



**BODY IMAGE IN MIDLIFE:
DEVELOPING A PSYCHOSOCIAL INTERVENTION
FOR WOMEN WHO HAVE RECEIVED TREATMENT
FOR BREAST CANCER**

**Volume I of II
Thesis**

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Abstract

Survival rates for breast cancer have improved over the recent decades, and increasing numbers of women in midlife are coming to terms with the consequences of the disease and its treatment. Among the various side-effects associated with treatment are appearance and bodily alterations, which can elicit body image concerns and subsequently impose long-lasting adverse impacts upon psychological and physical health. Governments, health services, and support organisations have stressed the importance of the development, evaluation, and dissemination of psychosocial interventions that provide support for women adjusting to the residual consequences of the diagnosis and treatment of cancer, including body image distress. The overall aim of this thesis was to develop and assess the acceptability of an evidence-informed psychosocial intervention targeting body image among women in midlife who have undergone treatment for breast cancer.

The thesis adopted a mixed-method pragmatic approach, and followed the Medical Research Council's framework for the development and evaluation of complex interventions (Craig et al., 2008). First, a systematic review of existing body image interventions for women in midlife, including those treated for breast cancer, was conducted to assess the current status of the literature and identify existing effective interventions. Interventions targeting women in midlife ($n=11$) were found to have longer-lasting and larger effects on body image at post-test and were evaluated in studies of greater methodological rigour, compared with interventions targeting women who had undergone treatment for breast cancer ($n=22$). Second, an online survey tested and compared an established sociocultural model of body image (Tripartite Influence Model; Thompson, Heinberg, Altabe, & Tantleff-Dunn, 1999) between women in midlife who were treated ($n=169$), and not treated ($n=323$), for breast cancer, in order to assess potential targets for body image interventions and the applicability of research and interventions among women in midlife for use with women treated for breast cancer. This study revealed a similar pattern of risk factors among both groups, whereby sociocultural and psychological factors proposed within the model influenced body image. Next, an integration of findings from the systematic review and online survey informed the adaptation of an existing evidence-based and rigorously evaluated body image intervention for women in midlife (McLean, Paxton, & Wertheim, 2011) for use among women treated for breast cancer. Finally, the adapted intervention was evaluated

for its acceptability through focus groups and interviews with women who had undergone treatment for breast cancer ($n=22$) and health professionals involved in their psychosocial care ($n=5$). The adapted intervention was found to be acceptable to both participant groups, pending some further amendments.

In addition to informing the adaptation of an existing body image intervention for use with women who have undergone treatment for breast cancer, the findings also provide important implications for practice, theory, and research. The present research has identified previously unexplored sociocultural and psychological influences on the body image of women who have undergone treatment for breast cancer and reveals the value of a theoretical model developed within the wider body image field for a group with an altered appearance.

Setting the Scene

The Centre for Appearance Research

The research comprising this thesis was conducted at the Centre for Appearance Research (CAR), at the University of the West of England, Bristol, United Kingdom. CAR aims to “make a real difference to the lives of the millions of people worldwide with appearance-related concerns” (Centre for Appearance Research, 2016). The Centre strives to accomplish this by conducting psychological, interdisciplinary, and applied research in order to understand the extent, causes, and consequences of appearance concerns. This knowledge is then used to inform the development of evidence-based strategies to improve the body image concerns of individuals and communities, and to change social norms. The research conducted at CAR focusses on groups with an altered appearance or “visible difference” (e.g. individuals with congenital appearance-altering conditions, such as cleft lip and palate, or acquired appearance alterations, such as those caused by cancer treatment) and “general population” groups without specific conditions (e.g. school-aged children, adults seeking cosmetic surgery).

Language adopted in this Thesis

The terminology employed by researchers and clinicians within the area of ‘visible difference’ can often adopt a negative focus (e.g. ‘abnormal’, ‘deformed’, ‘disfigurement’). This is probably due to such terms having been derived from the biomedical treatment model, and its pathology-focussed approach (Rumsey & Harcourt, 2005). It is acknowledged that the term “disfigurement” may be universally understood, however, such adverse language may not be helpful for affected individuals (Eiserman, 2001). In view of this, the thesis sought to employ and promote the use of vocabulary that is more positive and inclusive, including ‘altered appearance’ and ‘visible difference’ (Rumsey & Harcourt, 2005). Further, while this thesis will refer to groups with an altered appearance or visible difference, prior research and practical experience within CAR suggests that women who have undergone treatment for breast cancer are more likely to identify themselves as having an altered appearance than a visible difference. The thesis therefore refers to this group as having an altered appearance.

This thesis refers to research conducted with women in midlife who have undergone treatment for breast cancer, and women in midlife who have not undergone treatment for

breast cancer. It is recognised that given the prevalence of breast cancer, it would be unrealistic to assume that the research conducted with the latter did not in fact include women who had received treatment for breast cancer. However, given that this research was aimed at women in the general population who were not recruited on the basis of having a specific health condition, these researchers were often interested in exploring body image in relation to aspects of appearance common to the wider population and not specific to particular conditions, including weight, shape, and ageing. Therefore, while research conducted with these two groups of women is considered separately in the thesis, there may be some overlap in the samples, and it is important to keep this in mind. Moving on to language, for ease of reference and brevity within this thesis, research conducted with women in midlife who have undergone treatment for breast cancer will be referred to as “women treated for breast cancer”. In contrast, women in midlife in the general population will be referred to as “women not treated for breast cancer”.

Overview of the Thesis

The primary aim of this thesis was to address the pleas of governments, health providers, and support organisations by developing and assessing the acceptability of an evidence-informed psychosocial body image intervention targeting women treated for breast cancer.

Chapter 1 provides a literature review concerning the nature of, and influences on, body image concerns among women in midlife treated for breast cancer, and women in midlife not treated for breast cancer. This provides the rationale for conducting the present research. Chapter 2 presents the methodology and frameworks adopted to develop the intervention in the current thesis. Four chapters outlining novel studies follow this. Chapter 3 presents a systematic review of existing body image interventions targeting women in midlife, including interventions that have been trialled with women treated for breast cancer, to assess the current status of the literature and identify existing effective interventions. Chapter 4 presents a quantitative online survey administered to women in midlife treated, or not treated, for breast cancer, to understand psychosocial influences on their body image and their preferences for interventions. It also aims to determine whether body image influences are different or similar for these two groups by testing an established sociocultural model. This helps to further establish whether the targets for body image interventions should be similar among women treated, and not treated, for

breast cancer, and whether insights from the broader literature among women in midlife might also be applied to women treated for breast cancer specifically. Chapter 5 then outlines the decision-making process for identifying and adapting an existing evidence-based body image intervention previously used among women in midlife for use among women treated for breast cancer, based upon the findings of the systematic review and online survey presented in Chapters 3 and 4. Chapter 6 presents a focus group and interview study that assesses the acceptability of the adapted intervention among a group of women treated for breast cancer and health professionals working in this field, and their recommendations for improving the intervention further. Finally, Chapter 7 summarises the findings across the thesis, and discusses their implications for practice, theory and research. This final chapter also reflects upon the methodology adopted in the thesis, proposes next steps for the development and evaluation of the intervention presented in this thesis, and outlines recommendations for future research in the field of body image more broadly.

Chapter 1: The need for body image interventions for women treated for breast cancer

1.1 Introduction

In the United Kingdom (UK), breast cancer is diagnosed among 12.5% of women across the lifespan (Cancer Research UK, 2015). Onset is predominantly in midlife, which is commonly defined as the period between 35 and 55 years of age (Hockey & James, 2003; Mangweth-Matzek et al., 2014). Breast cancer is responsible for the highest number of cancer-related deaths among women worldwide (Ferlay et al., 2015). However, medical advances have led to an increase in survival rates and growing numbers of women are living with the consequences of the disease and its treatment (Cancer Research UK, 2015). One major consequence of treatment is appearance and bodily changes. These alterations can produce enduring adverse effects on women's body image and their psychological and physical health (Begovic-Juhant, Chmielewski, Iwuagwu, & Chapman, 2012; Cousson-Gelie, Bruchon-Schweitzer, Dilhuydy, & Jutand, 2007; Helms, O'Hea, & Corso, 2008). Consequently, there have been calls from governments, health services, and organisations to develop, evaluate, and disseminate psychosocial interventions to address the residual consequences of the disease and treatment, including body image concerns (e.g. Department of Health, Macmillan Cancer Support, & Improvement, 2010).

This chapter provides a review of the research literature that informed the rationale for this thesis.

1.2 The biology, aetiology, and epidemiology of breast cancer

Breast cancer is the most commonly diagnosed cancer among women around the world, with 1.67 million new cases estimated in 2012 (Ferlay et al., 2015), and 53,700 new diagnoses specifically in the UK in 2013 (Cancer Research UK, 2015).

Breast cancer occurs when malignant (cancer) cells form in the breast tissue. The most common form of breast cancer is ductal carcinoma, which originates in the cells of the breast ducts (Cancer Research UK, 2016). This may be 'in situ' or 'invasive'. Abnormal cells are confined to the lining of the breast ducts in the former case, but have spread to

adjacent tissue in the latter. A less common form of breast cancer is lobular carcinoma, which also can be ‘in situ’ or ‘invasive’ in relation to its origin in the lobules of the breast. Finally, a rare type of breast cancer is inflammatory breast cancer, whereby diseased cells block the lymph vessels in the skin of the breast. Cancer stage is determined by the size of the tumour (the volume of the cancer cells), and whether the cancer cells have metastasised, thus spreading into the lymph nodes or other parts of the body. The stage of breast cancer can determine the course of treatment, and is expressed as a number on a scale between 0 and IV (Breastcancer.org, 2016a). Stage 0 relates to non-invasive cancers located within the breast and stage IV relates to invasive cancers that have metastasised.

While the exact causes of breast cancer are unknown, several hereditary, behavioural, and environmental risk factors have been associated with the disease (American Cancer Society, 2016; Breastcancer.org, 2016b). Hereditary risk factors include inherited gene mutation in the BRCA1 and BRCA2 genes, and a family history of breast cancer. Additionally, extensive exposure to oestrogen and progesterone across the lifespan has been associated with increased risk. Lifestyle-behavioural risk factors include alcohol use and obesity, while environmental risk factors under current investigation include compounds with oestrogen-like properties and second hand cigarette smoke.

The risk of developing the disease increases with age, with the majority of women being diagnosed in midlife. Indeed, while breast cancer is rare below the age of 35 years, the incidence rate rises steeply from thereon, with 80% of diagnosed cases being among women above the age of 50 years (Cancer Research UK, 2015). Breast cancer is the most common cause of cancer death for women (Ferlay et al., 2015). Nevertheless, medical advancements have contributed towards decreased rates of mortality over the last 40 years (Cancer Research UK, 2015). Survival rates today are high, with 5-year American and European survival rates of between 81.8% and 91% (American Cancer Society, 2015; De Angelis et al., 2014; Office of National Statistics, 2015).

The promising prognosis for breast cancer means that the number of women living with the residual consequences of the disease and its treatment is growing. Diagnosis and treatment is often a stressful time and is associated with increased levels of depression and anxiety (Burgess et al., 2005; Reich, Lesur, & Perdrizet-Chevallier, 2008). Further, women can continue to experience prolonged psychological distress and lower quality of

life following successful treatment (Alfano & Rowland, 2006; Deshields, Tibbs, Fan, & Taylor, 2006). Indeed, the regularity of appointments with health professionals decreases, and women can experience feelings of worry, mixed emotions, and abandonment (Lethborg, Kissane, Burns, & Snyder, 2000; Thewes, Butow, Girgis, & Pendlebury, 2004). The need to re-integrate back into everyday life can heighten distress, which can be exacerbated by the expectations of others to return to normality (Knobf, 2007). This distress can be heightened by concerns relating to the long-lasting side-effects of treatment, many of which include appearance alterations, sensory changes, and functional impairment (Przezdziecki et al., 2013). The importance of addressing the residual psychosocial consequences of cancer diagnosis and treatment has been recognised internationally by governments, health policy and services, and community organisations (see 1.10).

This research stresses the importance of developing and disseminating psychosocial interventions beyond the biomedical treatment period for breast cancer, in order to help women deal with lingering concerns. One area for support is helping women to cope with the wide range of appearance and bodily changes resulting from treatment, which are described below. Breast Cancer Care, the UK's largest breast cancer charity, has highlighted the problematic absence of psychosocial support of this nature (Breast Cancer Care, 2014). This thesis addresses this gap by developing an evidence-informed psychosocial intervention targeting body image among women treated for breast cancer.

1.3 Appearance and bodily changes resulting from breast cancer treatment

Treatment for breast cancer typically encompasses multiple methods over a prolonged period, each associated with different side effects. Surgery is usually the first treatment received (Breast Cancer Care, 2016). It aims to physically remove the cancer, with the amount of tissue removed and consequently the type of surgery depending on the size and location of the cancer, in addition to the patient's wishes. Breast-conserving surgery (also known as 'lumpectomy' or 'wide local excision') attempts to retain as much of the breast as possible by removing the tumour within a narrow margin of the healthy breast tissue around it. In contrast, mastectomy removes all the breast tissue, often including both the skin and nipple, and can be unilateral (one breast) or bilateral (both breasts). Following mastectomy, women can elect to undergo breast reconstruction to make a new breast shape, either at the same time (immediate reconstruction) or later (delayed

reconstruction). The new breast shape can be built using either a breast implant, tissue from another part of the patient's body, or a combination of the two.

Mastectomy is a common procedure, as indicated by the National Mastectomy and Breast Reconstruction Audit, which reported operative data on 18,216 women in England over a 15-month data collection period beginning in 2008 (Jeevan et al., 2014). Within this sample, 90% had undergone mastectomy, within which 21% had elected immediate reconstruction. The remaining 10% of the original sample had undergone delayed breast reconstruction. The side effects of lumpectomy or mastectomy can include breast asymmetry, scarring, sensation loss, the need for a breast prosthesis or breast reconstruction, lymphedema (abnormal swelling of fluid beneath the skin, commonly in the arm or leg), and compromised limb mobility (Collins et al., 2011). Moreover, reconstruction using one's own tissue can lead to additional scarring on the donor site of the body and a differing shade or texture of the donor tissue compared with that of the breast (Breast Cancer Care, 2016).

Adjuvant therapies (chemotherapy, radiotherapy, hormone therapy) usually take place following surgery (Breast Cancer Care, 2016). Chemotherapy uses anti-cancer (cytotoxic) medication to destroy cancer cells, and is usually delivered to the blood via a drip into the veins. Side effects are often appearance-related, including hair loss, weight fluctuation, and nail discolouration (Bines, Oleske, & Cobleigh, 1996; Nozawa et al., 2013). Radiotherapy uses doses of radiation to destroy cancer cells that may be left behind following surgery and/or chemotherapy. Side effects can include skin discolouration, dermatitis, fatigue, and lymphedema (Lundstedt et al., 2012). Hormone therapy is usually taken for up to five years to reduce the risk of recurrence. The most commonly used hormone drugs are tamoxifen and aromatase inhibitors (Breast Cancer Care, 2016). Side effects can include weight gain, hair thinning, joint pains, tiredness, and the exacerbation of menopausal symptoms (Wood, Shapiro, & Recht, 2001).

Given the extensive effects of treatment on the body, in relation to appearance, sensation, and function, it is not surprising that this can impose adverse, widespread and enduring impacts on body image and other psychosocial domains (e.g. Falk Dahl, Reinertsen, Nesvold, Fosså, & Dahl, 2010), as discussed in detail below.

1.4 The impact of breast cancer treatment on women's body image

There is ongoing debate concerning the definition of body image. This is reflected in the use of more than 16 different terms to operationalise it (e.g. 'body satisfaction', 'appearance evaluation', 'body esteem', 'body schema'; Thompson et al., 1999). It is argued that body image is a multidimensional construct that cannot be captured through one term alone (Cash & Pruzinsky, 2002). Despite these debates, the consensus among researchers is that it has various components, including cognition, affect, perception, and behaviour (Thompson et al., 1999). Further, it can be considered both in terms of evaluation (e.g. levels of satisfaction with the body and its appearance) and investment (e.g. the extent to which appearance is an important part of a person's life and daily activities). Most literature, however, has tended to focus on the evaluative aspect (Thompson, 2004). Body image is also concerned with bodily function and integrity, but most researchers tend to adopt a narrow focus on the aesthetic or appearance component. Given the multidimensional nature of body image, this thesis adopted a multicomponent definition whereby body image was defined as "a person's perceptions, thoughts and feelings about his or her body" (Grogan, 2008, p. 3).

The incidence of body image distress among women treated for breast cancer is significant, as is demonstrated by existing research. One cross-sectional study found that 77% of this group experienced some degree of body image concern (Begovic-Juhant et al., 2012). Specifically, 58% of the sample felt less attractive, 54% felt dissatisfied with their body, 52% felt less feminine, and 39% found it challenging to look at their naked body. Additional research among more than 500 women who had completed treatment found that 55% of the sample felt embarrassed about their body either some or most of the time (Fobair et al., 2006). Given that breast cancer treatment can induce appearance and functional changes among aspects of appearance considered central to women's attractiveness and feminine identity, the high prevalence of body image concerns among these women is perhaps unsurprising.

Within Western societies the breast is often seen as central to women's attractiveness, desirability, and sexuality (Baucom, Porter, Kirby, Gremore, & Keefe, 2005). It is considered to signify femininity, motherhood, and nurturance (Khan et al., 2000). Aside from genitalia, breasts are the primary part of the body distinguishing women from men. Consequently, the effects of lumpectomy, mastectomy, and breast reconstruction can be

profoundly damaging to women's body image, with some women reporting feelings of mutilation (Helms et al., 2008; Manderson & Stirling, 2007). Surgically induced appearance changes can threaten feelings of femininity and sense of identity, while also disrupting intimate relationships (Fobair et al., 2006; Sheppard & Ely, 2008). This is illustrated by a qualitative study whereby some women reported feeling like "a different person", "less womanly", and "an inadequate partner" (Ussher, Perz, & Gilbert, 2012).

Across studies, findings are generally inconclusive regarding whether body image varies according to type of surgery received (e.g. Collins et al., 2011; Schover et al., 1995), possibly due to inconsistencies concerning the measures employed, discrepancies in other forms of treatment, and the amount of time elapsed since treatment. Nevertheless, the majority of studies indicate more favourable body image among women who undergo lumpectomy as distinct from mastectomy (Arndt, Stegmaier, Ziegler, & Brenner, 2008; Engel, Kerr, Schlesinger-Raab, Sauer, & Hölzel, 2004). This may be because mastectomy is more invasive, thus evoking greater changes in appearance and sensation. Women with mastectomy are more likely to avoid looking at themselves in the mirror, wearing revealing clothes, and going to the beach, compared with those who have undergone lumpectomy (Monteiro-Grillo, Marques-Vidal, and Jorge, 2005).

Research studies comparing psychosocial outcomes for women who decide to undergo mastectomy alone with those for women who also opt for immediate or delayed breast reconstruction are also conflicting. Retrospectively designed research indicates lower levels of body dissatisfaction, depression, and anxiety among both women who undergo breast reconstruction as distinct from mastectomy alone (Al-Ghazal, Fallowfield, & Blamey, 2000) and among women who undergo immediate reconstruction in preference to delayed reconstruction (Al-Ghazal, Sully, Fallowfield, & Blamey, 2000). However, a longitudinal study among more than 100 women failed to identify differences in body image between these surgical groups one year post-operatively (Harcourt et al., 2003). Further, using a prosthesis to regain breast symmetry can cause distress, as it can be perceived as a foreign object (Maguire, 1989) and present challenges for non-White women attempting to acquire one that matches their skin tone (Wilmoth & Sanders, 2001).

Hair also possesses strong symbolic value across different cultures, conveying information about gender, age, beauty, and religious associations (Freedman, 1994).

Research indicates that hair loss from chemotherapy treatment for breast cancer can impose detrimental and long-lasting effects on body image, sexuality, and identity, which can persist through hair regrowth (Batchelor, 2001; Lemieux, Maunsell, & Provencher, 2008; Münstedt, Manthey, Sachsse, & Vahrson, 1997). Indeed, the unanticipated distress associated with losing one's hair was highlighted in a qualitative study in which a woman reported: "You think you are [prepared] – but when it happens it's pretty traumatic" (Boehmke & Dickerson, 2005). An additional study found some women who described losing their hair as "worse than losing a breast" (Browall, Gaston-Johansson, & Danielson, 2006). Further, the loss of body hair can also cause distress, particularly the loss of eyebrows and eyelashes (Nozawa et al., 2013) and the loss of nasal hairs, which can cause greater dripping from the nose (Boehmke & Dickerson, 2005).

Other side effects of breast cancer treatment can also affect body image. Weight fluctuations relating to chemotherapy and hormone therapy have been associated with body image distress among both women undergoing treatment and survivors in cross-sectional research (Raggio, Butryn, Arigo, Mikorski, & Palmer, 2014; Rosenberg et al., 2013). Menopausal symptoms resulting from chemotherapy and hormone therapy have also been found to correlate with adverse effects upon body image, sexual functioning, and quality of life (Avis, Crawford, & Manuel, 2005; Rostom, 2001; Young-McCaughan, 1996). Finally, surgery- and radiotherapy- induced lymphedema has been associated with body image concerns in correlational and qualitative studies (Fu et al., 2013; Ridner, Bonner, Deng, & Sinclair, 2012).

The overall pattern of findings suggests that treatment-induced appearance and bodily changes can cause distress and have adverse impacts upon body image. Nevertheless, it is important to acknowledge the predominant limitations of this body of research. Firstly, widely employed breast-cancer specific measures to assess body image, including the Body Image subscale of the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire – Breast Cancer Module (QLQ-BR23; Sprangers et al., 1996), tend to comprise less than five items. It is unlikely that so few items can capture the multidimensional and wide-ranging concerns experienced by women treated for breast cancer. Secondly, most research has focussed on the impact of surgery and hair loss, with less examining the influence of other appearance- and function- altering side effects, such as weight loss/gain, skin discolouration and marking, and menopause. Lastly, studies were primarily cross-sectional and conducted at different isolated points

of treatment, thus occluding knowledge regarding effects upon body image over time and impeding between-study comparisons.

Nevertheless, despite these limitations, the existing research highlights that body image concerns are an issue both during, and following, treatment for breast cancer and warrant attention. This is all the more important in view of the long-term consequences of treatment-related appearance changes. Longitudinal studies identify either no improvement or increases in body image concerns up to five years post-treatment (Falk Dahl et al., 2010; Parker et al., 2007), and poorer body image among breast cancer survivors compared with controls up to ten years after treatment (Buković et al., 2004; Sertoz, Doganavsargil, & Elbi, 2009). These findings are cause for concern, as longitudinal research has found impaired body image (as measured within one month of surgery) to predict elevated levels of sexual and intimacy concerns one year later (Burwell, Case, Kaelin, & Avis, 2006), and anxiety, depression, and intrusive thoughts six years later (Lam et al., 2012). Further, a longitudinal study discovered that poorer levels of body image, as measured before disclosure of diagnosis, were associated with a shorter length of survival ten years later (Cousson-Gelie et al., 2007). Collectively, these research studies emphasise the need for interventions that focus on improving body image among women treated for breast cancer.

1.5 Influences on the body image of women treated for breast cancer

Given the prevalence and consequences of body image concerns among women treated for breast cancer, it is important to identify influences upon body image, as these may offer clues about which factors should be targeted in psychosocial interventions.

1.5.1 Diagnosis- and treatment- associated influences

In addition to the type of treatment and especially the surgical modality, as discussed above (1.4), the length of time since treatment has also been indicated to influence body image among women treated for breast cancer. Indeed, a study found that women who were one year post-treatment had a more favourable body image than those who had finished treatment up to four year earlier (Härtl et al., 2003). Further, the influence of the diagnostic stage has been explored with findings suggesting that women diagnosed with an earlier tumour stage (e.g. Stage I) experience greater body satisfaction than women diagnosed with a later tumour stage (Härtl et al., 2003).

Most research examining influences upon body image among women treated for breast cancer has focussed on diagnosis- and treatment- associated variables. While these factors can aid decision-making and preparation for diagnosed women, they are non-modifiable and consequently cannot be targeted in an intervention. It is therefore important to focus on targetable psychosocial variables, as outlined in an etiological approach to intervention development.

