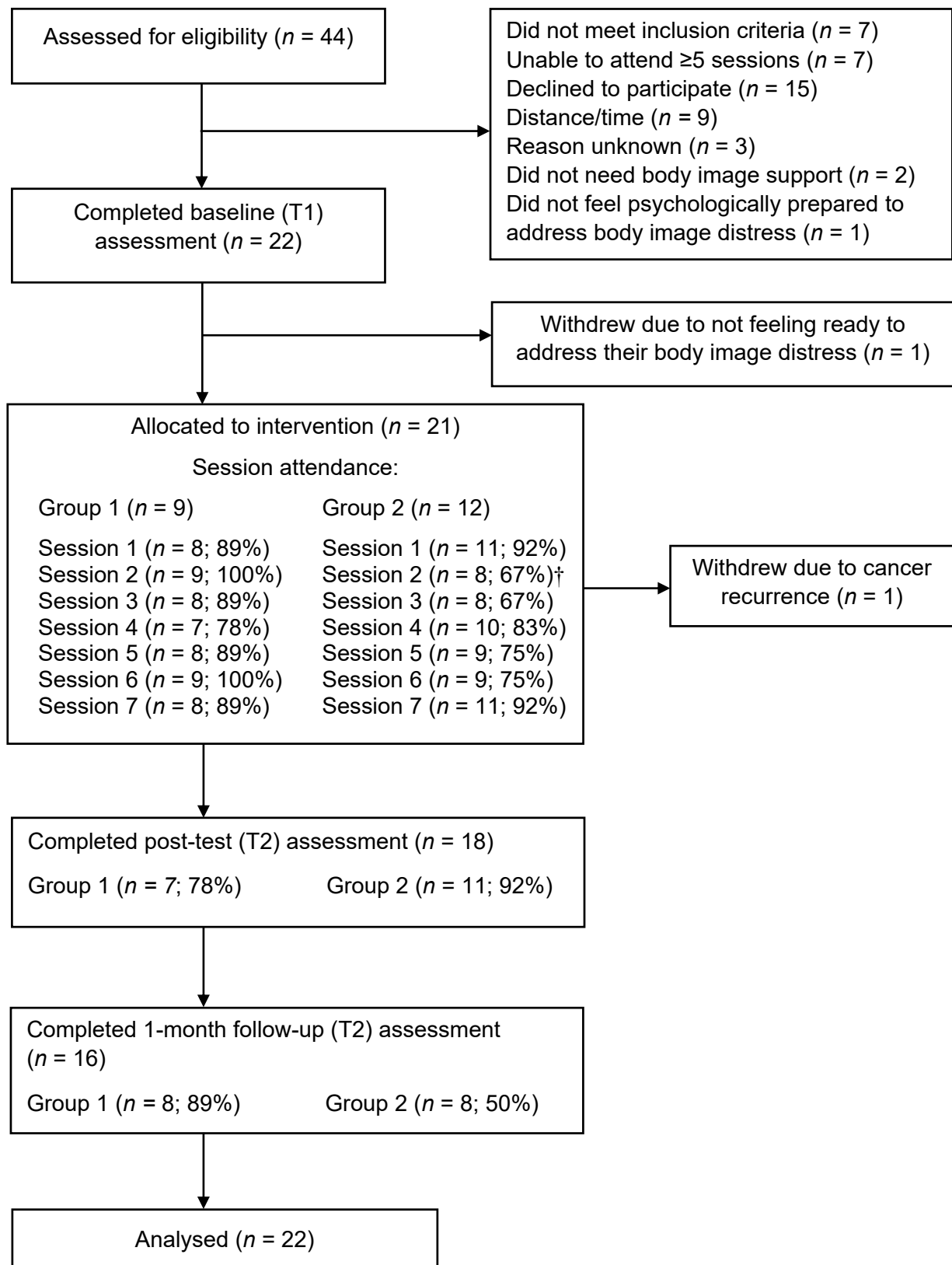


Figure 1. Flow of study participants through the intervention and outcome assessments.

† Participant withdrew following Session 2 due to cancer recurrence