1.5.2 Psychological/Social influences

Research has identified psychological influences which have been associated with body image among women treated for breast cancer. Indeed, depressive mood has been associated with body dissatisfaction in cross-sectional studies (Begovic-Juhant et al., 2012; Zimmermann, Scott, & Heinrichs, 2010), while both depressive and anxiety symptoms have been found to predict body image concerns in longitudinal research (Falk Dahl et al., 2010). Nevertheless, it should be highlighted that depression is common among women at all phases of treatment (Massie, 2004), and other longitudinal research has found poor body image to predict depression (Figueiredo, Cullen, Hwang, Rowland, & Mandelblatt, 2004; Moreira & Canavarro, 2010). In contrast, greater confidence can be placed in the influence of the importance of appearance, which is considered to be the extent to which an individual invests in their appearance for their definition of self-worth (i.e. appearance investment; Cash, Melnyk, & Hrabosky, 2004). A longitudinal study found that elevated levels of appearance investment following surgical treatment predicted higher levels of appearance dissatisfaction, body shame, and self-consciousness, one year later (Moreira & Canavarro, 2010). This finding suggests that a multidimensional definition of body image is likely to be important in this population.

With regard to social influences, lower levels of perceived social support have been correlated with poorer body image among women treated for breast cancer (Moreover, partners have also been identified as an important influence upon body image among women treated for breast cancer. A longitudinal study found that perceptions of lower emotional involvement and adverse reactions from partners following surgery, predicted higher levels of body dissatisfaction one year later (Wimberly, Carver, Laurenceau, Harris, & Antoni, 2005).

While it is important to identify factors associated with body image among women treated for breast cancer, in reality they are unlikely to act in isolation. Theoretical

models of body image propose ways in which factors interact with one another to influence body image. These models can therefore be used to inform the development of interventions, as they propose influences to be targeted. Theoretical models of body image have been developed specifically for people undergoing treatment for cancer.

1.6 Theoretical models of the body image of women treated for breast cancer

1.6.1 A cognitive-behavioural model

White (2000; see Figure 1.1) proposed a heuristic cognitive-behavioural model, which focusses on the way in which individuals experience objective or perceived changes to their appearance due to cancer and its treatment. This model consists of several components (which are numbered) related to one another by pathways. White (2000) stipulates that perceived appearance changes (1) will be processed in the context of the individual's beliefs about themselves and their appearance. A self-schema (2) is an organised self-structure comprised of interconnected constructs (e.g. "I am a good person", "I am liked by others") which when activated, will spread to other schemas, and influence subsequent information processing. The body image schema (3) is the most important interconnected schema in this model, and its content will predict both the degree to which the individual is invested in the changed body features (4) and whether there is a real self/ideal self-discrepancy (5). It is argued that these components (2, 3, 4 and 5) will subsequently predict the nature of appearance-related assumptions (6), which will in turn determine automatic thoughts and images (7), which then predict the consequential body image emotions (8) and compensatory behaviours (9). In summary, actual or perceived appearance changes are predicted to lead to adverse assumptions, thoughts, emotions, and behaviours, if both investment in the appearance change is high and self-ideal discrepancy relating to the appearance change is experienced.

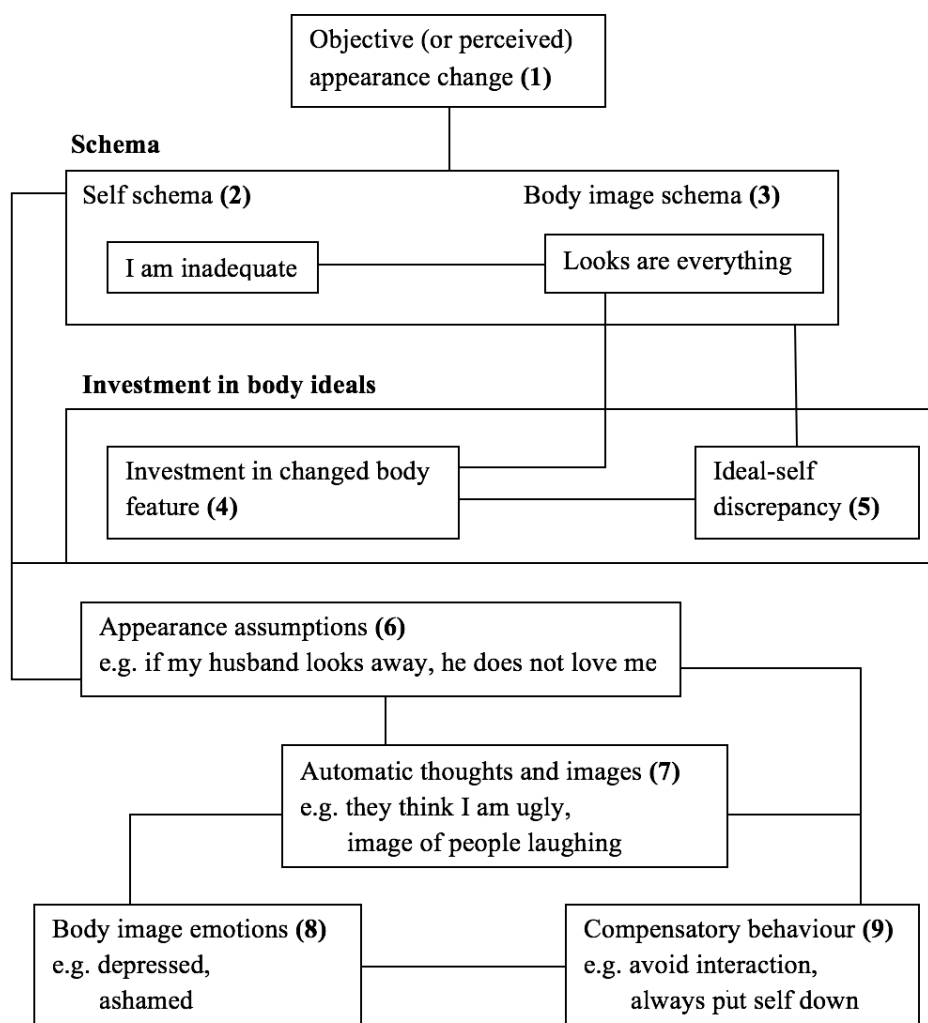


Figure 1.1 White's (2002) cognitive behavioural model of body image in cancer patients. First produced by Psycho-Oncology (2002), 9(30), 183-192. Reproduced with copyright permission from John Wiley and Sons.

The model helps conceptualise body image concerns among people treated for cancer, and was originally developed to be used as a screening tool (White, 2000). Nevertheless, neither the model in its entirety nor any of its components has been tested among women treated for breast cancer, which impugns its usefulness for informing intervention development. Further, self-schema and body image schema are psychological constructs which are difficult to change, while appearance assumptions, automatic thoughts and images, body image emotions, and compensatory behaviour might be considered outcomes of body image concerns, as opposed to modifiable and targetable influences. Additionally, while appearance investment has been shown to prospectively predict body image concerns among women treated for breast cancer (Moreira & Canavarro, 2010),

the model considers investment in relation to the changed appearance feature only, thus overlooking pre-existing levels of investment in appearance in general before diagnosis. In summary, the model only considers body image concerns relating to cancer-related appearance changes, as opposed to other aspects of appearance. More generally, this model is a very individualistic one with no recognition of broader sociocultural factors which may influence body image (e.g. perceived pressure from the media to look a certain way).

1.6.2 A continuum of body image concerns

Two additional theoretical models specific to body image concerns among individuals undergoing treatment for cancer have been proposed by Fingeret and colleagues (Fingeret, 2010; Fingeret, Nipomnick, Crosby, & Reece, 2013).

The first model postulates that body image concerns of post-treatment cancer patients exist along a continuum (Fingeret, 2010). For example, someone possessing mild difficulties accepting their appearance changes may feel self-conscious, yet still participate in social situations. However, someone experiencing extreme body image concerns may find this challenging and end up feeling isolated due to avoidance. This theory argues that body image concerns experienced by cancer patients are not always pathological in nature, but rather a more normative experience, thus reflecting what many women would be expected to feel following appearance-altering treatment for breast cancer. This model helpfully represents body image concerns among cancer patients at all points along a continuum rather than categorising them as experiencing concerns or not doing so. However, it has not undergone empirical testing and is limited in its ability to inform intervention, since it does not propose targetable influences upon body image.

1.6.3 A model conceptualising patient outcomes following breast reconstruction

The second theoretical model proposed by Fingeret et al. (2013) relates to women who have undergone breast reconstruction (see Figure 1.2). It considers the way in which historical and premorbid influences (demographics, psychological/social, and historical medical factors), disease- and treatment- associated factors (tumour characteristics, cancer treatment, reconstruction), and external evaluation of outcomes concerning breast cancer reconstruction (surgeon's views of reconstruction outcome, significant others' views of reconstruction outcome, objective measurement of treatment outcome and

breast aesthetics) affect core patient-outcomes (patient satisfaction, quality of life, body image) following breast reconstruction. The overlap and interrelationships between the three key patient-outcomes in the model are emphasised.

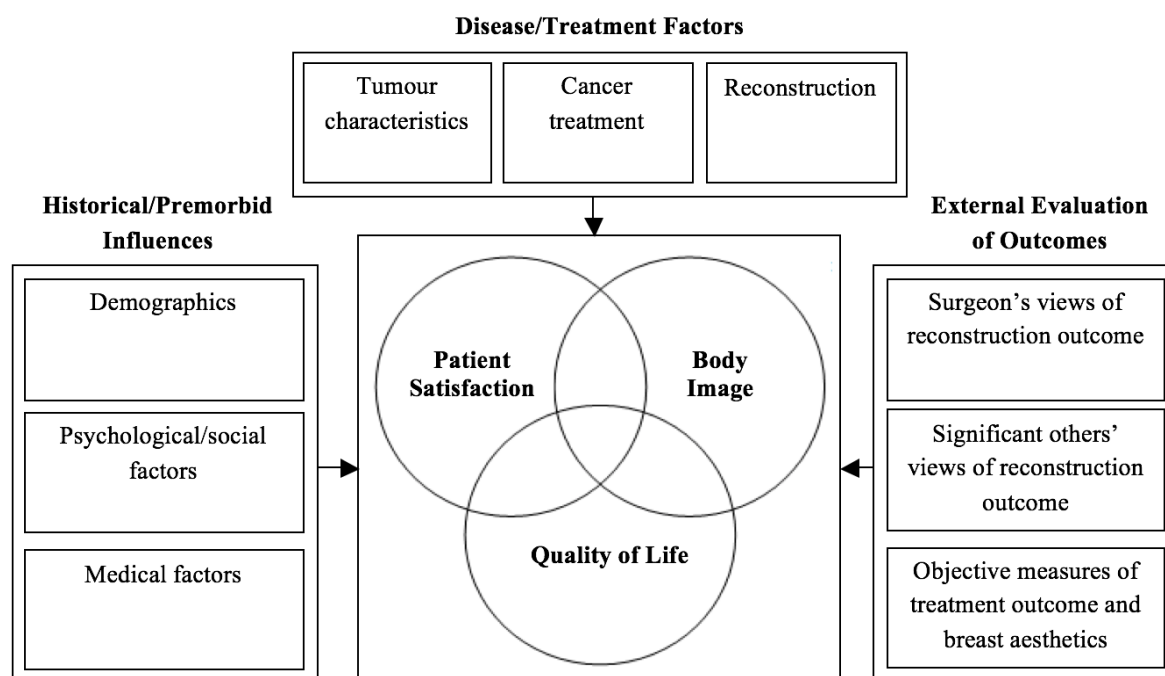


Figure 1.2 Fingeret et al's (2013) theoretical model conceptualising patient outcomes related to breast reconstruction and associated-factors. First produced by Cancer Treatment Reviews (2013), 39(6), 673-681. Reproduced with permission from Elsevier.

This framework provides a thorough consideration of influences upon body image (in addition to patient satisfaction and quality of life) following breast reconstruction. Neither the whole model nor any of its components has been purposely tested, but other research has provided empirical support for some components. For example, as previously discussed (1.5.1), cancer treatment factors (i.e. types of treatment) have been found to influence body image, but these are not modifiable, and consequently targetable, in psychosocial interventions. In contrast, empirical support has been demonstrated for the psychological/social factors in the model (see 1.5.2), which could form targets in intervention. However, this support is primarily cross-sectional, with longitudinal research indicating depression and anxiety as outcomes rather than predictors of poor body image among women treated for breast cancer (Figueiredo et al., 2004; Lam et al., 2012). This model is limited in the further respect that it does not include women who undergo forms of surgery other than breast reconstruction (i.e. lumpectomy or mastectomy alone) or other non-surgical treatments.

In summary, this body of literature suggests that body image research and proposed models in breast cancer are limited by a lack of empirical support and a heavy focus upon diagnosis- and treatment- factors, which are neither modifiable nor targetable in psychosocial interventions. Like biomedical models, proposed models are largely illness-based rather than holistic, whereby the individual is conceptualised in terms of the disease. Indeed, biomedical models have been criticised for being reductionist, and for dehumanising medicine and disempowering patients (Engel, 1989). In view of these criticisms, the biopsychosocial model was theorised by Engel (1989) in order to account for social and psychological influences upon illness and health. This holistic model considers how health and illness are affected by many levels of influence, from the molecular to the societal level (Borrell-Carrió, Suchman, & Epstein, 2004).

With regard to body image concerns among women treated for breast cancer, while these are likely to relate to diagnosis and treatment, additional influences are also likely, and these models fail to recognise the person beyond their disease. For example, these models do not consider the presence of pre-diagnosis body image concerns, and the possibility that other factors beyond cancer may influence body image during and following treatment, such as broader sociocultural influences. A more holistic approach is therefore needed. Indeed, body image models within breast cancer could capitalise on knowledge gleaned from the broader body image field. They could then look beyond the individualistic disease-focussed influences to broader sociocultural influences upon body image. Further, given that cancer-specific models have not been well tested, it may be worthwhile to look to the wider body image literature for insights concerning models that have undergone rigorous testing.

The majority of women treated for breast cancer are in midlife, commonly defined as the period between 35 and 55 years of age (Hockey & James, 2003; Mangweth-Matzek et al., 2014). The research discussed thus far indicates the prevalence of treatment-specific body image concerns among this group, but body image has also been recognised as an issue warranting attention among women in midlife, irrespective of cancer treatment (e.g. Lewis & Cachelin, 2001). Given that women treated for breast cancer tend to be in midlife, they are arguably vulnerable to similar body image concerns identified in this group more broadly. These concerns may present themselves before diagnosis and

treatment, and become exacerbated by the addition of treatment-related bodily concerns. Nevertheless, research examining body image among this group has focussed on the isolated impact of treatment-associated concerns, without taking pre-existing concerns or non-treatment related concerns which develop post-treatment into account. The potential for exploring the accumulative impact of both sources of concern has therefore been overlooked, which suggests that women may not have been adequately supported in terms of body image concerns during or following treatment and indicates the need for holistic intervention. It is therefore important to review the growing literature that has examined body image in midlife.

1.7 Body Image among women during midlife

Weight and shape concerns have been consistently reported among women in midlife (Gravener, Haedt, Heatherton, & Keel, 2008; Mangweth-Matzek et al., 2006). A cross-sectional study among more than 1000 women found that women in their 50s reported greater dissatisfaction with their current body weight or shape compared with retrospective recollections of their 20s, 30s, and 40s (McLaren & Kuh, 2004). The desire to be thinner was identified among 71% of women above the age of 30 years in a separate study, in spite of 73% of the sample being categorised as normal weight (Allaz, Bernstein, Rouget, Archinard, & Morabia, 1998). Further cross-sectional research with 1,800 midlife women reported that 40% of participants checked their body size or shape daily, and weighed themselves frequently, while 80% identified weight and shape as important for their self-perception (Gagne et al., 2012). Nevertheless, these aspects are not isolated sources of concern, as dissatisfaction with overall appearance is predominant among this group (Pruis & Janowsky, 2010). Women in midlife also note greater dissatisfaction with some aspects of their appearance now than when they were younger, including their stomach (83.9%), shape (73.8%), weight (71.1%), skin (70.1%), arms (65.8%), thighs (57.4%), face (54.1%), and overall appearance (66.4%; Gagne et al., 2012).

Body image concerns among women in midlife have been correlated with disordered eating (McLean, Paxton, & Wertheim, 2010; Midlarsky & Nitzburg, 2008), which in turn has been demonstrated to lead to adverse psychosocial outcomes, including low self-esteem, depression, anxiety, and impaired social relationships, thus warranting concern (Fairweather-Schmidt, Lee, & Wade, 2015; Mangweth-Matzek et al., 2014). Indeed,

longitudinal research indicates a prolonged risk from young adulthood to midlife for disordered eating (Keel, Gravener, Joiner, & Haedt, 2010). Dangerous behaviours, including stringent dieting, purging, and the use of laxatives, have increased among this group over previous years (Ackard, Richter, Egan, & Cronemeyer, 2013; Hay, Mond, Buttner, & Darby, 2008). A cross-sectional study among a sample of women aged between 42 and 55 years found 13.4% to report fasting or restricting food intake, while 11% reported binge eating (Marcus, Bromberger, Wei, Brown, & Kravitz, 2007). In fact, research suggests that 5% of this group show symptoms consistent with DSM-IV criteria for diagnosis of an eating disorder (Mangweth-Matzek et al., 2014) and clinical treatment for disordered eating has increased significantly among women in midlife (Ackard et al., 2013).

The body image field originated in eating disorder research and thus tends to focus upon weight and shape. However, there are other aspects of concern among women in midlife, such as the effects of ageing (see 1.8.2), which are also important to address. Nevertheless, given increasing recognition of body image concerns and disordered eating among this group, irrespective of cancer treatment, body image in midlife is a pertinent issue. Researchers have consequently directed their attention towards the identification of associated influences and risk factors, which could serve as targets for intervention (Slevec & Tiggemann, 2011b). These influences have remained largely unexplored among women treated for breast cancer and are omitted from theoretical models of body image among this group. However, given that women treated for breast cancer tend to be in midlife, they are likely to experience body image concerns common to this group before their diagnosis, which could be exacerbated by treatment. Consequently, the identified influences on the body image of women in midlife (i.e. prior to diagnosis) may be the same for the body image of women treated for breast cancer. It is therefore important to examine influences which have been found to affect the body image of midlife women, as these could serve as potential targets in a psychosocial intervention.

1.8 Influences on the body image of women in midlife

Several biological, psychological, and sociocultural influences have been associated with women's body image concerns in midlife (Slevec & Tiggemann, 2011b).

1.8.1 Biological influences

Biological influences include body mass index (BMI) and menopausal status. There is substantial cross-sectional support for an association between elevated BMI and higher levels of body dissatisfaction and disordered eating among women in midlife (e.g. Forbes et al., 2005; McLean et al., 2010), which has been corroborated by longitudinal research (McCabe, Ricciardelli, & James, 2007; McLaren, Hardy, & Kuh, 2003). However, fewer studies have examined the influence of menopausal status upon body image and the direction of the influence is inconclusive. Two cross-sectional studies indicated that postmenopausal women were more dissatisfied with their bodies (Deeks & McCabe, 2001) and exhibited higher levels of disordered eating (Copeland, Martin, Geiselman, Rash, & Kendzor, 2006) than premenopausal women. However, a longitudinal study identified higher levels of weight satisfaction among postmenopausal than premenopausal women (McLaren et al., 2003). Clearly, there is a need for more prospective research which follows the same groups of women from pre-menopause to post-menopause to elucidate this relationship. Nevertheless, while BMI and menopausal status are biological factors, they are only likely to influence body image due to their interaction with social and cultural influences. For example, the menopause is associated with weight gain and weight redistribution (Poehlman, Toth, & Gardner, 1995; Wing, Matthews, Kuller, Meilahn, & Plantinga, 1991). While these changes may not inherently adversely affect body image, they may do so when living in a Westernised society which values lower BMI and slimmer bodies. Indeed, society's view of these biological factors is more likely to influence body image than any biological aspects (e.g. hormonal changes) which may underlie these changes. Body image research may therefore have focussed on psychological and sociocultural influences for this reason, in addition to the likelihood that these constitute modifiable influences that can be targeted in psychosocial interventions.

1.8.2 Psychological influences

The majority of recognised psychological influences on body image, such as social comparison regarding appearance and internalisation of the thin ideal, discussed below, are common to both young and midlife women. However, a distinct factor which has been closely associated with body image concerns among women in midlife is ageing anxiety. This has been defined as the “combined concern and anticipation of losses

centred around the ageing process” (Lasher & Faulkender, 1993; pp 247), of which concerns are related to ageing-associated changes to physical appearance (Midlarsky & Nitzburg, 2008; McKinley & Lyon, 2008). As women get older, they tend to experience various changes in their appearance, including decreased muscle mass and increased fat mass (Evans & Lexell, 1995; Hughes et al., 2004) and change in body shape due to greater weight distribution from the lower body to the torso (Tchkonina et al., 2010). These weight and shape changes are exacerbated during the menopause (Rodin, Silberstein, & Striegel-Moore, 1984; Voda, Christy, & Morgan, 1991), and have been found to prospectively predict weight dissatisfaction (McLaren et al., 2003). Women in midlife can also experience changes to skin with regard to elasticity, firmness, and colouration (Šitum et al., 2010), while their hair can go grey, thin, and change in texture (Whitbourne & Skultety, 2002). Further, the medical management of health conditions in midlife can indirectly alter appearance (Clarke & Griffin, 2008). For example, corticosteroids are taken to manage inflammatory conditions (e.g. Crohn’s disease, rheumatoid arthritis), and have been associated with overall weight gain, weight redistribution around the face, bloating, and thinning skin, as evidenced by stretch marks and bruising. An additional example is the treatment of cancer, whereby the multiple avenues of intervention can impose different effects on appearance (see 1.3).

While these alterations to appearance are indicative of a normal ageing process, they move women further away from the dominant sociocultural ideal of female beauty, which emphasises thinness and youth, and can consequently lead to adverse psychosocial outcomes for women in midlife (Gosselink, Cox, McClure, & De Jong, 2008; Tiggemann, 2004). Indeed, Western norms associate women’s ageing with a deterioration in physical attractiveness (Saucier, 2004) and a “double standard of ageing” has been proposed (e.g. Wilcox, 1997), which argues that inevitable ageing-related appearance changes are more challenging for women than men. The number of cosmetic procedures for anti-ageing (e.g. face lift) has increased in the UK by 17% since 2012 (The British Association of Aesthetic Plastic Surgeons, 2014), and the largest consumers of cosmetic surgery in the United States are women aged between 40 and 54 years (American Society of Plastic Surgeons, 2014). Further, ageing anxiety has been associated with body shame, drive for thinness and extreme dieting (Lewis & Cachelin, 2001; McKinley & Lyon, 2008).

Additional psychological factors have been associated with body image concerns among women in midlife. Internalisation of the thin ideal is considered the extent to which an individual “buys into” socially determined standards of beauty and pursues behaviours which will bring them closer to these ideals (Thompson et al., 1999). While socially defined ideals of beauty include qualities beyond thinness (e.g. youthful blemish- and wrinkle- free skin, long shiny hair, hairless body), the “thin ideal” is used as shorthand in the literature. Further, the thinness component of the ideal is believed to promote disordered eating (Thompson & Stice, 2001). It is argued that internalisation of the thin ideal promotes body dissatisfaction as the endorsement of socially determined ideals of beauty emphasises the gap between an individual’s own physical appearance and that of the unattainable societal ideal (Thompson et al., 1999). Cross-sectional research has provided support for an association between elevated levels of internalisation and greater body image concerns among midlife women (Forbes et al., 2005; Katz, 2005), and a longitudinal study found internalisation to predict weight loss strategies among this group (McCabe et al., 2007). While prospective exploration concerning the influence of internalisation on body image is absent for this group, longitudinal studies have confirmed this relationship among adolescent girls (Carlson Jones, 2004; Chen & Jackson, 2009; Stice & Whitenton, 2002).

Social comparison regarding appearance has also been thought to influence the body image of women in midlife. This view is based on the Social Comparison Theory (Festinger, 1954), which maintains that social comparison “represents the evaluative process that involves both seeking information and making judgments about the self, relative to others” (Carlson Jones, 2004, p. 823). This theory distinguishes two types of social comparison: upward comparisons and downward comparisons. Upward comparisons occur when individuals compare themselves to someone considered superior on a particular construct. For example, in the case of appearance, a woman might compare herself with someone she considers more attractive or who may embody the cultural appearance ideal (e.g. a model, a ‘conventionally attractive peer’, women who have not had breast cancer). Downward comparisons with regard to appearance occur when comparisons are made with someone considered less attractive. Festinger (1954) argued that upward comparisons were likely to lead to adverse outcomes, such as body dissatisfaction, due to the discrepancy between the appearance of the comparison target and their own. In line with this theory, one cross-sectional study found that the

increased tendency of midlife women to engage in upward social comparisons regarding their appearance was correlated with elevated levels of body dissatisfaction (Kozar & Damhorst, 2008). While this finding warrants replication through prospective research, this influence has received longitudinal support among adolescent girls (Carlson Jones, 2004; Chen & Jackson, 2009). Social comparison regarding appearance will be referred to as ‘appearance comparisons’ from hereon.

Appearance investment has been associated with body image among women in midlife, whereby greater importance attributed to appearance has been correlated with poorer body image (Katz, 2005; McLean et al., 2010), and has predicted disordered eating in prospective research (McCabe et al., 2007). Nevertheless, some cross-sectional research has failed to support a relationship between appearance investment and body dissatisfaction (Kozar & Damhorst, 2008; Slevic & Tiggemann, 2010), thus emphasising the importance of conducting prospective research to clarify whether this is a key influence upon body image among midlife women.

The theory of self-objectification postulates that a woman’s body is socially constructed as an object to be viewed and appraised by others, which eventually leads the individual to adopt the viewer’s perspective of their own appearance, thus engaging in self-objectification (Fredrickson & Roberts, 1997). There has been substantial cross-sectional support for an association between self-objectification and both body dissatisfaction and disordered eating among women in midlife (e.g. Greenleaf, 2005; McKinley & Lyon, 2008). Prospective research has only been conducted among adolescent girls, but has confirmed this relationship (Grabe, Hyde, & Lindberg, 2007).

Negative affect has been cross-sectionally associated with body dissatisfaction among women in midlife (Hrabosky & Grilo, 2007; Midlarsky & Nitzburg, 2008), but no prospective research examining this link could be located. Nevertheless, longitudinal research has found negative affect to predict body image distress among adolescent girls (Bearman, Presnell, Martinez, & Stice, 2006; Presnell, Bearman, & Stice, 2004). Finally, there is substantial cross-sectional evidence for the influence of self-esteem, whereby lower self-esteem has been related to elevated levels of body dissatisfaction among midlife women (e.g. Green & Pritchard, 2003; Webster & Tiggemann, 2003), but no longitudinal exploration has been conducted. Nevertheless, self-esteem has been found to

predict poorer body image among adolescent girls five years later (Paxton, Eisenberg, & Neumark-Sztainer, 2006).

1.8.3 Sociocultural influences

While the role of sociocultural factors in the development of body image concerns among adolescent and young adult women has been established (e.g. Keery, Van den Berg, & Thompson, 2004), there is less research exploring their influence among women in midlife. The Western thin youthful beauty ideal is a strong sociocultural influence whose primary transmitters have been theorised as the media, family, and peers (Stice, 1994). A cross-sectional study with women in midlife identified an association between, on the one hand, direct pressure and strong messages to lose weight received from a combination of media (such as TV and magazines), family (collectively regarded as “family”), and peers and, on the other, increased body dissatisfaction and disordered eating (Midlarsky & Nitzburg, 2008). While important, these findings do not delineate the individual influence of each sociocultural source. Nevertheless, additional cross-sectional research discovered media influence upon self-perceptions, and perceived pressure from family to lose weight, as independent predictors of body image concerns, with the latter identified as the stronger influence (Green & Pritchard, 2003). However, a prospective study highlighted the strong influence of perceived media pressure to lose weight, which was discovered to predict drive for thinness and bulimic symptoms among this group (McCabe et al., 2007).

With regard to the influence of romantic partners, a cross-sectional study among midlife women found that negative comments regarding their weight or shape received from a current partner were related to greater levels of body dissatisfaction (Mclaren, Kuh, Hardy, & Gauvin, 2004). Further, the receipt of such negative comments from others when growing up was also associated with body dissatisfaction (Mclaren et al., 2004). However, other cross-sectional research found that teasing regarding weight and shape during adulthood, rather than childhood, was related to poorer body image among this group (Matz, Foster, Faith, & Wadden, 2002). While these findings indicate that the receipt of negative comments regarding appearance while growing up may have a lasting adverse effect on body image in midlife, longitudinal research is needed to confirm this influence and that of other sociocultural sources.

Reflecting more broadly upon research which has explored body image among women in midlife, it may be said that the evidence base is smaller than that for child, adolescent or young adult women. It is therefore important that a greater number of studies, particularly of prospective design, are conducted with this older group of women, given that the limited existing research suggests that body image concerns can linger beyond young adulthood. Further, research exploring sociocultural influences has focussed only on pressure to lose weight or comments regarding weight or shape. Midlife women experience ageing-related appearance changes beyond weight and shape alterations (e.g. changes to skin; see 1.8.2). These have been identified as sources of “ageing anxiety”, which in turn has been associated with body dissatisfaction. It is therefore important that researchers examine sociocultural influences to alter these other aspects of appearance. Nevertheless, while there are limitations associated with existing research in this area, these still constitute pockets of evidence for modifiable influences upon the body image of women in midlife.

As previously emphasised, women treated for breast cancer are predominantly in midlife. Therefore, it is likely that they are also susceptible to these sociocultural and psychological influences, which may consequently contribute towards the body image concerns identified among this group. Women treated for breast cancer live in an appearance-focussed society that emphasises the thin youthful beauty ideal. Like women in midlife generally, they too are barely represented in the media. Consequently, treatment-related appearance changes, such as mastectomy, hair loss, and weight gain, increase the discrepancy between their body and that of the ideal. It is consequently reasonable to hypothesise that both the sources of pressure and psychological processes could be the same for women treated for breast cancer. For example, while family members might put pressure on women in midlife to lose weight, family members may put pressure on women treated for breast cancer to camouflage and consequently normalise their appearance. Further, while women in midlife may internalise the thinness of the thin ideal, women treated for breast cancer may also internalise other aspects of the thin ideal (e.g. hair, breasts). Finally, while women in midlife may compare themselves to celebrities in the media, women treated for breast cancer may also compare themselves to their selves before breast cancer, or to other women treated for breast cancer.

Research (e.g. Helms et al., 2008) and theories (e.g. White, 2000) exploring the body image of women treated for breast cancer have failed to consider the psychological and

sociocultural influences which have received support among women in midlife (Slevec & Tiggemann, 2011b) and can serve as modifiable targets for intervention. Such neglect constitutes a missed opportunity to examine whether factors beyond disease-specific characteristics are important for women's psychological adjustment and thriving following breast cancer. This consequently represents an additional missed opportunity for developing interventions for this group. More generally, overlooking influences found to affect the body image of midlife women also occludes knowledge regarding whether research conducted with this group may be of relevance to the subgroup of women treated for breast cancer. Further, models conceptualising body image among women treated for breast cancer buy into the illness model of health. Indeed, rather than adopting a holistic biopsychosocial framework, existing theoretical models are narrowly focussed upon disease- and treatment- related factors, as opposed to considering psychological and sociocultural factors outside of cancer. Further, very few of the influences (negative affect and appearance investment) that have been found to relate to body dissatisfaction among women in midlife have been examined among women treated for breast cancer.

While research can identify isolated influences upon body image in midlife, the reality is that these influences are likely to interact with one another to affect body image. It is therefore important that proposed theoretical models are consulted, as they can help to conceptualise the complexity of body image and inform intervention.

1.9 Theoretical models for the body image of women in midlife

There are several theoretical perspectives within the body image field, including the sociocultural, evolutionary, genetic and neuroscientific, cognitive-behavioural, and feminist perspectives. However, among the various factors that have been proposed to influence body image in the general population, sociocultural variables are believed to be of particular importance (Cash & Smolak, 2011; Thompson et al., 1999).

1.9.1 The Tripartite Influence Model

One sociocultural model which has been proposed is the Tripartite Influence Model of body dissatisfaction and eating disturbance (see Figure 1.3; Thompson et al., 1999). This postulates that the female thin ideal is conveyed and reinforced by three sociocultural sources of influence: the media, parents, and peers. Each of these can provide direct or

indirect pressure to meet appearance ideals. With regard to the media, pressure to conform to appearance ideals is transmitted through adverts, magazines, and television programmes and films which feature thin and youthful airbrushed models representing beauty ideals. Parents can also apply direct and indirect pressure to conform to appearance ideals. They may directly enforce pressure by making comments to their child about their appearance, while also enforcing pressure indirectly by modelling their own body image concerns. Similarly, peers can apply direct pressure to meet appearance ideals through teasing and “peer pressure”, but pressure can also be applied indirectly by engaging in conversations about their own appearance or the appearance of others.

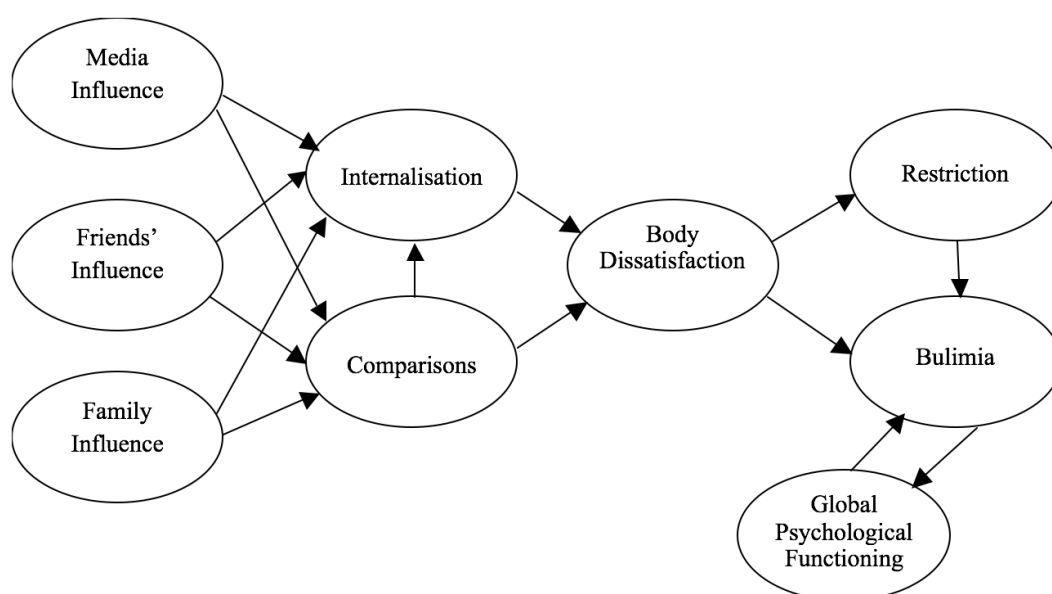


Figure 1.3 The Tripartite Influence Model of body dissatisfaction and eating disturbance (Thompson et al., 1999). First produced by Thompson, Heinberg, Altabe, and Tantleff-Dunn, (1999). *Exacting Beauty: Theory, Assessment, and Treatment of Body Image Disturbance*. Reproduced with copyright permission from the American Psychological Association.

The Tripartite Influence Model additionally proposes two psychological processes through which the three sociocultural influences exert their effects on body image and eating disturbance: internalisation of the thin ideal and upward appearance comparisons. Internalisation of the thin ideal is the degree to which an individual “buys into” socially determined ideals of beauty and pursues behaviours which will bring them closer to these ideals (see 1.8.2; Thompson et al., 1999). This is an unachievable goal for most women

and consequently leads towards body dissatisfaction. Upward appearance comparison is the degree to which an individual compares their own appearance with that of someone they consider more attractive (see 1.8.2; Festinger, 1954). In addition to promoting body dissatisfaction due to the discrepancy between the appearance of the comparison target and the individual, the increased tendency for upward appearance comparisons is also suspected of reinforcing internalisation, as the individual might look out for, and compare themselves to, thin-ideal media. Subsequently within the model, body dissatisfaction is theorised to lead to two components of eating disturbance: restriction and bulimia, with an additional direct pathway proposed from restriction to bulimia. Finally, bulimic eating pathology is believed to have a reciprocal relationship with global psychological functioning (e.g. self-esteem, depression).

Variations of the originally proposed Tripartite Influence Model have been tested among adolescent and young adult women in cross-sectional research, and have received support. For example, Shroff and Thompson (2006) tested the originally proposed model, plus a previously identified pathway between internalisation and restriction (Keery et al., 2004) among adolescent girls. Parental pressure was found not to influence any other components, while the added pathway was also found to be non-significant. All other pathways were supported, however. Additional studies have tested variations of the model among young adult women beyond America (e.g. Rodgers, Chabrol, & Paxton, 2011; Yamamiya, Shroff, & Thompson, 2008) and have identified cross-sectional support for the majority of pathways. Nevertheless, the Tripartite Influence Model has not been tested in its entirety longitudinally. However, given that the current thesis is focussed on body dissatisfaction rather than eating pathology, research that lends longitudinal support to the proposed components and pathways preceding body dissatisfaction elicits greater confidence in the model.

At present, prospective research that has examined the pathways between the three individual sources of pressure and the two psychological processes, and between appearance comparisons and internalisation, is absent. However, cross-sectional research among adolescent girls lent support to all of these pathways (e.g. Keery et al., 2004; Sands & Wardle, 2003; Shroff & Thompson, 2006). Further, the pathways between the two psychological processes and body dissatisfaction have been supported by longitudinal research among adolescent girls (Carlson Jones, 2004; Chen & Jackson, 2009; Stice & Whitenton, 2002).

While the originally proposed Tripartite Influence Model has not been tested in its entirety among women in midlife, Slevec and Tiggemann (2011a) tested a model of body dissatisfaction and eating disturbance based on the original. The cross-sectional study found that exposure to media (rather than perceived pressure from media, as in the original model) was associated with body dissatisfaction via internalisation, appearance comparisons, appearance investment, and ageing anxiety. Body dissatisfaction was in turn associated with eating pathology. Nevertheless, at present, no research has examined the pathways between the three proposed sources of pressure (the media, parents, peers) and the two psychological processes among women in midlife. However, as previously discussed (1.8.3), cross-sectional research has identified associations between, on the one hand, the combined pressure of all three sociocultural influences (Midlarsky & Nitzburg, 2008), media influence (e.g. Green & Pritchard, 2003), and peer pressure (e.g. Green & Pritchard, 2003) and, on the other, body dissatisfaction. Further, negative comments regarding weight and shape from current romantic partners and others when growing up (McLaren et al., 2004), and in adulthood (Matz et al., 2002), have been associated with poorer body image among this group. It is reasonable to suspect that a proportion of this sociocultural influence upon body image might be mediated by the two psychological processes proposed in the model. While the pathway from appearance comparisons to internalisation of the thin ideal has not been investigated among this age group, cross-sectional support has been found for the pathways between these psychological processes and body dissatisfaction (e.g. Forbes et al., 2005; Kozar & Damhorst, 2008).

While the sociocultural influences and psychological processes proposed within the Tripartite Influence Model have received substantial cross-sectional support among women in midlife, the model does not account for other psychological factors which have received cross-sectional support (see 1.8.2), such as appearance investment, self-objectification, negative affect, and self-esteem.

1.9.2 The Dual-Pathway Model

A second proposed sociocultural model is the Dual-Pathway Model of Bulimia Nervosa (see Figure 1.4; Stice, Nemeroff, & Shaw, 1996). This model argues that perceived sociocultural pressure for thinness promotes internalisation of the ideal-body stereotype, body dissatisfaction, and dietary restraint. Specifically, perceived messages regarding the value of a thin body predict ideal-body internalisation, which in turn contributes towards

body dissatisfaction, as it tends to signify an unattainable goal. However, perceived sociocultural pressure can also predict body dissatisfaction directly. Indeed, while a woman may be able to deliberately reject the ideal-body stereotype, she may still be negatively influenced by sociocultural messages insinuating her own body is unattractive. Additionally, perceived pressure for thinness is believed to directly promote dietary restraint. The Dual-Pathway Model also proposes that BMI predicts both perceived sociocultural pressure and body dissatisfaction, whereby women with elevated BMI experience greater pressure to have a thin body, and are at greater risk of feeling dissatisfied with their body. It is then argued that body dissatisfaction leads to dietary restraint and negative affect, which subsequently promote bulimic pathology. Indeed, the theory is entitled the “dual-pathway” model due to its postulation that dietary restraint and negative affect are the last proximal predictors of bulimic symptomatology, and mediate the effects of preceding variables.

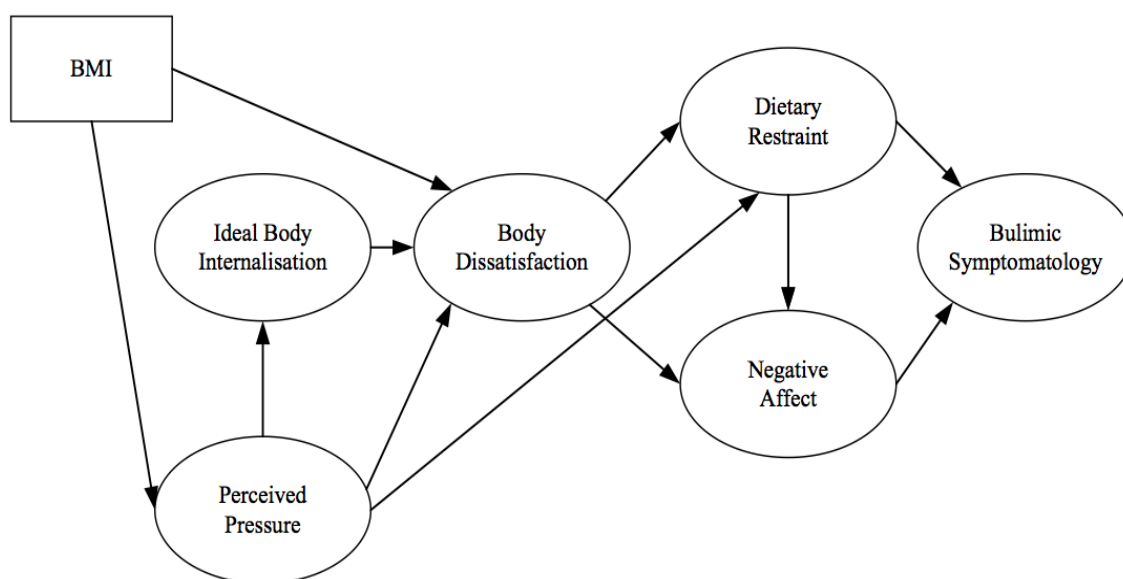


Figure 1.4 The Dual-Pathway Model of Bulimic Nervosa (Stice, Nemeroff, et al., 1996). First produced by *Journal of Social and Clinical Psychology* (1996), 15(3), 340-363. Reproduced with permission from Elsevier.

With regard to support for the Dual-Pathway Model, only two cross-sectional studies have evaluated the model in its entirety, both among young adult women. While one supported all hypothesised pathways (Stice, Nemeroff, et al., 1996), the other supported only some (Duemm, Adams, & Keating, 2003). A longitudinal study among female adolescents strengthened support for the model, apart from the non-significant pathway

between BMI and perceived sociocultural pressure (Stice, Shaw, & Nemeroff, 1998). However, it should be noted that all variables preceding the final outcome (bulimic pathology) were measured at the same time, while bulimic pathology was measured at a later date. Given that the outcome of interest to the current thesis is body dissatisfaction, prospective confirmation of the proposed pathways between the three predictors (perceived pressure, internalisation, and BMI) and body dissatisfaction will lend greater support for this model.

Longitudinal research has found perceived pressure to be thin (Field et al., 2001; Stice & Whitenton, 2002) and internalisation of the thin ideal (Carlson Jones, 2004; Stice & Whitenton, 2002) to predict elevated levels of body dissatisfaction among child and adolescent girls. In contrast, only cross-sectional support exists for the pathway between perceived pressure and internalisation among these younger groups (Keery et al., 2004; Sands & Wardle, 2003; Shroff & Thompson, 2006). Finally, while longitudinal research failed to support the pathway between BMI and perceived sociocultural pressure (Stice et al., 1998), elevated BMI has been found to predict body dissatisfaction among adolescent girls (e.g. Presnell et al., 2004; Stice & Whitenton, 2002).

While the first half of the Dual-Pathway Model (i.e. body dissatisfaction is the final outcome) has not been tested among women in midlife, support has been lent to several pathways preceding body dissatisfaction. As previously discussed (1.8.2 and 1.8.3), cross-sectional research has identified associations between, on the one hand, sociocultural influences to lose weight (e.g. Green & Pritchard, 2003; Midlarsky & Nitzburg, 2008) and internalisation (e.g. Forbes et al., 2005; Matz et al., 2002) and, on the other, body dissatisfaction among midlife women. Nevertheless, the pathways between perceived pressure and internalisation, and between BMI and perceived pressure, have not yet been examined in midlife. In contrast, correlational and longitudinal research has indicated a relationship between elevated BMI and body dissatisfaction among this group (e.g. Greenleaf, 2005; McLaren et al., 2003).

The components and pathways of the Dual-Pathway Model are similar to those proposed in the Tripartite Influence Model (Thompson et al., 1999), but the former may be considered the more simplistic of the two. For example, while the sources of perceived sociocultural pressure to lose weight are considered collectively within the Dual-Pathway Model, these are separated into three different sources of pressures in the Tripartite

Influence Model (parents, peers, and the media), which have been empirically supported among women in midlife. Further, both models include internalisation of the ideal as a psychological process proposed to promote body dissatisfaction. However, the Tripartite Influence Model includes upward appearance comparisons as an additional psychological process, which has also received cross-sectional support among this group. Nevertheless, like the Tripartite Influence Model, the Dual-Pathway Model fails to integrate other psychological influences (e.g. importance of appearance, self-esteem) found to correlate with body dissatisfaction among midlife women.

1.9.3 Objectification Theory

A third sociocultural model is Objectification Theory (Fredrickson & Roberts, 1997; see Figure 1.5). This theory contends that, in Westernised societies, there is a predominance of cultural practices whereby women's bodies are on public display and undergo sexual objectification. Sexual objectification refers to the reduction of a woman into an assortment of sexual parts and functions that serve the pleasure of others while overlooking her psychological being (Bartky, 1990). Women can experience sexual objectification in multiple ways on a daily basis. This can include experiencing leering at their bodies, sexual signals (e.g. whistling), unsolicited photos of their bodies, and unwanted sexual advances. This can occur in interactions with known others and strangers. Sexual objectification is also observable in the media; for example, in pornography, TV programmes and commercials, and social media (e.g. Facebook).

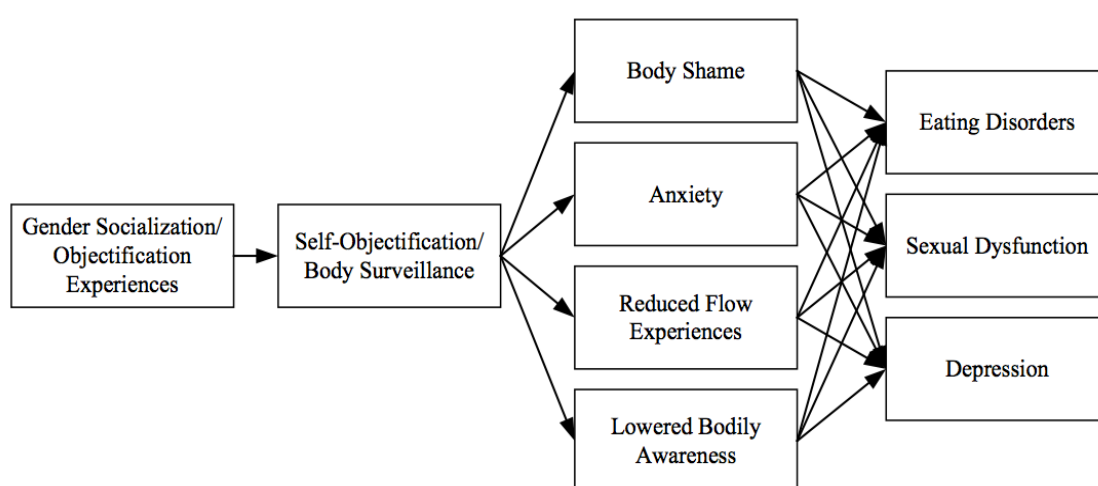


Figure 1.5 Objectification Theory (Fredrickson & Roberts, 1997). Figure in Moradi, Dirks, and Matteson (2005). Roles of sexual objectification experiences and

internalization of standards of beauty in eating disorder symptomatology: A test and extension of Objectification Theory. Figure 1, p. 421. Reproduced with copyright permission from American Psychological Association.

Objectification Theory proposes that living in a sexually objectifying culture can be detrimental to girls and women in numerous ways. The first consequence of recurrent objectification experiences is self-objectification, whereby girls and women internalize the sexual objectification, and begin to see themselves as objects to be appraised based solely on their appearance. This is accompanied by feelings of self-consciousness, which are manifested as persistent monitoring of the body's appearance, referred to as body-surveillance. Body surveillance is the mediating mechanism between sexual objectification experiences at the cultural level and a range of adverse subjective experiences at the individual level.

Self-objectification is theorised to cause increased body shame and appearance anxiety, reduced 'flow' (concentration) experiences on physical and mental tasks, and diminished awareness of internal bodily states (e.g. fatigue, emotions). In turn, it is proposed that these subjective experiences lead to a collection of mental health consequences: eating disorders, sexual dysfunction, and depression.

With regard to empirical support for Objectification Theory, only one study has conducted the most comprehensive examination of the full model (Tiggemann & Williams, 2012). This cross-sectional study carried out with female undergraduate students tested all components of the model apart from objectification experiences. Findings provided support for the theory; however, support was stronger for disordered eating, followed by depressed mood, and finally sexual functioning. Nevertheless, in relation to the focus of the current thesis, the model components 'body shame' and 'appearance anxiety' are considered facets of body dissatisfaction, and are therefore the outcomes of interest.

While no studies have examined the components and pathways preceding these two outcomes as a whole, research has used Objectification Theory to test individual pathways. Indeed, two studies have supported a cross-sectional pathway between objectification experiences and self-objectification, both conducted among young adult women (Augustus-Horvath & Tylka, 2009; Tylka & Hill, 2004). Correlational support has been found for the pathways leading from self-objectification or body surveillance to

body shame (e.g. Moradi et al, 2005; Tiggemann & Kuring, 2004; Tiggemann & Slater, 2001) and appearance anxiety (Tiggemann & Kuring, 2004) among adolescent and young adult women. Further, longitudinal research has confirmed the pathway between self-objectification and body shame (Grabe et al., 2007).

With regard to empirical support for these individual pathways among women in midlife, correlational research has identified the pathways leading from self-objectification or body surveillance to body shame (McKinley, 1999, 2004, 2006; McKinley & Lyon, 2008) and appearance anxiety (McKinley & Lyon, 2008; Tiggemann & Lynch, 2001). However, no research has examined the preceding pathway between objectification experiences and self-objectification among this group, so the validity of this proposed pathway is limited.

It is surprising that few studies have tested the first pathway between objectification experiences and self-objectification, when using the model to study body shame and appearance anxiety. This may be related to potential difficulties in locating an adequate measure for objectification experiences. Indeed, scales employed have differed between studies, and have included the Interpersonal Sexual Objectification Scale (Kozee, Tylka, Augustus-Horvath, & Denchik, 2007), the Perceived Sociocultural Pressures Scale (Stice, Ziemba, Margolis, & Flick, 1996), and the Internalisation subscales of the Sociocultural Attitudes Toward Appearance Questionnaire-3 (Thompson, van den Berg, Roehrig, Guarda, & Heinberg, 2004). While these various scales have been employed to measure the same construct, they may have previously been used to measure separate constructs. For example, the Perceived Sociocultural Pressures Scale may be used to measure sociocultural pressures (i.e. the media, family, peers) within the Tripartite Influence Model, while the Internalisation subscales of the Sociocultural Attitudes Toward Appearance Questionnaire-3 might be used to measure internalisation of the thin ideal, within the same model. This consequently raises doubts concerning the clarity of this first component of Objectification Theory.

Further, this theory is limited by including specific aspects of body dissatisfaction: body shame and appearance anxiety. It may benefit from expanding these components to account for body dissatisfaction more widely, as in the Tripartite Influence Model and the Dual-Pathway Model. Currently, Objectification Theory excludes evidence which has identified a relationship between self-objectification and other aspects of body

dissatisfaction among women in midlife (e.g. Grippo & Hill, 2008; McKinley & Randa, 2005). Further, the model fails to consider the influence of other psychological factors which have received cross-sectional support for their association with body dissatisfaction among women in midlife (e.g. internalisation of the thin ideal, appearance comparisons, importance of appearance, self-esteem).

More generally, while all three sociocultural models incorporate influences which are likely to be of relevance to women in the general population, regardless of their appearance or whether they have been treated for breast cancer, these models ignore systemic factors which are likely to influence body image among women treated for breast cancer. Indeed, they do not account for treatment-related factors which are proposed within cancer-specific theoretical models (see 1.6), and have been supported by research (e.g. relating to type of surgery received; see 1.5.1). Nevertheless, as previously emphasised, while systemic factors which influence body image warrant recognition, they are non-modifiable. In fact, most factors proposed within models conceptualising body image within cancer cannot be targeted in a psychosocial intervention. For example, only the component comprising psychological/social factors within Fingeret et al.'s theoretical model (2013) is targetable in intervention. Indeed, these narrow illness-focussed models fail to account for sociocultural influences and psychological factors proposed within sociocultural models which have received empirical support in the general population, and are likely to also influence women who experience treatment-related appearance changes. Further, it is difficult to interpret illness-related factors which have been proposed within cancer-specific models. This may account partly for why none of these models has actually been tested among women treated for breast cancer, while, in contrast, isolated components from the sociocultural models have been validated among women in midlife. Additionally, empirical support for these sociocultural models has informed the development of psychosocial interventions targeting body dissatisfaction, primarily among adolescent and young adult women (e.g. 'The Body Project'; Stice & Presnell, 2007)

1.10 The need for psychosocial body image interventions for women treated for breast cancer

Evidence to date indicates that body image concerns are prevalent among women in midlife (Gagne et al., 2012; Tiggemann, 2004) and women treated for breast cancer

(Helms et al., 2008). Within both groups of women, body image concerns are associated with adverse health and psychosocial outcomes (Begovic-Juhant et al., 2012; Midlarsky & Nitzburg, 2008). These findings therefore emphasise the importance of developing and disseminating effective, evidence-based interventions to ameliorate body image concerns among women in midlife. Women treated for breast cancer may be particularly vulnerable to body image concerns, as they may experience an accumulation of issues in relation to ageing-related concerns common to midlife and treatment-specific concerns.

The importance of addressing residual psychosocial consequences of cancer diagnosis and treatment, such as body image concerns, has been recognised internationally by governments, health policy and services, and community organisations (Centers for Disease Control and Prevention & Foundation, 2004; Department of Health et al., 2010; Department of Health, Macmillan Cancer Support, & Improvement, 2013). The examination and management of the needs of cancer survivors have also been identified as a national priority within the UK, in the forms of the ‘National Cancer Survivorship Initiative’ (Department of Health et al., 2010) and the ‘Living With and Beyond Cancer’ programme (Department of Health et al., 2013), which conjointly inform recommendations for Britain’s public health system, the National Health Service (NHS), regarding support provision. Further, Breast Cancer Care, the leading breast cancer charity in the UK, has called on policy makers, commissioners, and service planners, to provide support specifically to address body image concerns among women treated for breast cancer, and has highlighted thus the importance of developing effective body image interventions for this group (Breast Cancer Care, 2014).

Nevertheless, the body image support currently available for women treated for breast cancer is primarily based on camouflaging changes to their appearance, and psychosocial support is lacking. For example, the NHS will provide a breast prosthesis and sometimes will help with the cost of a synthetic wig. The national charity Breast Cancer Care provides ‘HeadStrong’, a service for patients who have or are likely to lose their hair from cancer treatment. Within this, women are provided with a one-to-one session of practical advice for caring for their scalp and hair before, during, and following treatment, and an opportunity to try on alternative forms of headwear (e.g. wigs, scarves and hats). Breast Cancer Care also offers free ‘lingerie evenings’, which take place in high street clothes stores. These evenings provide practical information and support regarding buying a bra after surgery, and offer the opportunity to be fitted for one, and to

see how bras fit on volunteer models, who have been treated for breast cancer themselves. An additional free camouflage service offered to women treated for breast cancer is 'Look Good, Feel Better'. This is delivered by a worldwide cancer charity with the same name and includes the provision of self-help skin care and make-up workshops for women experiencing appearance-altering side effects of cancer treatment. These workshops are run by "beauty volunteers" who share make-up techniques for minimising the appearance of side effects such as skin changes, and eyebrow and eyelash loss.

Camouflage services may be helpful within a 'tool box' of strategies to manage appearance-related concerns, but they have not undergone rigorous evaluation of their benefits for women's body image. It is possible that such services may reinforce the importance of women regaining and maintaining 'normality' in their appearance. As a result they may inadvertently increase women's investment in appearance and internalisation of cultural appearance ideals, which ultimately may hinder their body image in the longer term. Further, this form of support may not be appropriate at all stages of treatment, as appearance will change throughout and following treatment. Without formal evaluation of their impact, it is unclear whether camouflage services are effective in improving the body image of women treated for breast cancer, in the short or long term.

With respect to the UK's limited options for psychosocial support for body image concerns among this group, several cancer charities provide online self-help psycho-educational materials. Macmillan provides information about treatment-related appearance changes and their impact and practical advice concerning surgery options and camouflage, in addition to psychological strategies with regard to managing associated anxiety, unhelpful thinking, and other people's reactions, and fostering a positive body image. Breast Cancer Care also offers a 'Moving Forward' pack, which contains information on issues that may arise following treatment for breast cancer. Three pages of information are provided about body image, and signpost women towards other sections in the pack about wearing a prosthesis and clothing, and suggest talking to a breast cancer nurse or GP about body image concerns. While potentially helpful, neither of these online self-help sources of psycho-educational body image guidance have undergone rigorous evaluation.

Finally, free face-to-face ‘Moving Forward’ courses are available from Breast Cancer Care to support women treated for breast cancer. These four-week half-day courses are run in partnership with NHS hospitals, and aim to help women adjust to life following completion of active treatment for breast cancer using information, support, and professional guidance. Different issues are explored, including healthy eating, exercise, managing menopausal symptoms, lymphedema, cancer fatigue, and intimacy and relationships. Body image is explored briefly during the topic on intimacy and relationships. There are also local support groups around the UK, which are likely to offer informal support with regard to body image concerns, in addition to formal psychotherapeutic support offered by a limited number of psychologists on the NHS for individuals who are particularly distressed.

Nevertheless, while women treated for breast cancer can benefit from these free services, the absence of their rigorous evaluation precludes knowledge concerning their long-term impact on body image. Additionally, the majority of interventions which focus exclusively on body image are based on camouflage. This is not particularly helpful, as it reinforces the importance of appearance, and may not be able to address concerns following treatment when some aspects of pre-diagnosis appearance are not regained. Further, these forms of intervention do not take into account any pre-diagnosis or non-treatment related body image concerns, in addition to non-appearance focussed body image issues. There is currently a gap in the literature regarding evidence-based and effective psychosocial interventions to alleviate the body image concerns of women treated for breast cancer. Given that body dissatisfaction is an issue of concern among this growing group of women and is associated with adverse consequences (see 1.4), the development and evaluation of psychosocial interventions targeting body image following treatment for breast cancer is therefore important.

1.11 Aim of the thesis

Based upon the literature reviewed in this chapter, the aim of this thesis is to develop and assess the acceptability of an evidence-informed psychosocial intervention targeting body image among women treated for breast cancer.

It draws upon the existing research on body image influences and interventions among midlife women, including those treated for breast cancer, as the latter subgroup are likely to experience both treatment and non-treatment specific body image concerns. Further,

the field of research on body image among women in midlife more generally is arguably more developed than the literature on women with breast cancer, and may therefore offer important insights for the purpose of advancing and improving interventions for women treated for breast cancer.

Chapter 2: Methodology

2.1 Introduction

Before presenting the studies that were conducted to meet the overall aim of the thesis, it is important to discuss the underlying methodology.

This chapter is divided into three parts. The first part considers frameworks and guidelines which have been proposed for directing the development and evaluation of health interventions. The frameworks adopted in the present thesis are then discussed, including the methods which were employed to meet their criteria. The chapter then discusses existing research paradigms, and justifies the adoption of the pragmatic approach to satisfy the overall aim. This is followed by a discussion of mixed methods in intervention development and evaluation, and a description of the mixed methods employed in the thesis. Finally, the importance of ‘patient and public involvement’ (PPI) is discussed.

2.2 Frameworks for developing and evaluating health interventions

The UK’s Medical Research Council (MRC) recommends that health interventions be built upon an applicable and clear theoretical framework (Craig et al., 2008). A prescriptive framework is indeed valuable as it imposes systematic requirements at each stage of the project (e.g. assessing acceptability, feasibility) which are conducive to producing a rigorously developed and evaluated intervention that is more likely to be successful. Further, the adoption of a framework facilitates comparisons between studies, given that the methodological steps of intervention development and evaluation are likely to be similar. Finally, stakeholders, including research funders, policy makers, and programme funders, will be able to see that the intervention has emerged from a well-planned, evidence-based process of development and evaluation.

Numerous frameworks and guidelines have been proposed to help direct researchers through the development and evaluation of health interventions, such as the revised MRC framework for the development and evaluation of complex interventions (Craig et al., 2008), the Intervention Mapping protocol (Eldredge, Parcel, Kok, & Gottlieb, 2011), the conceptual framework for planning intervention-related research (De Zoysa, Habicht,

Pelto, & Martines, 1998), and the PRECEDE-PROCEED model (Green & Kreuter, 2005).

The revised MRC framework for the development and evaluation of complex interventions (Craig et al., 2008) is a useful source for guidance regarding the development, piloting and feasibility, evaluation, reporting and implementation of a complex behavioural intervention. The process can be organised into four stages: 1) Development; 2) Feasibility/piloting; 3) Evaluation; and 4) Implementation. These phases do not have to be followed in a linear sequence; but each entails particular criteria that need to be satisfied.

The Intervention Mapping protocol (Eldredge et al., 2011) is a step-by-step protocol for the planning, development, implementation, and evaluation of a theory- and evidence-based health promotion intervention. There are six fundamental steps of the Intervention Mapping process, and each includes several tasks. The six steps are: 1) Conducting a needs assessment; 2) Creating matrices of change objectives for the intervention based on the determinants of behaviour and environmental conditions; 3) Selection of theory-based intervention methods and practical strategies; 4) Translating methods and strategies into an organized intervention; 5) Planning for the adoption, implementation, and sustainability of the intervention; and 6) Generating an evaluation plan. While the process is cumulative, it is also iterative, so researchers can move back and forth between steps.

The conceptual framework for planning intervention-related research (De Zoysa et al., 1998) is comprised of nine steps for guiding the development and evaluation of public health interventions: 1) Describing the problem; 2) Identifying risk factors; 3) Exploring the context and identifying the determinants; 4) Selecting or formulating possible interventions; 5) Testing interventions; 6) Formulating public health interventions; 7) Assessing the efficacy of public health interventions; 8) Assessing the effectiveness of public health interventions; 9) Monitoring the adequacy and impact of large-scale public health interventions. Again, the process is iterative and not all steps must be completed or follow sequence.

The PRECEDE-PROCEED model (Green & Kreuter, 2005) is used to guide the planning and evaluation of health behaviour change interventions. It consists of four planning phases, one implementation phase, and three evaluation phases. The PRECEDE phases

are comprised of the four planning phases, which include: 1) Social diagnosis; 2) Epidemiological, behavioural and environmental diagnosis; 3) Educational and ecological diagnosis; and 4) Administrative and policy diagnosis. The PROCEED phases follow, and are: 5) Implementation; 6) Process evaluation; 7) Impact evaluation; and 8) Outcome evaluation.

These frameworks and guidelines were interrogated and compared in order to identify the most suitable for the current thesis. The revised MRC framework for the development and evaluation of complex interventions (Craig et al., 2008) was selected as the overarching framework to guide the development and evaluation of an intervention targeting body image concerns among women treated for breast cancer. This framework was adopted as the MRC is a UK-based funding agency which supports health research conducted in hospitals and universities and is funded through the government's science and research budget. It was therefore in the interests of future applications for funding for continuing the evaluation of the proposed body image intervention that the revised MRC framework should be selected. However, it was also considered one of the strongest guidelines for intervention development and evaluation available, as it gives equal weighting to the development and evaluation process, while also providing beneficial questions for researchers to ask themselves throughout the whole process. Helpful examples of successfully developed and evaluated interventions which have employed a variety of designs and methods are also included in the guidance.

The revised MRC framework is employed extensively among multiple health disciplines, thus facilitating communication and learning between them (Campbell, Fitzpatrick, Haines, & Kinmonth, 2000; Craig et al., 2008). It has been adopted previously to guide the development and/or evaluation of many health interventions targeting psychosocial outcomes (e.g. Barley et al., 2012; Kirkevold, Bronken, Martinsen, & Kvigne, 2012), including those in the field of cancer (e.g. Cleary, McCarthy, & Hegarty, 2012), and those targeting body image specifically (e.g. Morgan, Lazarova, Schelhase, & Saeidi, 2014), which is indicative of a high level of usefulness.

The first step of intervention development within the revised MRC framework emphasises the importance of establishing a theoretical basis which indicates that an intervention will have its intended effect. Previous studies have supported such an approach, which suggests that theory-based interventions achieve a superior effect on

behaviour compared with interventions with no grounding in theory (Taylor, Conner, & Lawton, 2012; Webb, Joseph, Yardley, & Michie, 2010). However, the MRC Framework provides limited guidance on the methods to adopt for developing complex interventions (French et al., 2012). In contrast, the systematic Intervention Mapping protocol (Eldredge et al., 2011) presents a logical and more comprehensive approach to intervention development, detailing the processes involved. The focus of Intervention Mapping is to develop interventions which are based on both theory and evidence, and it can consequently tailor interventions to help meet the needs of specific populations (Munir, Kalawsky, Wallis, & Donaldson-Feilder, 2013). This protocol has been frequently adopted in the development of health interventions targeting psychosocial outcomes (e.g. Noordegraaf et al., 2012; Vissenberg et al., 2012), and within the area of cancer specifically (e.g. van Weert et al., 2008). In the present thesis, the Intervention Mapping protocol was consequently adopted alongside the MRC framework, whereby the stages of Intervention Mapping were followed in order to fulfil the criteria specified within the MRC framework. A similar adoption of these two approaches is evident in previous research (e.g. Taylor et al., 2013).

2.2.1 The revised MRC Framework for the Development and Evaluation of Complex Interventions to Improve Health

The framework for developing and evaluating complex interventions was originally developed by the UK Medical Research Council in 2000 (Medical Research Council, 2000) and was revised in 2008 (Craig et al., 2008). The four stages of the framework are displayed in Figure 2.1. While the arrows illustrate the connections between the stages, these will not always pursue a linear or even cyclical sequence (Campbell et al., 2007). Indeed, progression from the development of an intervention to its implementation may proceed in different ways. The next section briefly describes each of the four stages of the framework.

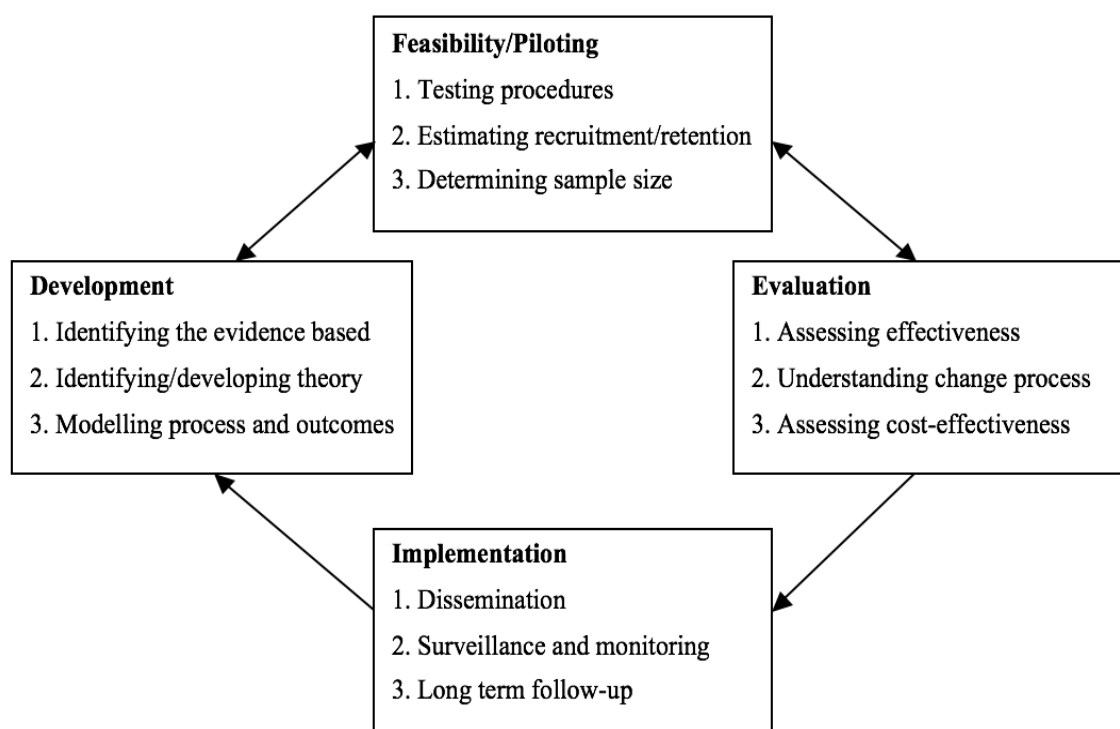


Figure 2.1 Components of the MRC framework for the development and evaluation of complex interventions (Craig et al., 2008). First produced by the British Medical Journal (2008), 337, 979-983. Reproduced with copyright permission from the BMJ Publishing Group.

2.2.1.1 Development of the intervention

Identifying the evidence base:

The first step in developing an intervention involves examining the existing evidence base, usually by conducting a systematic review. A systematic review ensures a transparent and rigorous process of searching for and appraising literature and consequently eliminating bias. In the case of the current thesis, a systematic review was conducted of interventions targeting the body image of both women in midlife treated for breast cancer, and women in midlife not treated for breast cancer. This allowed the identification of interventions which have been developed and evaluated among both groups of women and provided an opportunity for comparative study that took the methodological quality of each evaluative study into account.

Identifying/developing appropriate theory:

It is important to establish the relevant theory upon which the intervention will be based, as this is likely to lead to superior intervention effects compared with interventions that make less or no use of theory (Taylor et al., 2012; Webb et al., 2010). The key task of developing a theoretical understanding of the expected process of change can be executed by drawing on existing evidence and theory. This can be accompanied by new research if necessary; for example, by conducting interviews with stakeholders, such as patients targeted by the intervention, or health professionals involved in its delivery. This should be done regardless of whether the intervention to be evaluated is being developed or whether it is already developed.

Modelling process and outcomes:

Modelling the intervention before conducting a full-scale evaluation provides valuable information regarding the design of both the intervention and the evaluation. One approach for modelling includes a pre-trial economic evaluation, as this will reveal weaknesses and inform refinements, or may discover only small effects, suggesting that a full-scale evaluation is unwarranted (Claxton, Sculpher, & Drummond, 2002).

2.2.1.2 Assessing feasibility and piloting methods

This stage constitutes the pilot testing of intervention procedures for their acceptability, estimating the expected recruitment and retention rates of participants, and calculating suitable sample sizes. This important preparatory work is often omitted, and evaluations are therefore compromised by issues such as inadequate delivery of the intervention, and smaller effects than expected (Eldridge, Ashby, Feder, Rudnicka, & Ukoumunne, 2004). Such issues could be anticipated through piloting. While a pilot study does not have to be on the same scale as the planned evaluation, it should address the main uncertainties regarding aspects of the intervention which may have been identified during the development. Both quantitative and qualitative methods are likely to be employed during this stage; for example, to understand participants' experience of the intervention and to estimate retention rates. Indeed, several studies may be required to refine the design, before conducting a full-scale evaluation.

2.2.1.3 Evaluation of the intervention

Many different study designs are available for the evaluation of an intervention, including both experimental and non-experimental approaches. Different designs will be more appropriate for different questions and circumstances (McKee et al., 1999).

Assessing effectiveness:

In experimental designs, randomisation of participants to study conditions is recommended, given the robustness of this method in averting selection bias associated with individuals undergoing the intervention differing systematically from those who do not, and in ways which are likely to influence outcomes (Eccles, Grimshaw, Campbell, & Ramsay, 2003). There are alternative experimental designs which can be considered if an individually-randomised parallel group design is not suitable, including cluster-randomised trials, stepped wedge designs, preference trials and randomised consent designs, and N-of-1 designs (Craig et al., 2008). If an experimental approach is not feasible, it is important to consider a good alternative non-experimental approach, such as natural experiments, post-hoc adjustment, and case-control methods. It is important to think critically about the choice of suitable outcome measures in the evaluation, particularly regarding the most important primary outcomes, and secondary outcomes. The outcome measures should be suitable to the design of the evaluation, and the timing of change considered, as the length of follow-up must be determined based on understanding of the pattern of change.

Understanding processes:

It is valuable to conduct a process evaluation as this can reveal why an intervention worked and how it can be optimised, or why an intervention failed or had unexpected consequences (e.g. Roberts et al., 2004). A process evaluation that is nested within a trial can be used to evaluate fidelity and quality of implementation, explain causal mechanisms, and identify contextual aspects related to the variation in outcomes (Oakley, Strange, Bonell, Allen, & Stephenson, 2006). It is important that process evaluations are conducted to the same methodological standard and reported to the same thorough extent as outcome evaluations.

Assessing cost-effectiveness:

If possible, an economic evaluation should be conducted, as findings will inform the choices of decision-makers. Preferably, economic considerations should be fully considered in the design of the evaluation, in order to ensure that the cost of the evaluative study is warranted through the possible benefit of the generated evidence, suitable outcomes are measured, and there is enough power for the study to identify economically important differences (Torgerson & Campbell, 2000).

2.2.1.4 Implementation and beyond

While publication of the findings is crucial, there are additional components of an effective implementation strategy.

Getting evidence into practice:

Findings must be accessible and convincing to decision-makers, if they are to have any chance of being translated into routine practice or policy. Indeed, passive strategies, such as only presenting findings at conferences, are ineffective at converting evidence into practice (Oxman, Thomson, Davis, & Haynes, 1995). Information therefore needs to be available in accessible formats and disseminated actively and widely (Oxman et al., 1995). Successful implementation is often dependent upon altering the behaviour of a wide range of people. This necessitates scientific understanding concerning the behaviours which need to change, the influences maintaining current behaviour, and the obstructions and facilitators to change. Additionally, expertise is needed to develop strategies to attain this change (Michie et al., 2005).

Surveillance, monitoring and long term outcomes:

The experimental study evaluating the intervention is unlikely to provide a full generalizable and long-term account of the effectiveness of the intervention, as the majority of trials are not powered substantially to identify rare adverse events (Collins & MacMahon, 2001), and it is likely that even pragmatic studies will take place in a population and a series of settings that are somewhat self-selected. Once the intervention becomes implemented on a wider scale, effects are likely to be smaller, and unexpected consequences may begin to arise. Long-term follow-up may therefore be needed to ascertain whether short-term changes in fact persist, and whether the benefits inferred from the evaluative study do occur in real life. Although uncommon, long-term follow-up of interventions can be highly informative and are consequently encouraged.

2.2.1.5 Elements of the MRC framework completed to develop the current intervention

The studies conducted in this thesis as outlined in Chapters 3, 4, and 5 complete the Development stage of the MRC framework with regard to developing a body image intervention for women treated for breast cancer. This comprised establishing a theoretical basis to increase the likelihood of the intervention having the intended effect, and included the identification of the targets of the intervention and the underlying mechanisms by which it is likely to influence the outcome of interest. This consequently informed the adaptation of an existing evidence-based intervention. Chapter 6 outlines preliminary work in the Feasibility/Piloting stage, including an evaluation of the acceptability of the proposed intervention. Given the thorough evidence-based process adopted and the time constraints of the PhD, completion of the remainder of the Feasibility/Piloting stage, and the Evaluation and Implementation stages of the MRC framework were beyond the scope of this thesis and will be carried out in future post-doctoral studies.

2.2.2 The Intervention Mapping protocol and the steps completed to develop the current intervention

A description of the six steps of the Intervention Mapping protocol (Eldredge et al., 2011) is included below. The studies in this thesis addressed the criteria and tasks outlined in Steps 1 to 4 of the protocol. This completed the development of the programme, but due to the rigorous methodology adopted and time limitations, the research ended before Steps 5 and 6 (the establishment of an implementation plan, followed by an evaluation plan). The studies within the PhD therefore focussed upon building evidence to inform the development of the intervention. This was achieved by conducting a needs assessment, creating matrices of change objectives, and identifying theory-based methods and practical strategies to alter the health behaviour of the targeted group. The ways in which the first four steps of Intervention Mapping were followed in order to develop the intervention in the present thesis are now described.

	Step 1 Needs assessment	<ul style="list-style-type: none"> • Establish a participatory planning group • Conduct the needs assessment • Assess community capacity • Specify programme goals for health and quality of life
	Step 2 Matrices	<ul style="list-style-type: none"> • State outcomes for behaviour and environmental change • State performance objectives • Select important and changeable determinants • Create a matrix of change objectives
	Step 3 Theory based intervention methods and practical applications	<ul style="list-style-type: none"> • Generate programme ideas with the planning group • Identify theoretical methods • Choose programme methods • Select or design practical applications • Ensure that applications address change objectives
	Step 4 Intervention programme	<ul style="list-style-type: none"> • Consult intended participants and implementers • Create programme themes, scope, sequence, and material list • Prepare design documents • Review available programme material • Draft programme material and protocols • Pretest programme material and protocols • Produce materials and protocols
	Step 5 Adoption and implementation	<ul style="list-style-type: none"> • Identify potential adopters and implementers • Re-evaluate the planning group • State programme use outcomes and performance objectives • Specify determinants for adoption and implementation • Create a matrix of change objectives • Select methods and practical applications • Design intervention for adoption and implementation
	Step 6 Evaluation plan	<ul style="list-style-type: none"> • Review the programme logic model • Write effective evaluation questions • Write evaluation questions for changes in the determinants • Write process evaluation questions • Develop indicators and measures • Specify evaluation design

Figure 2.2 The Intervention Mapping protocol: overview of the six steps and corresponding tasks (Eldredge et al., 2011). First produced by Eldredge, Parcel, Kok, and Gottlieb (2011). Planning Health Promotion Programs: An Intervention Mapping Approach (3rd ed.). Reproduced with copyright permission from Wiley.

2.2.2.1 Step 1: Needs assessment

Step 1 takes place before the intervention is planned. The researcher must assess the health issue, its associated behaviour and environmental conditions, and their related determinants for the at-risk group. The evaluation includes two components. The first is a scientific, epidemiologic, behavioural, and social analysis of the at-risk population and its problems, while the second involves beginning to understand the character of the population, its members, and its strengths. The product of this first step is an account of the health issue, its effect on quality of life, and behavioural and environmental causes and their determinants.

Chapter 1 describes research indicating the increasing prevalence of body image concerns among women in midlife, including those treated for breast cancer, and research recognising the adverse consequences of these concerns upon the psychological and physical health of both groups of women. Additionally, the online survey in Chapter 4 found 83.9% of women treated for breast cancer perceived a body image intervention to be beneficial. Collectively, these findings emphasise the need for the development of body image interventions for women treated for breast cancer. Further, Chapter 1 reviewed literature to identify theoretical determinants associated with body image concerns among women in midlife, while Chapter 4's online survey also examined associated risk factors for women treated for breast cancer, thus together allowing the identification of determinants for body image concerns among this group. Finally, the systematic review in Chapter 3 identified existing interventions which have effectively targeted body image concerns among women in midlife, including those treated for breast cancer, thus allowing their successful aspects to be drawn upon for intervention development.

2.2.2.2 Step 2: Identification of outcomes, performance objectives, and change objectives.

Step 2 provides the basis for the intervention by stipulating in detail the anticipated outcomes of the intervention. While there may be an overall desired outcome of the intervention (e.g. reduced body dissatisfaction), a subset of outcomes which would be anticipated in order to satisfy the overall outcome are also defined (e.g. reducing internalisation of the “youthful thin” ideal). For each of these desired outcomes, a group of performance objectives is identified (e.g. increase knowledge of the costs and

consequences of pursuing the youthful thin ideal). Performance objectives help to refine and specify what intervention members must do to meet the desired outcome. The next stage involves specifying the changes that would be expected in the theoretical determinants of the experience and behaviour. This allows the identification of the specific psychological constructs that need to be altered (change objectives) in order to achieve the desired effect on the performance objective, and consequently the overall intervention outcome. The product of this stage is a matrix of change objectives, which includes performance objectives and the determinants which will be targeted in the intervention.

In the current thesis, the desired intervention outcomes were drawn from the needs assessment, whereby the primary outcome of the intervention was to improve the body image of women treated for breast cancer. Achieving this outcome involved the identification of modifiable influences, which would form targets for intervention. These influences were identified from existing literature among women in midlife in Chapter 1, and were confirmed as relevant to women treated for breast cancer in Chapter 4, which presents an online survey testing a sociocultural model of body image among both groups of women. Desired intervention outcomes (e.g. reducing internalisation of the youthful thin ideal) were therefore defined in order to capture these identified influences, and for each desired outcome several performance objectives were stated (e.g. increase knowledge of the costs and consequences of pursuing the youthful thin ideal). Each performance objective was specified and validated through an iterative process of examining both the relevant literature (Chapter 1) and the influences affecting body image in midlife (Chapter 4). Subsequently, the objectives of the intervention were defined in relation to the changes that needed to be observed in the theoretical determinants of the behaviour. This allowed the identification of the psychological constructs that required change in order to achieve the sought effects on the performance objectives and consequently the programme outcome. Modifiable determinants were categorised as personal (factors within the individual under their direct control) and external (factors outside the individual that can directly influence the health behaviour or environmental conditions) influences on body image among women treated for breast cancer (Chapter 5). Finally, performance objectives were crossed with determinants to create a matrix of change detailing what would be targeted in the intervention (Chapter 5).

2.2.2.3 Step 3: Selecting theory-based methods and practical strategies

Upon development of the matrix of change objectives, Step 3 involves the identification of suitable theoretical methods that can influence changes in determinants, and for these to be operationalised into practical strategies implemented in the intervention. An intervention method is a defined process by which theories argue, and empirical research provides evidence, for the way in which change may come about in the behaviour of individuals or groups. While a method is a theory-based procedure for influencing behaviour or environmental conditions, a strategy is the means by which this is operationalised, organised, and delivered.

At this point in the PhD, findings from the systematic review (Chapter 3) and the online survey (Chapter 4) were brought together to inform the decision to adapt an existing body image intervention (McLean et al., 2011), which was originally found to be effective in women in midlife not treated for breast cancer, for use among women treated for breast cancer (see Chapter 5 for details of the process informing this decision and the matrix of change objectives).

The existing intervention (McLean et al., 2011) targets the determinants identified in the previous step, and includes practical techniques. These techniques address the previously identified change objectives associated with each determinant. For example, various evidence-based practical strategies are used to pursue the change objective “Reduce internalisation of the youthful-thin idea”, including a group discussion to examine whether the premise that one must look like the thin ideal to be attractive, happy, and successful, is true. Participants consider this in relation to women they enjoy spending time with, and successful women with whom they are familiar (e.g. who work in business, politics). They are encouraged to reflect upon the attributes that make these women attractive, to identify their most important qualities, and to consider their own valuable qualities.

2.2.2.4 Step 4: Creating the programme

Step 4 involves a description of the scope and order of the intervention components, including mode of delivery, and completed programme materials and protocols. It also entails pretesting and pilot testing the intervention strategies and materials with proposed recipients and implementers to ensure that the intervention is acceptable and feasible.

Specific direction is also provided for communicating programme intent to programme producers (e.g. writers, graphic designers).

In the present thesis, the existing intervention and associated manual was adapted for use with women treated for breast cancer (see Chapter 5). A qualitative acceptability study (Chapter 6) was conducted with intended implementers (health professionals) and recipients (women treated for breast cancer) to explore their views of the programme regarding its material content, strategies, and format, and to recommend changes to improve the intervention. The PhD came to an end at this stage of the protocol; the final two steps, which are described below, will be pursued in post-doctoral work.

2.2.2.5 Step 5: Adoption and implementation

Step 5 focusses on adoption and implementation of the programme, including consideration of programme sustainability. Deliberations regarding programme implementation begin as early as Step 1 during the needs assessment, but they are reconsidered in this step. The current step entails the process of matrix development similar to that of Step 2; however, matrices include adoption and implementation of performance objectives as opposed to personal and external determinants. The joining of each performance objective with a determinant produces a change objective to promote adoption and use of the programme. Methods and strategies are subsequently coordinated to these objectives to create theory-based plans for adoption and implementation. The product of this step is a comprehensive proposal for accomplishing adoption and implementation of the programme by influencing the behaviour of individuals or groups who will decide whether to adopt and use it.

2.2.2.6 Step 6: Evaluation planning

Step 6 involves the completion of an evaluation plan that begins in Step 1 during the needs assessment, but is developed throughout each step. Researchers make choices regarding change objectives, methods, strategies, and implementation during the whole process; however, these decisions, though informed by theory and empirical evidence, may not be the best. Researchers can determine whether they were correct at each step of Intervention Mapping through effect and process evaluation. To assess the effects of an intervention, the change in health and quality-of-life problems, behaviour, and determinants of performance objectives, must be analysed, having been defined in a

measurable manner in the preceding steps. The key of Step 6 is to understand the reasons for the effects that were achieved, irrespective of whether these were positive, negative, mixed, or completely absent. Researchers are interested in the process and changes of the intermediate variables. The product of the current step is a strategy for answering questions, such as ‘were determinants well specified?’ and ‘was the implementation complete and appropriate?’.

2.3 Mixed methods in health research

Historically, quantitative methodology was the sole approach adopted in health research, until qualitative methods were welcomed twenty years ago (Pope & Mays, 1995). Subsequently, researchers began to recognise the value of combining these two methods (Barbour, 1999), and the mixed-methods approach has consequently become increasingly popular in health research, being used to explore health issues, to develop instruments to assess health outcomes, and to develop and evaluate interventions (O’Cathain, 2009). The flexibility associated with the mixed-methods approach is well suited to the field of health research (Dures, Rumsey, Morris, & Gleeson, 2011). Indeed, research is often conducted with clinical groups in busy real-world settings (e.g. hospitals), and is interested in answering questions based upon the real-world experiences of patients, service users, and health professionals (Dures et al., 2011). The research is tailored towards the needs of stakeholders as opposed to academic peers, and is focussed on solving complex problems in limited time, and using minimal cost, due to the restraints of project funders (Dures et al., 2011).

Within health research, the adoption of mixed methods has helped to develop and evaluate interventions, including in the field of cancer. For example, a qualitative study exploring the quality of life of men treated with radiotherapy for prostate or bladder cancer (Faithfull, 1995) informed the subsequent development and evaluation of a nurse-led educational intervention for men with prostate or bladder cancer undergoing pelvic radiotherapy (Faithfull, Corner, Meyer, Huddart, & Dearnaley, 2001). Further, frameworks which have been recommended to guide the development and evaluation of health interventions, such as the MRC framework (Craig et al., 2008) and the Intervention Mapping protocol (Eldredge et al., 2011), are comprised of different stages, each one encouraging the adoption of either a quantitative research approach, a qualitative research approach, or a combination of both (see 2.2).

Before discussing the benefits of using mixed methods in the development and evaluation of health interventions, and describing their use in the present thesis, it is important to examine research paradigms with respect to their ontological, epistemological, and methodological stances.

2.3.1 Research paradigms

Paradigms have been described as “systems of beliefs and practices that influence how researchers select both the questions they study and methods that they use to study them” (Morgan, 2007, p. 49). Traditionally, quantitative and qualitative research methods were believed to represent different paradigms, which were based upon different assumptions concerning ontology (the nature of reality) and epistemology (methods of understanding; Dures et al., 2011).

Researchers working within a quantitative framework possessed assumptions consistent with a positivist epistemological stance. They believed reality to be “universal, objective, and quantifiable” (Dures et al., 2011, p. 2) and that social observations should therefore be treated in the same objective manner that physical phenomena are treated by physical scientists (Johnson & Onwuegbuzie, 2004). Positivist purists assume the researcher and the studied phenomenon to be separate from each another, with the researcher therefore able to study the phenomenon without influencing it or being influenced (Guba & Lincoln, 1994). In this respect, the positivist researcher must therefore eradicate their biases, remain emotionally unattached, and seek to identify scientific laws (Hammersley, 1992; Johnson & Onwuegbuzie, 2004). According to this school of thought, the causes of outcomes can be identified reliably and validly, and it is possible to make context- and time- free generalisations (Nagel, 1989).

It was claimed in criticism of this school of thought that the ontological assumptions were based on a naïve realism whereby it is believed possible to capture an ultimate reality using scientific observation, just as a picture is “captured” by a camera (Lincoln & Guba, 2003). This led to the emergence of a critical approach to positivism which became identified as post-positivism (Lincoln & Guba, 2003). This paradigm does not deviate extensively from positivism, as it continues to assume the existence of an ultimate reality, yet believes its discovery not to be as straightforward as originally proposed (O'Byrne, 2007). Indeed, post-positivists argue that claims concerning reality require critical examination if reality is to be captured as closely as possible. They

therefore believe that hypotheses cannot be verified to identify scientific laws, but instead that null hypotheses can be rejected. Their goal is consequently “not to prove knowledge but, rather, to produce knowledge that can serve as a building block until it is disproved” (O’Byrne, 2007, p. 1385). The majority of today’s quantitative researchers refer to themselves as post-positivists (Lincoln & Guba, 2003).

On the other hand, researchers working within a qualitative framework rejected positivism, instead adopting a constructivist/interpretivist epistemological stance (Guba & Lincoln, 1989; Johnson & Onwuegbuzie, 2004). They contended that it is impossible to separate the known and the knower, as the subjective knower is believed to be the sole source of reality (Guba, 1990). Consequently, constructivist/interpretivist purists believe that reality is socially constructed and therefore argue for the existence of multiple-constructed realities (Dures et al., 2011). The researcher and the phenomenon being investigated are believed to be interactively linked, whereby the findings “are literally created as the investigation proceeds” (Guba & Lincoln, 1994, p. 111). In view of this, these researchers adopt an inductive approach to data analysis and seek to identify cultural patterns (Hammersley, 1992). It is considered impossible to fully distinguish causes and effects and to make context- and time- free generalisations (Johnson & Onwuegbuzie, 2004).

The contrasting views of these two schools of thought led to the ‘incompatibility thesis’ (Howe, 1988), which postulates that quantitative and qualitative paradigms, including their research methods, cannot be combined. However, Patton (1990) argued for a “paradigm of choices”, where he postulated that paradigms should not be understood as inflexible and researchers should not have to decide between them. He encouraged the use of multiple methods be employed wherever possible, arguing that “the notion of competing paradigms incorrectly implies only two research options; [and] that there are no logical reasons why qualitative and quantitative approaches cannot be used together” (p. 117; Patton, 1990). Rather, mixed methods are advocated as an expansive approach to research, whereby the objective is to draw from the strengths of both quantitative and qualitative approaches in one research study (Johnson & Onwuegbuzie, 2004), helping to resolve the division between the two research approaches (Onwuegbuzie & Leech, 2005). Indeed, recognition of the strengths and limitations of quantitative and qualitative research (see Table 2.1) enables researchers to mix approaches in ways that are likely to result in complementary strengths and non-overlapping limitations, in accordance with

the ‘fundamental principle of mixed research’ (Johnson & Turner, 2003). This principle suggests that the consequences of mixing methods will be superior to those of studies which employ only one method (Johnson & Onwuegbuzie, 2004). Accordingly, mixed methods have been conceptualised as a third paradigm that are believed to “provide the most informative, complete, balanced, and useful research results” (Johnson, Onwuegbuzie, & Turner, 2007, p. 129).

Table 2.1 Table displaying the strengths and limitations of quantitative and qualitative research, from Johnson and Onwuegbuzie (2004). Adapted with copyright permission from SAGE Publications.

Quantitative Research	Qualitative Research
Strengths	
<ul style="list-style-type: none"> • Can test previously proposed theories and hypotheses • Can generalise its findings when based on random samples of large size • Can gather data which allows quantitative predictions • Can eradicate the influence of potentially confounding variables, thus facilitating a more credible assessment of cause and effect • Its data collection methods and analysis are less time consuming • Can be perceived as more credible among politicians and funders of research 	<ul style="list-style-type: none"> • Is based on participants' own categories of meaning and their personal experiences • Its value for examining a small number of participants in depth • Can describe complex phenomena in rich detail as they are positioned in local contexts • Can inductively generate explanatory theories • Can explore how participants interpret constructs • Can conduct cross-case comparisons and analysis • Can be responsive to stakeholders' needs
Limitations	
<ul style="list-style-type: none"> • The theories tested and quantitative measures used may not actually reflect participants' true thoughts and experiences concerning the research matter • The focus on theory or hypothesis testing instead of theory or hypothesis generation may lead the researcher to miss out on interesting phenomena • Its findings may be too general for application to particular contexts and situations 	<ul style="list-style-type: none"> • The difficulty associated with testing theories and hypotheses • The difficulty associated with making quantitative predictions from the findings • Can take longer to collect and analyse data • The likelihood of greater influence of the researcher's biases upon the findings • Its findings may be non-generalizable • Can be perceived as less credible among commissioners of programmes

The planning and execution of mixed-methods research is typically based upon the philosophical framework of pragmatism (Tashakkori & Teddlie, 2003). Pragmatists are not grounded in any one system of reality (Creswell, 2013), and consequently do not believe that practical consequences are essential elements of truth and meaning, but that truth and meaning are temporary and subject to change (Dures et al., 2011). They believe that there are both singular and multiple realities to be investigated, and are concerned with solving problems in the “real world” (Creswell & Plano Clark, 2011). Pragmatic researchers are not bound by the constraints prescribed by the “forced choice dichotomy between postpositivism and constructivism” (Creswell & Plano Clark, 2007, p. 27). Instead, the pragmatic approach is focussed on understanding the “research problem” (Creswell, 2013) and the consequences of the research, and methods are therefore selected in the light of their ability to provide insights into the overall research question, rather than satisfying the philosophical assumptions of other paradigms (Creswell & Plano Clark, 2011; Tashakkori & Teddlie, 2003).

Nevertheless, like the exclusive use of quantitative or qualitative methods, the mixed-methods approach is also associated with strengths and limitations (see Table 2.2), which can help researchers decide whether to adopt a mixed-methods approach (Johnson & Onwuegbuzie, 2004). Even so, the adoption of combined quantitative and qualitative approaches can be particularly helpful in the development and evaluation of complex psychosocial health interventions, which often comprise psychological, behavioural, or social processes that can be challenging to develop and examine using quantitative approaches on their own (Campbell et al., 2000).

Table 2.2 Table displaying the strengths and limitations of the mixed-methods approach, from Johnson and Onwuegbuzie (2004). Adapted with copyright permission from SAGE Publications.

The Mixed Methods Approach	
Strengths	Limitations
<ul style="list-style-type: none"> • Words can add meaning to numbers • Numbers can add precision to words • It is possible to generate and test a grounded theory • A wider range of research questions can be answered as the researcher is not restricted to a single approach • The strengths of one research method can be used to overcome the weaknesses in another, by employing both in a study • The convergence and confirmation of findings can provide stronger evidence for a conclusion • Can provide insights which might be missed when a single method is employed alone • Can increase the generalisability of the findings • Can produce more comprehensive knowledge which is needed to inform theory and practice 	<ul style="list-style-type: none"> • The researcher is required to learn about multiple methods and recognise how to mix them suitably • Can be challenging for one researcher alone to conduct both quantitative and qualitative research, particularly when two approaches or more are employed concurrently • Can be more expensive and time consuming • Methodological purists believe that research should be conducted within either a quantitative or qualitative paradigm • Research methodologists still need to work out several details of the mixed methods approach (e.g. issues associated with mixing paradigms, the qualitative analysis of quantitative data, the interpretation of conflicting findings)

2.3.2 Mixed methods in health research: the development and evaluation of interventions

Complications are often encountered in the evaluation of interventions because of their insufficient development. This highlights the importance of adopting a rigorous and iterative phased approach that joins quantitative and qualitative methods during the progression from intervention development to evaluation (Campbell et al., 2000). Indeed, the use of mixed methods is recommended in guidelines for the development and evaluation of interventions, including the currently adopted MRC framework (Craig et al., 2008) and Intervention Mapping protocol (Eldredge et al., 2011). The different methods employed to meet the criteria in each stage of these frameworks have already been described (2.2). The benefits of using mixed methods during intervention development and evaluation will now be discussed. These were part of the rationale for adopting mixed methods in the current thesis.

Before conducting a large and expensive randomised controlled trial of the intervention, it must be developed to the extent that it can be anticipated to have a valuable effect (Campbell et al., 2000). The combination of various methods can be employed to inform the development of the intervention. A systematic literature review facilitates identification of similar interventions in the area and highlights any gaps in existing interventions which need to be filled by the new intervention (Campbell et al., 2000). The study of existing evidence and theory can help to develop a theoretical understanding of the probable process of change, and can consequently inform the components of the intervention. This can be complemented by the adoption of quantitative and qualitative methods (e.g. surveys and focus groups with stakeholders), to further explore the health issues to be addressed by the intervention (Lewin, Glenton, & Oxman, 2009).

Once developed, it is important to verify that the intervention is the best to evaluate. The intervention must meet the needs of patients, and the adoption of qualitative methods (e.g. interviews, focus groups) with potential patients and health professionals who will deliver the intervention can explore its acceptability, thus ensuring that the intervention is optimised (e.g. by refining intervention components) before the large-scale evaluation trial (Boeije, Drabble, & O’Cathain, 2015). The use of mixed methods in the feasibility and piloting stage can be more productive than the use of quantitative methods alone.

Indeed, their adoption can inform the selection of outcomes and measures, and improve the conduct and design of the later randomised controlled trial, in various important aspects (e.g. recruitment and retention, ethical conduct; O’Cathain et al., 2015). For example, recruitment and retention during trials can be challenging and statistical power can be low. While quantitative methods can describe recruitment and retention rates, the use of qualitative methods can provide greater insight into this aspect, which will benefit the design and conduct of the trial (e.g. Donovan et al., 2002). This can be achieved by asking participants and recruiters questions, such as how recruitment practices can be amended to increase rates of recruitment; whether participants are willing to be randomised; and how trial procedures could be improved to increase rates of retention (O’Cathain et al., 2015).

Moving on to evaluation, while a randomised controlled trial might constitute the most robust approach by which to examine whether an intervention is effective, the use of this quantitative method alone cannot address a number of equally critical questions which will improve understanding (O’Cathain, Thomas, Drabble, Rudolph, & Hewison, 2013). Indeed, the MRC encourage the concurrent use of quantitative and qualitative methods within a full trial (Moore et al., 2015). Additionally, there have been arguments to move from a narrow focus on the intervention to a broader consideration of the whole area of healthcare, by taking into account stakeholders, for example, patients, health professionals, policy makers, and programme funders (Barbour, 1999; Popay & Williams, 1998). In order for stakeholders to implement findings from effective interventions in to the real world, information is needed to answer questions concerning how and why interventions work, and how to optimise them. Through a process evaluation, both quantitative and qualitative methods can be employed to understand aspects of the intervention which are necessary for effectiveness (mechanisms of action) and the relevance of the context within which the intervention was evaluated (Newnham & Page, 2010). In a similar respect, the use of qualitative and quantitative methods can also help to address questions concerning why interventions are not found to be effective, by examining whether the delivery of interventions was as intended (fidelity) or whether other obstacles impeded successful implementation of the intervention (Moore et al., 2015).

2.3.3 The use of mixed methods in this research

The discussed benefits of employing both quantitative and qualitative methods in the development and evaluation of interventions indicate that the mixed-methods approach sits well within the adopted multi-phase MRC framework (Craig et al., 2008). The current research consequently adopted a mixed methods multi-phase design. This provides an overarching framework within which concurrent components (qualitative and quantitative studies occur close in time, but are not integrated until the main interpretation of findings) and sequential components (a study employing one approach is conducted first, and its findings inform the next study employing the other approach) are combined over a period of time in a project comprising several phases (Creswell & Plano Clark, 2011). Indeed, the multi-phase design is a step-by-step progression of related quantitative and qualitative studies which are sequentially aligned and build upon what was learned before. This design is therefore appropriate for answering a set of incremental research questions (Creswell & Plano Clark, 2011). The multi-phase design was considered suitable for the current thesis, since the overarching aim of developing an intervention to alleviate body image concerns among women treated for breast cancer was broken down into a set of research questions. Indeed, the research followed the phases of the MRC framework and was consequently comprised of separate quantitative and qualitative studies, each with their own research questions, yet informing one another and contributing towards the overall aim of the thesis.

It is important to note that the temporal relation between the activities informing the development and evaluation of the intervention is not linear, but cyclical and interactive. Indeed, while Study One (Chapter 3) and Study Two (Chapter 4) were conducted separately within the Development phase of the MRC framework, their findings were concurrently combined to inform the selection and adaptation of an existing intervention. Specifically, Study One comprised a systematic review of interventions targeting the body image of women in midlife, including both women treated, and not treated, for breast cancer. Quantitative evaluative findings were synthesised in the narrative review. Quantitative methods were employed in Study Two, whereby a quantitative survey was administered to women treated, and not treated, for breast cancer, in order to test and compare an established sociocultural model of body image between the two groups. Findings from both Study One and Study Two then informed the decision-making process for adapting an existing evidence-based body image intervention originally

designed for women in midlife for use among women treated for breast cancer (Chapter 5). Study Three (Chapter 6) adopted qualitative methods, whereby focus group and interviews were conducted with women treated for breast cancer and health professionals to explore their acceptability of the adapted intervention. The methodology employed in each study is described and justified in greater detail in the corresponding chapter. The mixed-methods multi-phase design adopted in the thesis is outlined in Figure 2.3.

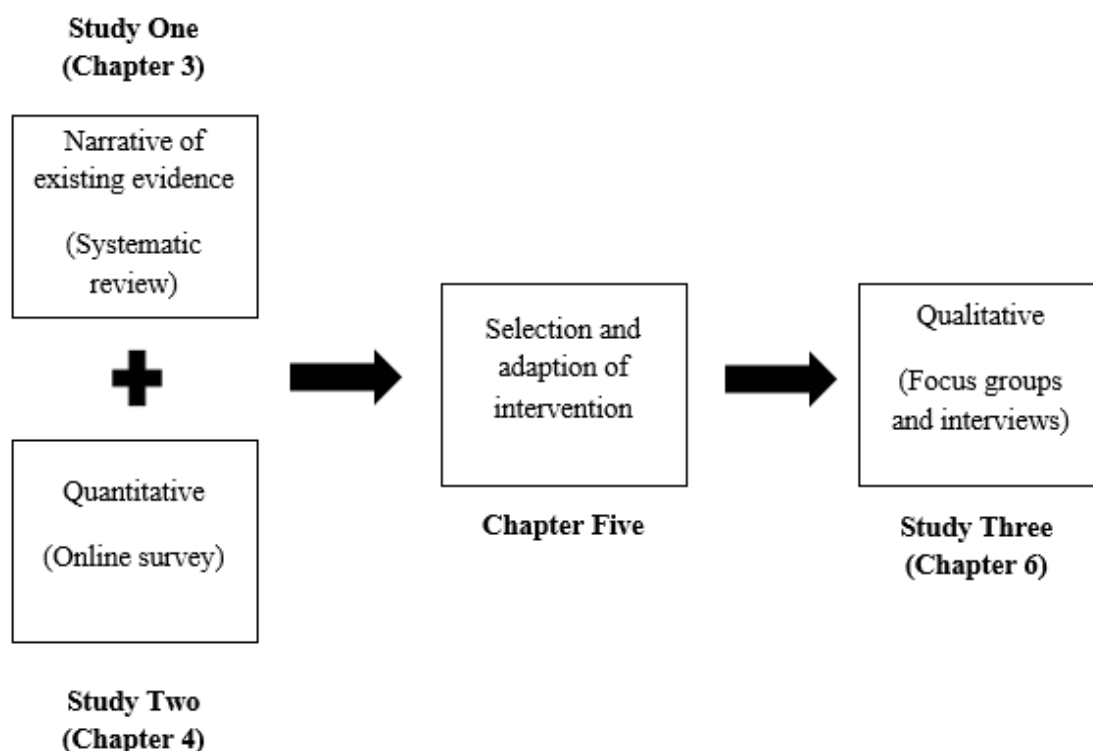


Figure 2.3 The mixed-methods multi-phase design adopted in this thesis

2.4 Patient and public involvement in research

For over a decade, the UK's government has favoured giving service-users a greater role in research informing the development and delivery of health services (Department of Health, 2010a). Referred to as 'patient and public involvement' (PPI), there have been several policy initiatives for encouraging the public to play a more important role in the design of NHS services, the aim being to make them more appropriate to users' needs (Department of Health, 2005, 2010b). The role of PPI has been particularly emphasised within cancer care services. Indeed, the 2007 Cancer Reform Strategy stated that "patients, local voluntary service providers, alternative providers and other stakeholders should be involved in influencing the way in which services develop" (Department of

Health, 2007, p. 111). While this influence might be perceived as involving participants in a research study which will inform the development of a service, PPI actually implies a level of involvement wherein patients and the public are part of the research process itself. This makes research more patient-centred while improving the quality and pertinence of the research (Entwistle, Renfrew, Yearley, Forrester, & Lamont, 1998).

Different stages of research can be benefited by PPI (Brett et al., 2014). At the beginning, it can help to identify topics of relevance for the research agenda which may not be clear to the researchers. The engagement of PPI can also be beneficial in refining the design of the study; for example, by offering guidance concerning research methods, and by reviewing research materials and instruments (e.g. participant information sheets, interview schedules). Indeed, a closed study evaluation found that the majority of studies which involved patients and the public in the design of their questionnaires resulted in improvements in the quality of information provided to patients and increased recruitment rates (Johns, Crossfield, & Whibley, 2015). Relatedly, PPI can help with recruitment by advertising the study. At the analysis and write-up stages, PPI can help ensure that themes which have arisen from qualitative data are understood from a user's point of view. Finally, the engagement of patients and the public can be advantageous at the final stage of research, when disseminating and implementing research findings.

The current thesis endeavoured to engage PPI at as many points of the research process as possible. The specific ways in which this was achieved are discussed in the relevant chapters.

Chapter 3: A systematic review of research evaluating body image interventions for women in midlife

3.1 Introduction

As previously noted, evidence to date indicates that body image concerns are prevalent among both midlife women in the general population (Gagne et al., 2012) and women treated for breast cancer (Falk Dahl et al., 2010). These two groups are not mutually exclusive, as the majority of women treated for breast cancer are in midlife. Nevertheless, research examining body image among this group has tended to focus on treatment-related appearance changes such as hair loss and scarring (e.g. Nozawa et al., 2013). This research has rarely considered the presence of pre-existing body image concerns before diagnosis and treatment, or non-treatment related aspects of body image, such as ageing-related appearance changes (Lewis & Cachelin, 2001).

This suggests that the narrow-scoped field of body image within breast cancer might benefit from drawing upon knowledge of midlife women's body image in general, particularly by consulting evidence-based interventions that have been found to improve the body image of women in midlife. Indeed, these effective interventions that have been evaluated in methodologically rigorous studies could be used to inform the development of a body image intervention for women treated for breast cancer, consequently acknowledging and accounting for both pre-existing and non-treatment related body image concerns (e.g. regarding ageing-related appearance changes) and treatment-induced body image concerns.

However, it was important to establish first the evidence base for interventions targeting body image for both groups of women, in order to facilitate the identification of effective interventions and their associated characteristics in terms of approach, format, dose and intensity, and facilitator. These intervention attributes were examined across studies within each group of women separately, and also between the groups of women, in order to identify commonalities between interventions and consequently those aspects of effective interventions which need to be considered when designing an intervention for women treated for breast cancer.

The initial Development phase of the MRC framework (Craig et al., 2008) recommends conducting a systematic review to identify the evidence base. A systematic review of psychosocial interventions targeting the body image of women in midlife treated for breast cancer, and women in midlife not treated for breast cancer, was therefore conducted in the current study. This provided valuable information that was used for the modelling of processes and outcomes, which is also outlined in this phase. This study also constituted Step 1 (Needs Assessment) and Step 3 (Selecting Theory-Based Intervention Methods and Practical Applications) of Intervention Mapping (Eldredge et al., 2011).

The adoption of a systematic review methodology as opposed to a narrative review was preferred. This was decided following comparisons of the methodologies. A narrative review does not systematically search the literature, and can consequently induce an element of selection bias (Cook, Mulrow, & Haynes, 1997). In contrast, a systematic review attempts to minimize bias through rigorous methods, including the development of an explicit detailed plan and search strategy a priori, a criterion-based selection of relevant literature, a critical appraisal of validity, and the generation of evidence-based conclusions (Cook et al., 1997). The adoption a rigorous approach was particularly important given that interventions for the two target groups were being compared. This systematic review was conducted in accordance with the steps recommended by the Cochrane Handbook for Systematic Reviews of Interventions (Higgins & Green, 2011). Further, in order to determine the methodological rigour of evaluative studies, and consequently the degree of confidence to be placed in their findings, the methodological quality of the final included studies was evaluated using the Cochrane Collaboration tool for assessing risk of bias (Higgins & Green, 2011).

3.1.1 Aims

- To systematically review the evidence for the effectiveness of psychosocial interventions that aim to improve the body image of women of at least 35 years of age who have been treated for breast cancer, in order to identify features of effective interventions.
- To systematically review the evidence for the effectiveness of psychosocial interventions that aim to improve the body image of women of at least 35 years of age who have not been treated for breast cancer, with the aim of applying the

findings of these interventions in the development of an intervention which targets body image in women treated for breast cancer.

3.1.2 Research questions

- What psychosocial body image interventions have been developed and evaluated among women of at least 35 years of age who have been treated for breast cancer, and women who have not?
- What are the features of effective psychosocial interventions and are there commonalities between the effective interventions that target these groups of women?

3.2 Methods

3.2.1 Search strategy

3.2.1.1 Databases

Searches were conducted using the following online databases: PsycINFO (via EBSCO), MEDLINE (via EBSCO), Cumulative Index to Nursing and Allied Health Literature (CINAHL; (via EBSCO), The Allied and Complementary Medicine Database (AMED; (via EBSCO), Applied Social Sciences Index and Abstracts (ASSIA; via Proquest), British Nursing Index (via Proquest), EMBASE, Science Direct, Social Sciences Citation Index and Science Citation Index (SSCI and SCI), PubMed, Cochrane Library. Five further databases were searched to identify grey literature: Grey literature search (via Web of Knowledge), Zetoc, EThOS, National Research Register (NRR), UK Clinical Research Network. Furthermore, the references of included articles were screened manually for additional studies. Searches were conducted in January 2013.

3.2.1.2 Search terms

Combinations of several population, intervention, and outcome search terms were used. Population search terms included “women”, “female”, and “breast cancer”. Intervention search terms included “intervention”, “psychological intervention/therapy”, “psychosocial intervention”, “programme”, “cognitive behavioural therapy”, “counselling”, and “self-help”. Outcome search terms included: “body image”, “body dissatisfaction/satisfaction”, “body esteem/appreciation”, “appearance”, “shape

concern/dissatisfaction”, “weight concern/dissatisfaction”. Boolean operators were used to improve the identification of appropriate literature. These chiefly included ‘AND’ and ‘OR’. For example (women OR breast cancer) AND (body OR appearance) AND (intervene* OR support OR therap* OR psycho*). See Appendix 1 for the full list of search terms and hits for each database.

3.2.2 Eligibility criteria

In order to identify psychosocial interventions that target body image outcomes among women in midlife treated, and not treated, for breast cancer, and that have been evaluated in controlled studies, a strict set of inclusion criteria was created. The articles had to be published in English in the years 1992-2014, as the aim was to provide a current review of research. The sample had to be comprised of women whose average age was at least 35 years, in line with a commonly used definition of the start of midlife (Hockey & James, 2003) and to realistically reflect the incidence of breast cancer, which is rare below 35 years (Han et al., 2004; UK & 2014). The women could have received any treatment for breast cancer, which could be at any stage (including DCIS or metastatic disease). Studies in which participants had a history of another clinically diagnosed condition (e.g. eating disorders, depression) were excluded, given that the focus of the review was to identify interventions which targeted body image concerns in isolation, as opposed to additional co-morbid concerns which may or may not be associated with these conditions and are likely to require more complex intervention.

Interventions could include any kind of psychosocial, psychotherapeutic, physical activity, or psycho-educational intervention. The intervention could be individual or group based, but couple-based programmes were excluded as they are not relevant to all women in midlife, regardless of whether they have been treated for breast cancer. Interventions with a primary focus on weight-loss were excluded, as the focus of the review was to identify interventions that aim to improve body image, without focussing on weight loss or other forms of appearance change.

Studies had to be controlled, whereby the intervention group was compared with a passive (e.g. waitlist) or active (alternative intervention) control group. Body image had to be measured as an outcome variable. Studies using quantitative and mixed methods were included; however, qualitative-only methods were excluded as the review sought to compare quantitative findings of body image outcome measures between studies using

objectively measurable and non-biased effect sizes. Studies had to compare a pre- and post- measurement of body image. Random allocation was not a necessity due to the ethical issues associated with randomising women with breast cancer to conditions (Bottomley, 1997). Further, this might have limited the number of studies included due to the infancy of research in this area. Finally, literature reviews and meta-analyses were excluded, but their references were inspected for potentially relevant articles.

3.2.3 Study selection

A total of 20,703 articles were initially retrieved from the searches (articles: 19,847, grey literature: 856). Of these articles, 4,450 were obtained from MEDLINE; 422 from ProQuest; 6,232 from EMBASE; 219 from Science Direct, 5,404 from SSCI and SCI; 2,834 from PubMed; 286 from Cochrane Library; 339 from Grey literature (via Web of Knowledge); 99 from Zetoc; 39 from EThOS; 378 from the National Research Register; and 1 from the UK Clinical Research Network. Duplicates totalling 13,228 were removed, leaving 7,475 articles (6,619+856).

After the titles of these articles were examined, 7,139 were excluded due to their failure to meet the inclusion criteria, leaving 336 (280+56) articles. The abstracts of the remaining articles were read and checked by two additional reviewers to ascertain their relevance, at which point 149 studies were excluded. The full texts of the remaining 187 (163+24) articles were retrieved and reviewed by three reviewers, who agreed on excluding 161 articles that failed to meet the criteria. Consequently, 26 (23+3) articles fulfilled the eligibility criteria and were included in the systematic review. The mean age of these articles was 6.4 years since publication (as at January 2013), with a minimum of 1 year and maximum of 19 years since publication. See Figure 3.1 for the PRISMA diagram illustrating the process and outcome of the search.

3.2.4 Data extraction

Relevant data were extracted from the final papers using a standardised data extraction protocol. The extracted information included: methods (design, allocation), participants (number per condition, age), details of the intervention (method of delivery, comparison group), facilitators (number, profession), outcomes (measures, timing administration), and data analyses (attrition, primary findings). Where necessary, study authors were contacted for clarification regarding their methodology. Fourteen authors were contacted

and eight replied. Characteristics of the final studies are presented separately for women who had not been treated for breast cancer (Table 3.1), and women who had (Table 3.2).

3.2.5 Appraisal of intervention effectiveness

An intervention was considered effective if there was a significant improvement in body image at post-test or follow-up among the intervention group, relative to the control group. Cohen's *d* effect sizes were calculated by dividing the difference between group means by the pooled standard deviation (Rosnow & Rosenthal, 1996).

3.2.6 Appraisal of study methodological quality

The methodological quality of included studies was evaluated using the Cochrane Collaboration tool for assessing risk of bias (Higgins & Green, 2011). Selection bias was assessed by examining whether the condition allocation sequence was adequately generated so as to produce comparable groups, and whether allocation was adequately concealed so as to determine whether intervention allocations could have been foreseen before, or during enrolment. Performance and detection bias were assessed by reference to whether participants, facilitators and outcome assessors were blinded during the study, and consequently whether knowledge of the allocated intervention was adequately prevented. Attrition bias was assessed by examining whether the outcome data was complete and whether incomplete outcome data was adequately assessed. Reporting bias was evaluated by examining whether the study was free of suggestions of selective outcome reporting. Finally, other potential sources of bias were addressed, such as failure to provide baseline comparisons between groups. In concordance with the tool, each domain of bias was judged to be of high or low risk of bias, or as an unclear risk if there was insufficient information for adequate assessment. A statement supporting each judgement was provided, and a second reviewer checked these for agreement (see Appendix 2).

3.2.7 Data synthesis

Studies were assessed for methodological and clinical heterogeneity. There were substantial clinical and methodological differences between studies. This suggested the likelihood of problematic statistical heterogeneity if data were pooled, and consequently an increased possibility of producing misleading results if meta-analysis were used. A

meta-analysis was therefore deemed inappropriate and a narrative synthesis was conducted instead (Ryan, 2014).

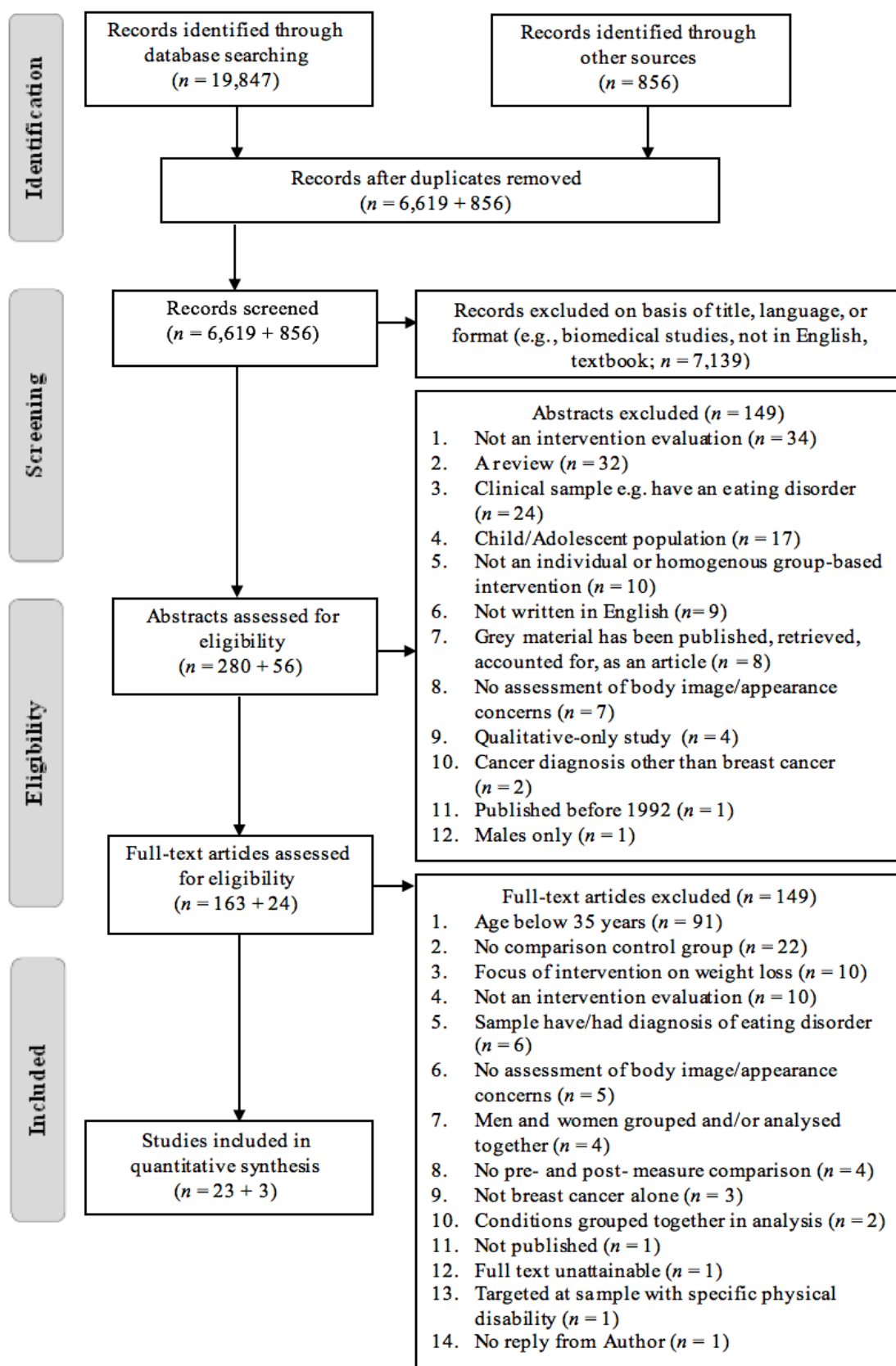


Figure 3.1 PRISMA flow diagram of search process and study selection

3.3 Findings

3.3.1 Identification of papers

The search identified 26 papers that met all the inclusion criteria and these were included in the final review. Nine papers evaluated 11 interventions targeting midlife women who had not been treated for breast cancer (two papers evaluated 2 separate interventions; Elavsky & McAuley, 2007; Merckx, 2003). Two of these papers were unpublished dissertations (Merckx, 2003; Poelke, 2009). Seventeen papers evaluated 22 interventions targeting women treated for breast cancer (two papers included 3 separate interventions; (Duijts et al., 2012; Helgeson, Cohen, Schulz, & Yasko, 1999), while one included 2 separate interventions (Scheier et al., 2005). One of these papers was an unpublished dissertation (Vito, 2007). Therefore, a total of 33 interventions were evaluated to determine their effectiveness in improving body image among women of and over the age of 35 years.

Details regarding the format, participants, and effect sizes of included interventions are displayed in Table 3.1 (targeting women not treated for breast cancer) and Table 3.2 (targeting women treated for breast cancer). Table 3.3 contains the outcome measures used among evaluative studies conducted with women not treated for breast cancer, while Table 3.4 contains those used among evaluative studies conducted with women treated for breast cancer. Details concerning the appraised methodological quality of evaluative studies are displayed in Table 3.5 (targeting women not treated for breast cancer) and Table 3.6 (targeting women treated for breast cancer).

Interventions that demonstrated a significant improvement or preventative effect relative to the control group on at least one measure of the primary outcome (body image) at post-test or follow-up are referred to as “effective interventions” throughout the rest of the chapter.

Table 3.1 Characteristics of studies conducted among women not treated for breast cancer

Author (date)	Approach	Follow-up	Dose		Format		Facilitator		Participants/Sample			Outcome Results	
			#	Mins	Face-to-face/ Remote	Group /Ind	Trained	Profession	n	M Age (SD)	n/condition	Post-test	Follow-up
Interventions with significant effects on body image at follow-up													
McLean et al (2011) ^l <i>Australia</i>	CBT	6 months	8	120	Face-to-face	Group	Y	Author & Psych	2	45.4 (8.4)	CBT: 30 WL: 29	Y(1.73) ^{b1} (2.22) ^h (1.62) ^{il}	Y(0.80) ^{b1} (1.21) ^h (1.08) ^{il}
Pearson et al (2012) <i>USA</i>	ACT	2 weeks	1	480	Face-to-face	Group	Y	Student	2	43 (14.7)	ACT: 39 WL: 34	Y(0.69) ^j (1.27) ^k	Y(0.55) ^k N ^l
Smith et al (2001) <i>USA</i>	CBT	2 months	8	90	Face-to-face	Group	Y	Student	2	36.7 (12.1)	CBT: 46 WL: 48	Y(0.99) ^{a1} (0.19) ^{a2} (0.72) ^{a3} (0.39) ^{a5} N ^{a4} Y(0.71) ^{c1} (0.41) ^{c2} (0.49) ^{c3} (0.48) ^{c5} N ^{c4, c6}	Y(0.65) ^{a1} Y(0.67) ^{a3} N ^{a2, a4, a5} N ^{c1, c2, c3, c4, c5, c6}

Author (date) <i>Country</i>	Approach	Follow-up	Dose		Format		Facilitator		Participants/Sample			Outcome Results	
			#	Mins	Face-to-face/ Remote	Group /Ind	Trained	Profession	<i>n</i>	M Age (SD)	<i>n</i> /condition	Post-test	Follow-up
Interventions with significant effects on body image at post-intervention only													
Poelke (2009) <i>Italy</i>	Mindfulness	No Follow-up	9	150	Face-to-face	Group	U	U	U	40.9 (7.3)	Mindfulness: 19 WL: 20	Y(0.72) ^{a3}	-
Hós (2005) <i>Hungary</i>	Dance	No Follow-up	14	60	Face-to-face	Group	U	U	U	48.6 (5)	Dance: 25 WL: 28	Y(0.98) ^e	-
Elavsky & McAuley (2007) ² <i>USA</i>	1. Walking 2. Yoga	No Follow-up	1.	1. 60	Face-to-face	Group	Y	U	2	49.9 (3.6)	Walking: 63 Yoga: 61 WL: 39	Walking: N(0.39) ^{f1} Y(0.34) ^{f2} Yoga: N(0.32) ^{f1} Y(0.23) ^{f2}	-
Interventions with no significant effects on body image													
Arbour & Martin Ginis (2008) <i>Canada</i>	Walking + action planning	No Follow-up	11	30	Remote	Ind	U	Author	1	48.2 (9.91)	Walking + action planning: 25 Walking only: 17	N ^{d1}	-

Author (date)	Approach	Follow-up	Dose		Format		Facilitator		Participants/Sample			Outcome Results	
			#	Mins	Face-to-face/ Remote	Group /Ind	Trained	Profession	n	M Age (SD)	n/condition	Post-test	Follow-up
Cruz-Ferreira et al (2011)	Pilates	No Follow-up	48	60	Face-to-face	Group	Y	Author	1	Pilates: 41.1 (6.6)	Pilates: 38 WL: 24	N ^{e, e1, e2}	-
<i>Portugal</i>										WL: 40.3 (7.7)			
Merckx (1998)	1. Resistance training	No Follow-up	1.	-	Face-to-face	Group	Y	Fit Ins	1	M = 46.2, SD = 5.2	Resistance training: 17	Resistance training: N(0.34) ^{a1}	-
<i>USA</i>	2. Walking		2.							(38-56)	Walking: 10 Non-exercise control: 8	N(0.12) ^{a2} N(0.01) ^{a6} N(0.21) ^{a7}	
			12									Walking: N(0.21) ^{a1} N(0.11) ^{a2} N(0.50) ^{a6} N(0.32) ^{a7}	

Key:

- Approach: CBT = Cognitive Behaviour Therapy; ACT = Acceptance and Commitment Therapy.
- Follow-up: The time point at which the outcome was assessed again in addition to post-test, if applicable.
- Dose: The number of sessions (#) and length of each session (minutes).
- Format: Indicates whether the intervention was carried out face-to-face or remotely, and with a group or an individual (Ind).
- Facilitator: Indicates whether the facilitator(s) was/were trained to deliver the intervention (Y = Yes, N = No, U = Unclear). Profession of the facilitator(s): Author = author of the paper; Psych = psychologist; Student = a clinical psychology student; Fit Inst = fitness instructor. (U) is used when profession is unclear. The number of facilitators delivering each session intervention (n) is represented numerically, and (U) is used when this information was unclear.
- Participants/Sample: The number per condition (n /condition) is indicated by the number in the intervention condition and the control condition. WL = Waitlist control group
- Outcome Results: Improvements in Body Image were indicated by Y/N (Y = Yes, N = No); effect sizes in terms of Cohen's d are provided in brackets if improvements are indicated by Y. Details of the measures used to represent the constructs are provided in superscript (e.g., ^{a,b}) and Table 3.3.

Notes:

- ¹ One facilitator was the author while the other facilitator was a psychologist, as indicated by (Author & Psych)
- ² Inferential statistics were not provided for pre/post comparisons so effect sizes are provided for all analyses

Table 3.2 Characteristics of studies conducted among women treated for breast cancer

Author (date)	Approach	Follow-up	Dose		Format		Facilitator		Participants/Sample				Outcome Results	
			(Sessions)											
<i>Country</i>			#	Mins	F-to-f/ Rem	Grp/ Ind	Trained	Profession	<i>n</i>	<i>M</i> Age (SD)	Stage of Treatment	<i>n</i> / condition	Post-test	Follow-up
Intervention with significant effects on body image at follow-up only and not at post-intervention														
Hsu et al (2010) <i>Taiwan</i>	Informational & emotional consultation	2 months	2	120	F-to-f	Ind	U	Author	1	49.2	Undergoing Mast, (No Recon), No Chemo	IG: 32 CG: 31	N ^b	Y(1.40) ^b
Interventions with significant effects on body image at post-intervention only														
Fadaei et al (2011) <i>Iran</i>	REBT	No Follow-up	6	90	F-to-f	Grp	Y	Psychiatrist	1	IG: 43.5 (7.6) CG: 44.2 (7.1)	Post-Mast (2-6 months before), Received Chemo or Radio	IG: 32 CG: 40	Y(1.43) ^b	-
Mehnert et al (2011) <i>Germany</i>	Multi- component exercise programme	No Follow-up	20	90	F-to-f	Grp	Y	Physio- & Sports- therapist	1	51.9 (8.5)	Post-Chemo and/or Radio, 39% Mast, 59% Cons	IG: 30 WL: 28	Y(0.69) ^b	-
Salonen et al (2009) <i>Finland</i>	Telephone social support	No Follow-up	1	M=14	Rem	Ind	Y	Physio- therapist	1	IG: 57 CG: 56	Post-surgery (1 week before): 49% Mast, 51% Cons, No adjuvant therapy	IG: 120 CG: 108	Y(0.21) ^{a1}	-

Author (date) <i>Country</i>	Approach	Follow-up	Dose (Sessions)		Format		Facilitator		Participants/Sample				Outcome Results	
			#	Mins	F-to-f/ Rem	Grp/ Ind	Trained	Profession	<i>n</i>	<i>M</i> Age (SD)	Stage of Treatment	<i>n</i> / condition	Post-test	Follow-up
Speck et al (2010) <i>USA</i>	Strength training	No Follow-up	96	90	F-to-f & Rem	Grp	Y	Fitness Instructor	1	56.5	Following treatment, With lymphedema (48%) or at risk (52%), 75% Chemo, 77% Radio	IG: 113 CG: 121	Y(0.25) ^f (0.30) ^{f1} (0.15) ^{f3} N ^{f2}	-
Interventions with no significant effects on body image at post-intervention														
Beatty et al (2010) <i>Australia</i>	Self-help workbook	3 months	NA	NA	Rem	Ind	NA	NA	NA	55.2 (12.7)	Post-surgery: 43% Mast, 53% Cons, 63% Chemo, 67% Radio	IG: 25 Active CG (Info only): 24	N ^{a1}	N ^{a1}
Dibbell- Hope (2000) <i>USA</i>	Dance therapy	3 weeks	6	180	F-to-f	Grp	U	Dance Therapist	1	54.7	Following treatment, 81% Mast, 10% Recon, 21% Chemo, 19% Radio	IG: 15 WL: 16	N ^d	N ^d

Author (date) Country	Approach	Follow-up	Dose (Sessions)		Format		Facilitator		Participants/Sample				Outcome Results	
			#	Mins	F-to-f/ Rem	Grp/ Ind	Trained	Profession	n	M Age (SD)	Stage of Treatment	n/ condition	Post-test	Follow-up
Duijts et al (2012) <i>The Netherlands</i>	1. CBT	6 months	1. 6	1. 90	1.	1.	Y	1. Clinical	1. 1	48.2 (5.6)	Targeted women with menopause, 50% Mast, 91% Chemo, 86% Horm	1. 109	1. N ^{a1}	1. N ^{a1}
	2. Exercise		2. 2		F-to-f	Grp		Psych &	+ 3			2. 104	2. N ^{a1}	2. N ^{a1}
	3. CBT + Exercise		12	150-	2. Rem	2.		Clinical	2. 1			3. 106	3. N ^{a1}	3. N ^{a1}
			3.	180	3. F- to-f + Rem	3.	Grp + Ind	social workers 2. Physio				WL: 103		
Helgeson et al (1999) ¹ <i>USA</i>	1. Education	6 months	8	1. 45	F-to-f	Grp	Y	1. Multiple	2	48.25 (9.64)	Post-surgery & undergoing Chemo, 32% Mast, 68% Cons	1. 79	1. N ^j	1. N ^j
	2. Peer discussion		2. 60				2. CNS &		2. 74			2. N ^j	2. N ^j	
	3. Education + Peer discussion		3.45+				Cancer		3. 82			3. N ^j	3. N ^j	
			60			social worker		CG: 77						
Jun et al (2011) <i>Korea</i>	Sexual life reframing programme	No Follow- up	6	120	F-to-f	Grp	U	Authors	1	45.7	Following treatment, 60% Mast, 40% Cons, 100% Chemo, 56% Radio, 78% Horm	IG: 22 WL: 23	N ^{e1}	-

Author (date) Country	Approach	Follow-up	Dose (Sessions)		Format		Facilitator		Participants/Sample				Outcome Results		
			#	Mins	F-to-f/ Rem	Grp/ Ind	Trained	Profession	n	M Age (SD)	Stage of Treatment	n/ condition	Post-test	Follow-up	
Mock et al (1994) ² USA	Exercise (Ex) & support (S) group	No Follow-up	U	U	Ex: Rem S: F-to-f	Ex: Ind S: Grp	Y	Ex: Authors S: CNS	Ex: U S: 1	44	53.1 (9.7)	Undergoing Chemo (Post-surgery) 7% Mast + No Recon, 14% Mast + Recon, 79% Cons	IG: 9 CG: 5	N ^{h1} N ⁱ	-
Pinto et al (2005) USA	Physical activity	No Follow-up	12	U	Rem	Ind	U	Authors	1	53.1 (9.7)	Following treatment, 22% Mast + No Recon, 7% Mast + Recon, 76% Cons, 59% Chemo, 72% Radio, 65% Horm	IG: 39 CG: 43	N ^c	-	
Quintard and Lakdja (2008) France	Beauty treatment	3 months	1	U	F-to-f	Ind	Y	Beauty Therapist	2	50% 40- 50	Post-surgery (1 week before): 9% Mast, 91% Cons,	IG: 50 CG 50	N ^g	N ^g	
Sandel et al (2005) USA	Dance & movement programme	No Follow-up	18	60	F-to-f	Grp	Y	Author	1	61	Following treatment, 71% Mast + No Recon, 21% Mast + Recon, 8% Cons, 8% Cur. Chemo, 8% Cur. Radio	IG: 19 WL: 19	N ^b	-	

Author (date) Country	Approach	Follow-up	Dose (Sessions)		Format		Facilitator		Participants/Sample				Outcome Results	
			#	Mins	F-to-f/ Rem	Grp/ Ind	Trained	Profession	<i>n</i>	<i>M</i> Age (SD)	Stage of Treatment	<i>n</i> / condition	Post-test	Follow-up
Scheier et al (2005) ³ <i>USA</i>	1. Education	9 months	4	120	F-to-f	Grp	Y	1. Multiple	1. 2	44.2	Following completion of non-hormonal treatment, 18% Mast, 76% Cons, 16% Chemo, 22% Radio, 61% Chemo + Radio, 57% Horm	1. 70	1. N ^k	1. N ^k
	2. Nutrition							2. 1	2. 78			2. N ^k	2. N ^k	
Svensk et al (2009) ⁴ <i>Sweden</i>	Art therapy	6 months	5	U	F-to-f	Ind	Y	Art Therapist	1	Median: IG: 59.5 CG: 55	Undergoing Radio, 24% Mast, 76% Cons, 46% Chemo, 41% Horm	IG: 20 CG: 21	N ^{a1}	-
Vito (2007) <i>USA</i>	Yoga	No Follow-up	16	90	F-to-f	Grp	Y	Yoga Instructor	2	50.96 (10.02)	Following treatment, 52% Mast, 40% Cons, 68% Chemo, 60% Radio	IG: 13 WL: 12	N ^c	-

Key:

- NA = Not Applicable
- Approach: REBT = Rational Emotive Behaviour Therapy; CBT = Cognitive Behaviour Therapy
- Follow-up: The time point at which the outcome was assessed again in addition to post-test, if it all.

- Dose: The number of sessions (#) and length of each session (minutes).
- Format: Indicates whether the intervention was carried out face-to-face (F-to-f) or remotely (Rem), and with a group (Grp) or an individual (Ind).
- Facilitator: Indicates whether the facilitator(s) was/were trained to deliver the intervention (Y = Yes, N = No, U = Unclear). Profession of the facilitator(s): CNS = Cancer Nurse Specialist; Psych = Psychologist. (U) is used when profession is unclear. The number of facilitators delivering each session of the intervention (*n*) is represented numerically, and (U) is used when this information was unclear.
- Participants/Sample: The number per condition (*n*/condition) is indicated by the number in the intervention condition (IG), and either the passive control condition (CG) or waitlist control condition (WL). Stage of Treatment: Mast = Mastectomy; Recon = Breast Reconstruction; Cons = Breast Conserving Surgery; Chemo = Chemotherapy; Radio = Radiotherapy; Horm = Hormonal Therapy; Cur. = Currently undergoing.
- Outcome Results: Improvements in Body Image were indicated by Y/N (Y = Yes, N = No); effect sizes in terms of Cohen's *d* are provided in brackets if improvements are indicated by Y. Details of the measures used to represent the constructs are provided in superscript (e.g., ^{a,b}) and Table 3.4. Improvements at follow-up were indicated using Y/N, with effect sizes if Y.

Notes:

- ¹ 1. Education: Facilitators varied by session, and included a nurse, a social worker, dietician, physical therapist, image consultant, and physician.
- ² The programme began as participants started chemotherapy and lasted throughout the treatment protocol (4-6 months). While a significant difference was identified between the intervention and control group mid-treatment, this disappeared by post-treatment.
- ³ 1. Education: Facilitators varied by session, and included an endocrinologist, a minister, a psychologist, a nurse, and oncology social worker.
- ⁴ The 5 week programme began as participants started radiotherapy. Outcome assessments were 2 and 6 months after the start of radiotherapy.

Table 3.3 Measures used to determine significant changes in body image in studies conducted among women not treated for breast cancer

Questionnaire/Scale used to measure Body Image or Body Dissatisfaction	
Measure	Subscale
^a Multidimensional Body Self Relations Questionnaire (Cash, 1994)	^{a1} Appearance Evaluation ^{a2} Appearance Orientation ^{a3} Body Areas Satisfaction Scale ^{a4} Overweight Preoccupation ^{a5} Self-classified Weight ^{a6} Fitness Orientation ^{a7} Health Evaluation
^b Body Image Avoidance Questionnaire (Rosen, Srebnik, Saltzberg, & Wendt, 1991)	^{b1} Social Activities & Clothing (subscales combined)
^c Adjustable Light Beam Apparatus (Thompson & Spana, 1988)	^{c1} Feel-Ideal: Hips ^{c2} Feel-Ideal: Thighs ^{c3} Feel-Think: Hips ^{c4} Feel-Think: Thighs ^{c5} Think-Ideal: Hips ^{c6} Think-Ideal: Thighs
^d Adult Body Satisfaction Questionnaire (Reboussin et al., 2000)	^{d1} Satisfaction with Physical Appearance
^e Physical Self-Concept Scale (Pais-Ribeiro & Ribeiro, 2003)	^{e1} Perception of Appreciation by Other People ^{e2} Perception of Physical
^f Physical Self-Perception Profile (Fox & Corbin, 1989)	^{f1} Physical Self-Worth ^{f2} Perceived Body Attractiveness
^g Tennessee Self-Image Test (Fitts, 1965)	^{g1} Body Image
^h Body Shape Questionnaire (Cooper, Taylor, Cooper, & Fairburn, 1987)	
ⁱ Eating Disorder Examination – Questionnaire (Fairburn & Beglin, 1994)	ⁱ¹ Weight and Shape Concern (subscales combined)

^j Preoccupation with Eating, Weight, and Shape Scale – State Version (Niemeier, Craighead, Pung, & Elder, 2002)	
^k Physical Appearance State and Trait Anxiety Inventory – State Version (Reed, Thompson, Brannick, & Sacco, 1991)	

Table 3.4 Measures used to determine significant changes in body image in studies conducted among women treated for breast cancer

Questionnaire/Scale used to measure Body Image or Body Dissatisfaction	
Measure	Subscale
^a Quality of Life Questionnaire Breast Cancer Module (QLQ-BR23; Sprangers et al., 1996)	^{a1} Body Image
^b Body Image Scale (Hopwood, Fletcher, Lee, & Al Ghazal, 2001)	^{b1} Individual Body Image ^{b2} Social Body Image
^c Body Esteem Scale (Franzoi & Shields, 1984)	
^d Body-Image Scale (Borscheid, Walster, & Bohrnstedt, 1972)	
^e Cancer Rehabilitation Evaluation System Questionnaire (CARES; Schag & Heinrich, 1990)	^{e1} Body Image
^f Body Image and Relationships Scale (Hormes et al., 2008)	^{f1} Strength and Health ^{f2} Social barriers ^{f3} Appearance and Sexuality
^g Body-Image Questionnaire (Bruchon-Schweitzer, 1987)	
^h Tennessee Self-Concept Scale (Fitts, 1965)	^{h1} Physical Self
ⁱ Visual Analogue Scale	
^j CARES – adapted by Authors (Helgeson et al., 1999)	
^k Self-Concept Scale developed by Authors (based on previous research exploring psychosocial outcomes associated with breast cancer treatment; Scheier et al., 2005)	

3.3.2 Intervention effects

Within the 11 interventions targeting women not treated for breast cancer, 64% ($n=7$) demonstrated a significant improvement on at least one measure of body image at post-test. Cohen's d effect sizes for effective interventions ranged from 0.19 to 2.22, with large effect sizes reported in 57% ($n=4$). Three interventions (27%) were assessed at follow-up, and all of these reported sustained improvements on at least one measure of body image at either two weeks (Pearson, Follette, & Hayes, 2012), two months (Smith, Wolfe, & Laframboise, 2001), or six months (McLean et al., 2011). Effect sizes at follow-up were medium-large ($ds = 0.55$ to 1.21), with one study reporting large effect sizes at both post-test and follow-up (McLean et al., 2011).

With regard to the 22 interventions targeting women treated for breast cancer, 23% ($n=5$) demonstrated a significant improvement on at least one measure of body image at post-test or follow-up. Cohen's d effect sizes for post-test interventions ranged from 0.15 to 1.43, with a large effect size reported in one (20%) of the effective interventions. One intervention was ineffective at post-test, but demonstrated a delayed improvement of large effect size ($d=1.40$) at two months follow-up (Hsu, Wang, Chu, & Yen, 2010). This intervention will be considered as, and discussed in conjunction with, post-test effective interventions. Large effect sizes were reported in 40% ($n=2$) of the effective studies. No studies reported sustained post-test improvements on body image at follow-up.

3.3.3 Outcome measures (see Tables 3.1, 3.2, 3.3 and 3.4)

An extensive range of outcome measures was used to evaluate changes in body image across the studies that targeted women not treated for breast cancer. Three studies used more than one scale to assess body image (McLean et al., 2011; Pearson et al., 2012; Smith et al., 2001). The Multidimensional Body-Self Relations Questionnaire (MBSRQ; Brown, Cash, & Mikulka, 1990; Cash, 1994) was the most commonly employed measure across studies ($n=3$), including those which reported effective interventions. The studies which detected sustained improvements in body image used the Appearance Evaluation subscale (assessing satisfaction with overall appearance; e.g. "I like my looks just the way they are") and Body Areas Satisfaction Scale (assessing satisfaction with isolated aspects of appearance e.g. face, hair, lower torso) of the MBSRQ, the Social Activities subscale (assessing avoidance of social situations that involve eating or focus on appearance; e.g. "I do not go out socially if the people I am with are thinner than me")

and Clothing subscale (assessing body- disguising through clothing choices; e.g. “I wear baggy clothing”) of the Body Image Avoidance Questionnaire (Rosen, Srebnik, Saltzberg, & Wendt, 1991), the Body Shape Questionnaire (Cooper, Taylor, Cooper, & Fairburn, 1987; assessing preoccupation with body shape; e.g. "Have you felt so bad about your shape that you have cried?"), the Weight Concern subscale (assessing concern regarding body weight; e.g. “Have you had a strong desire to lose weight?”) and Shape Concern subscale (assessing concern regarding shape; e.g. “Have you had a definite desire to have a totally flat stomach?”) of the Eating Disorder Examination Questionnaire (Fairburn & Beglin, 1994), and the Physical Appearance State and Trait Anxiety Inventory–State Version (Reed, Thompson, Brannick, & Sacco, 1991; assessing level of current anxiety regarding isolated aspects of appearance e.g. thighs, buttocks, hips).

All measures have been validated among adolescent and young adult groups, and the majority have been also validated among women in midlife. Several aspects of body image were consequently improved across the studies, including dissatisfaction with both overall and isolated aspects of appearance; concern and anxiety regarding weight, shape, and additional aspects of appearance; and the avoidance of circumstances which provoke concern about appearance.

In contrast, a smaller range of outcome measures was used to examine changes in body image across the studies targeting women treated for breast cancer. All studies used only one scale to assess body image, but a greater number of cancer-specific scales ($n=6$) were used, compared with scales which are appropriate for the general population and are used widely in the body image field ($n=4$). While cancer-specific scales assess satisfaction with, and the impact of, treatment-related appearance changes (e.g. scarring), body image scales tend to assess satisfaction with overall appearance, isolated aspects of appearance, or weight and shape. The Body Image subscale (assessing satisfaction with the body and impact of breast cancer treatment-related appearance changes; e.g. “Have you felt physically less attractive as a result of your disease or treatment?”) of the European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire – Breast Cancer Module (QLQ-BR23; Sprangers et al., 1996), was the most commonly employed measure across studies ($n=4$), in conjunction with the Body Image Scale (BIS; Hopwood, Fletcher, Lee, & Al Ghazal, 2001; $n=4$; assesses satisfaction with the body and impact of cancer treatment-related appearance changes; e.g. "Do you find it difficult to look at yourself naked?"). All 5 effective interventions

used breast-cancer-specific scales, with the majority employing the BIS ($n=3$), in addition to the QLQ-BR23 ($n=1$), and the Body Image and Relationships Scale (Hormes et al., 2008; $n=1$; assesses impact of breast cancer treatment-related appearance and bodily changes upon physical function, social interactions, and intimacy; e.g. "I was uncomfortable with or embarrassed by the appearance of my body").

All three measures have been validated among women treated for breast cancer. Effect sizes for effective interventions were generally larger in studies employing the BIS ($d_s = 0.69-1.43$), and aspects of body image consequently improved included dissatisfaction with appearance generally and with scarring, the avoidance of circumstances which provoke concern about appearance, and feelings of defeminisation, and of the body feeling less "whole".

3.3.4 Intervention characteristics (see Tables 3.1 and 3.2)

3.3.4.1 Approach

All 11 interventions targeting women not treated for breast cancer adopted a therapeutic ($n=4$; 36%) or physical-activity-based approach ($n=7$; 64%). These approaches were almost evenly split between the 7 effective interventions. Therapeutic approaches included Cognitive Behaviour Therapy (McLean et al., 2011; Smith et al., 2001), Acceptance and Commitment Therapy (ACT; Pearson et al., 2012), and Mindfulness (Poelke, 2009), while physical activities comprised dance (Hös, 2005), walking (Elavksy & McAuley, 2007), and yoga (Elavksy & McAuley, 2007). The three interventions that reported sustained improvements at follow-up were based on therapeutic models. The effective therapeutic approaches were CBT (McLean et al., 2011; Smith et al., 2001) and ACT (Pearson et al., 2012). It is also important to note that these were the only interventions within which body image was explicitly addressed in the intervention content.

In contrast, an array of different approaches was employed across the 22 interventions targeting women not treated for breast cancer. A single approach was adopted in 18 interventions, the most popular of which was physical activity ($n=7$; 32% of all 22 interventions), while 4 interventions employed multifaceted approaches. Several approaches were adopted across effective interventions, including physical activity (Mehnert et al., 2011; Speck, Gross, et al., 2010), Rational Emotive Behaviour Therapy

(REBT; Fadaei et al., 2011), general telephone support (Salonen et al., 2009), and a combination of information and general support (Hsu et al., 2010). The two effective interventions of large effect size adopted a psychosocial support-based approach (Fadaei et al., 2011; Hsu et al., 2010). It is also important to note that these two interventions included content that explicitly addressed body image.

In summary, there was a trend for programmes with sustained improvements on body image among women not treated for breast cancer to adopt a therapeutic-based approach. While there was no such tendency across effective interventions targeting women treated for breast cancer, those of large effect size adopted a psychosocial support-based approach.

3.3.4.2 Format

Nearly all included interventions targeted at women not treated for breast cancer were delivered face-to-face to a group of participants ($n=9$; 91%). The only study that delivered a remote intervention constituted walking plus action planning (Arbour & Martin Ginis, 2008). Nevertheless, all seven effective interventions used a face-to-face, group format.

The majority of interventions targeting women treated for breast cancer were delivered face-to-face to a group of participants ($n=12$; 55%). Fewer were delivered individually ($n=9$; 41%) or remotely ($n=7$; 32%), and among these, 3 interventions (14% of all 22 interventions) comprised a combination of both in-person and remote support. This trend was reflected among effective interventions, with nearly all delivered face-to-face ($n=4$, 80%), although one included a remotely delivered element (Speck, Gross, et al., 2010; strength training). The majority of effective interventions were also delivered to groups ($n=3$; 60%), as opposed to individuals. Both effective interventions with a large effect size were delivered in person, but one was delivered individually (Hsu et al., 2010) and one was delivered to a group (Fadaei et al., 2011).

In summary, there was a clear trend, in relation to the format of effective interventions, for group interventions delivered in person to be more effective among both groups of women.

3.3.4.3 Dose and intensity

Interventions targeting women not treated for breast cancer ranged in overall length between 5.5 hours (Arbour & Martin Ginis, 2008) and 144 hours (Hós, 2005). The average length of effective interventions was 18 hours; however, the therapeutic-based interventions with sustained improvements were less than 20 hours. Specifically, the ACT intervention lasted 8 hours (Pearson et al., 2012), while the CBT interventions were 12 hours (Smith et al., 2001) and 16 hours (McLean et al., 2011). All but one of the 11 included interventions were multi-session, and ranged between one (Pearson et al., 2012) to 144 sessions (Hós, 2005). The average number of sessions of effective interventions was 29, but those with sustained benefits at follow-up were comprised of 1 (Pearson et al., 2012) or 8 sessions (McLean et al., 2011; Smith et al., 2001)

Interventions targeting women treated for breast cancer ranged in overall length between 14 minutes (Salonen et al., 2009) and 144 hours (Speck, Gross, et al., 2010). The average length of effective interventions was 37 hours; however, those with large effect sizes were less than 10 hours. Specifically, the informational and emotional consultation lasted 4 hours (Hsu et al., 2010), while the REBT intervention lasted 9 hours (Fadaei et al., 2011). The average number of sessions of effective interventions was 25, but those with large effect sizes were comprised of 2 (Hsu et al., 2010) or 6 sessions (Fadaei et al., 2011).

The averages reported should be interpreted cautiously, in view of the large variability in overall length and number of sessions between interventions. However, effective interventions across both groups of women tended to be multi-session, with up to 10 sessions. There was less consistency between the two groups with regard to the length of effective interventions, with interventions targeting women not treated for breast cancer lasting longer.

3.3.5 Facilitator characteristics (see Tables 3.1 and 3.2)

3.3.5.1 Training of facilitators

Most interventions that targeted women not treated for breast cancer used facilitators who had been formally trained in delivering the intervention ($n=8$; 73%), while this was not assured in the remaining interventions. Trained facilitators delivered the majority of

effective interventions ($n=5$; 71%), including all three with reported sustained improvements (McLean et al., 2011; Pearson et al., 2012; Smith et al., 2001).

Similarly, most interventions which targeted women treated for breast cancer also used facilitators who had received formal training in delivering the intervention ($n=17$; 77%), while this was not the case in one intervention, as it employed a self-help book (Beatty, Koczwara, Rice, & Wade, 2010), and was unclear in the remaining interventions. Trained facilitators delivered nearly all the effective interventions ($n=4$; 80%).

In summary, there was a clear tendency for effective interventions across both groups of women to use facilitators who had received formal training in delivering the intervention.

3.3.5.2 Profession of facilitators

With regard to the interventions targeting women not treated for breast cancer, when these were delivered by more than one facilitator, both/all were of the same profession. Three interventions (all of which produced sustained improvements in body image) used qualified or trainee clinical psychologists, one of which was also the author of the respective paper (McLean et al., 2011). Other facilitators included a fitness instructor (Merckx, 1998), and the authors of the respective papers (Arbour & Martin Ginis, 2008; Cruz-Ferreira et al., 2011; deduced to be a kinesiologist and a specialist in sport and health).

The majority of interventions targeting women treated for breast cancer used facilitators from one profession ($n=14$; 64%). The most commonly used facilitators were social workers ($n=6$; 27%) and nurses ($n=5$; 23%). Amongst effective interventions, those of large effect size used a psychiatrist (Fadaei et al., 2011) and the paper's author (who was based in a nursing department; Hsu et al., 2010).

In summary, interventions with sustained improvements on the body image of women not treated for breast cancer used qualified or trainee clinical psychologists as facilitators. There was, however, no clear trend regarding the facilitators used across the effective interventions among women treated for breast cancer.

3.3.5.3 Number of facilitators

Five (45%) of the effective interventions targeting women not treated for breast cancer, including the three interventions with sustained effects, had two facilitators lead each

session. Four (36%) of the identified interventions used only one facilitator, while reports of the remaining two interventions (18%) were unclear with regard to the number of facilitators used (Hős, 2005; Poelke, 2009). Half of the reviewed interventions targeting women treated for breast cancer had one facilitator lead each session ($n=13$; 59%), and included the five effective interventions. Six interventions had two facilitators (27%), while another had four or five facilitators lead each session (Duijts et al., 2012).

In summary, effective interventions targeting women not treated for breast cancer tended to use two facilitators, while all effective interventions targeting women not treated for breast cancer tended to use one facilitator.

3.3.6 Participant characteristics (see Tables 3.1 and 3.2)

3.3.6.1 Age

The mean age of women not treated for breast cancer across the studies ranged between 36 to 50 years. Three of the effective interventions were delivered to participants with a mean age between 45 and 50 years (Elavksy & McAuley, 2007; Hős, 2005), while another three were delivered to participants with a mean age between 40 and 45 years (McLean et al., 2011; Pearson et al., 2012; Poelke, 2009). The mean age of participants in studies that reported sustained improvements was between 36 and 45 years.

With regard to the samples of women treated for breast cancer, the mean age ranged between 43 to 61 years. The two effective interventions with large effects were delivered to participants with a mean age between 43 and 50 years (Fadaei et al., 2011; Hsu et al., 2010), while the remaining three effective interventions were delivered to participants with a mean age between 51 and 57 years.

In summary, the range of mean ages was greater across the studies targeting women treated for breast cancer, and these women were generally older than the other group of women. This trend was also mirrored among effective interventions.

3.3.6.2 Stage of diagnosis and treatment

The majority of studies targeting women treated for breast cancer provided information regarding the progressive stage of the disease of participants ($n=11$; 65%). These studies were primarily comprised of women with stage I ($n=4$), and stage II ($n=7$) cancer. Two of the effective studies included participants predominantly with stage II cancer (Salonen

et al., 2009; Speck, Gross, et al., 2010), while women with stage I cancer constituted another of these studies (Mehnert et al., 2011). The remaining 2 effective interventions did not provide this information.

There was variability regarding the stage of treatment of participants across the 17 studies. Six studies (35%) included participants who were either still undergoing active treatment (i.e. surgery, chemotherapy, or radiotherapy) or had received treatment less than a week earlier; while 7 further studies included participants who had completed active treatment (41%). Participants in 4 (80%) of the effective interventions had undergone surgery, while participants in 3 (60%) of the effective interventions had also received radiotherapy and/or chemotherapy. Participants were still undergoing active treatment in an additional effective intervention (Hsu et al., 2010). One of the effective interventions targeted women with, or at high risk of, lymphedema (Speck, Gross, et al., 2010).

In summary, women in effective interventions tended to be in stage I or stage II of breast cancer, and had finished active treatment.

3.3.6.3 Pre-intervention body image concerns

Most of the studies of interventions targeting women not treated for breast cancer did not screen for body image concerns pre-intervention (66%, $n=6$). Three interventions (all found to have produced sustained improvements in body image) were delivered only to participants with elevated levels of body dissatisfaction and identified at risk for developing an eating disorder (McLean et al., 2011; Pearson et al., 2012; Smith et al., 2001). In contrast, none of the interventions targeting women treated for breast cancer screened participants in this way.

3.3.7 Methodological quality of studies (see Tables 3.5 and 3.6)

Selection bias tended to be low among studies across both groups of women with regard to random allocation, but this was compromised when it came to allocation concealment. Performance and detection bias were judged to be of high risk among nearly all studies, whereas half of studies across both groups indicated a low risk of attrition bias. On the other hand, a low risk of reporting bias and other sources of bias were suggested among all studies.

3.3.7.1 Allocation

With regard to studies targeting women not treated for breast cancer, random sequence generation was used to allocate participants to conditions in seven studies (78%). Two of these studies did not describe their methods for allocation, while others reported the use of computer-generated-randomisation (Elavksy & McAuley, 2007; McLean et al., 2011), a table of random numbers (Arbour & Martin Ginis, 2008; Cruz-Ferreira et al., 2011), and flipping a coin (Pearson et al., 2012). The two remaining studies, however, appeared not to have used random allocation, and consequently presented a high risk of selection bias. In these cases, allocation to conditions was decided by the participants' physician (Merckx, 2003) or determined by participants' availability (Hös, 2005). Only two studies (22%) described adequate methods of allocation concealment, and employed a third party to conduct randomisation centrally (Cruz-Ferreira et al., 2011; McLean et al., 2011). Given the nature of the procedures used for sequence generation, group allocation could have been foreseen in two studies (Hös, 2005; Merckx, 2003). Insufficient information was provided in the remaining studies to make a judgement regarding allocation concealment, thus indicating an unclear risk of selection bias.

Thirteen of the seventeen studies (76%) targeting women not treated for breast cancer employed random sequence generation to allocate participants to conditions. While eight studies did not describe their method for allocation, others reported the use of computer-generated-randomisation (Duijts et al., 2012; Sandel et al., 2005; Speck, Gross, et al., 2010; Svensk et al., 2009), a table of random numbers (Jun et al., 2011), and numbered containers (Beatty et al., 2010). However, four studies described a method of allocation that indicated that randomisation was not used, and consequently present a high risk of selection bias. Only four studies (24%) described adequate methods of allocation concealment (Beatty et al., 2010; Mehnert et al., 2011; Sandel et al., 2005; Speck, Gross, et al., 2010). Given the nature of the procedures employed for sequence generation, group allocations could have been foreseen in five further studies (Fadaei et al., 2011; Hsu et al., 2010; Jun et al., 2011; Salonen et al., 2009; Vito, 2007). The remaining studies provided insufficient information to inform a decision regarding allocation concealment, consequently suggesting an unclear risk of selection bias in nearly half of the cases.

In summary, while most of the studies evaluating interventions targeting both groups of women conducted random allocation, few studies ensured subsequent allocation concealment.

3.3.7.2 Blinding

Three (33%) of the studies targeting women not treated for breast cancer reported blinding of the outcome assessor and were judged as presenting a low risk of bias (Arbour & Martin Ginis, 2008; Cruz-Ferreira et al., 2011; Elavksy & McAuley, 2007), while the remaining studies provided insufficient information. Given the use of self-reported outcome measures across all studies and that participants were unable to be blinded to their group allocation, there was a high risk of performance bias across nearly all studies. However, participants were blinded in one study, by means of an active control group (Arbour & Martin Ginis, 2008).

Only one of the seventeen studies targeting women treated for breast cancer reported blinding of the outcome assessor and was consequently judged as presenting a low risk of bias (Speck, Gross, et al., 2010). Limited information was provided in the remaining studies. Again, self-reported outcome measures were employed across all included studies, which therefore prevented the blinding of participants to their group allocation and created a high risk of performance bias across nearly all studies. Nevertheless, one study included an active control group, and participants were therefore blinded to their allocation (Beatty et al., 2010).

There was a high risk of performance and detection bias across all studies, which highlighted the need for caution when interpreting the reported effects. However, it would have been difficult for the interventions under scrutiny to avoid such bias, given their psychosocial or behavioural nature.

3.3.7.3 Incomplete outcome data

Five (56%) of the studies targeting women not treated for breast cancer adequately reported the rates of attrition and reasons for withdrawal, for which there were no significant differences between the intervention and control groups. A high risk of attrition bias was, however, suggested in two studies (22%) due to an imbalance of attrition rates between the conditions and significant differences between participants who completed and dropped out of the intervention. The remaining interventions did not

address attrition or reasons for withdrawal, thus creating an unclear risk of attrition bias. Analytical strategies were described clearly across all studies, but only three (33%) explicitly reported having used an ‘intention-to-treat’ analysis to address data (Elavksy & McAuley, 2007; McLean et al., 2011; Smith et al., 2001). However, analytical methods implied the adoption of this approach in four additional studies (44%; Cruz-Ferreira et al., 2011; Merckx, 2003; Pearson et al., 2012; Poelke, 2009). The remaining studies implied statistical analyses consistent with an ‘as-treated’ protocol, but this was not stated.

Nine (53%) of the studies targeting women treated for breast cancer adequately reported attrition rates and reasons for exclusion (for which there were no significant differences between the intervention and control groups), or imputed missing data using appropriate methods. Nevertheless, a high risk of attrition bias was indicated in five studies (29%), due to an imbalance in attrition rates and reasons for missing data across conditions, and the subsequent inadequate ‘as-treated’ analyses. The remaining interventions did not address attrition or reasons for withdrawal, and consequently presented an unclear risk of attrition bias. While analytical strategies were described clearly across all studies, only three (18%) explicitly reported having used an ‘intention-to-treat’ analysis (Duijts et al., 2012; Pinto, Frierson, Rabin, Trunzo, & Marcus, 2005; Sandel et al., 2005). However, six additional studies (35%) implied analytical methods consistent with this protocol (Beatty et al., 2010; Dibbell-Hope, 2000; Fadaei et al., 2011; Helgeson et al., 1999; Hsu et al., 2010; Quintard & Lakdja, 2008; Rahmani & Talepasand, 2015). Analytical methods employed in the remaining studies implied the adoption of an ‘as-treated’ approach; but this was not stated.

In both cases of studies evaluating interventions targeting women treated, and not treated, for breast cancer, half the studies displayed a low risk of attrition bias.

3.3.7.4 Selective reporting

All nine studies targeting women not treated for breast cancer reported pre-specified outcomes consistently throughout, and were consequently judged to have a low risk of reporting bias. Two studies (22%) conducted power calculations (Merckx, 2003); but one was underpowered (McLean et al., 2011; Merckx, 2003). Of the remaining studies, only one explicitly addressed power and reported the difficulty of its calculation when conducting multi-level modelling (Arbour & Martin Ginis, 2008), while two additional

studies did not carry out a power calculation (Cruz-Ferreira et al., 2011; Smith et al., 2001).

Similarly, nearly all studies targeting women treated for breast cancer reported pre-specified outcomes throughout ($n=15$, 88%), apart from two which failed to present the full results of pre-specified analyses. Generally, however, there was a low risk of reporting bias. Six studies (35%) conducted power calculations, of which half were sufficiently powered (Duijts et al., 2012; Hsu et al., 2010; Jun et al., 2011), and half were underpowered (Beatty et al., 2010; Scheier et al., 2005; Speck, Gross, et al., 2010). Power was not addressed in the remaining twelve studies.

In summary, studies in both cases generally reported a low risk of selective reporting.

3.3.7.5 Other sources of bias

With regard to the studies targeting women not treated for breast cancer, two (22%) provided no evidence of baseline outcome comparisons and consequently suggested a high risk of bias from other sources. Two additional studies identified significant baseline differences between groups on demographic and outcome measures, but these were controlled in subsequent analyses (Elavksy & McAuley, 2007; Smith et al., 2001). Generally, there was a low risk of other sources of bias across the studies.

Similarly, two of the studies (12%) targeting women treated for breast cancer identified significant differences at baseline on demographic and outcome measures, of which one controlled for these in subsequent analyses (Pinto et al., 2005), while the other did not (Vito, 2007). Generally, a low risk of other sources of bias was indicated.

Overall, there was little concern regarding other sources of bias among studies targeting both women treated, and not treated, for breast cancer.

Table 3.5 Methodological quality of studies evaluating interventions among women not treated for breast cancer

	Risk of bias criteria							
	Random sequence generation	Allocation concealment	Blinding: Participants	Blinding: Facilitators	Blinding: Outcome assessors	Incomplete outcome data	Selective reporting	Other bias
Interventions with significant effects on body image at follow-up								
McLean et al (2011)	+	+	-	-	?	+	+	+
Pearson et al (2012)	+	?	-	-	?	+	+	+
Smith et al (2001)	+	?	-	-	?	+	+	+
Interventions with significant effects on body image at post-intervention only								
Elavksy & McAuley (2007)	+	?	-	-	+	-	+	+
Hós (2005)	-	-	-	-	?	?	+	+
Poelke (2009)	+	?	-	-	?	+	+	+
Interventions with no significant effects on body image								
Arbour & Martin Ginis (2008)	+	?	+	-	+	+	+	-
Cruz-Ferreira et al (2011)	+	+	-	-	+	-	+	+
Merckx (2003)	-	-	-	-	?	?	+	-

Key: + represents quality criteria satisfied and low risk of bias; - represents quality criteria not satisfied and high risk of bias; ? represents insufficient information in the paper to judge risk of bias

Table 3.6 Methodological quality of studies evaluating interventions among women treated for breast cancer

	Risk of bias criteria							Other bias
	Random sequence generation	Allocation concealment	Blinding: Participants	Blinding: Facilitators	Blinding: Outcome assessors	Incomplete outcome data	Selective reporting	
Interventions with significant effects on body image at follow-up only and not at post-intervention								
Hsu et al (2010)	-	-	-	-	?	+	+	+
Interventions with significant effects on body image at post-intervention only								
Fadaei et al (2011)	-	-	-	-	?	?	+	+
Mehnert et al (2011)	+	+	-	-	?	+	+	+
Salonen et al (2009)	-	-	-	-	?	-	+	+
Speck et al (2010)	+	+	-	-	+	-	+	+
Interventions with no significant effects on body image								
Beatty et al (2010)	+	+	+	NA	?	+	+	+
Dibbell-Hope (2000)	+	?	-	-	?	?	+	+
Duijts et al (2012)	+	?	-	-	?	+	-	+
Helgeson et al (1999)	+	?	-	-	?	?	-	+
Jun et al (2011)	+	-	-	-	?	+	+	+

	Risk of bias criteria							
	Random sequence generation	Allocation concealment	Blinding: Participants	Blinding: Facilitators	Blinding: Outcome assessors	Incomplete outcome data	Selective reporting	Other bias
Interventions with no significant effects on body image								
Mock et al (1994)	+	?	-	-	?	-	+	+
Pinto et al (2005)	+	?	-	-	?	+	+	+
Quintard and Lakdja (2008)	+	?	-	-	?	+	+	+
Sandel et al (2005)	+	+	-	-	?	+	+	+
Scheier et al (2005)	+	?	-	-	?	-	+	+
Svensk et al (2009)	+	?	-	-	?	+	+	+
Vito (2007)	-	-	-	-	?	-	+	-

Key: + represents quality criteria satisfied and low risk of bias; - represents quality criteria not satisfied and high risk of bias; ? represents insufficient information in the paper to judge risk of bias; NA = Not Applicable

3.4 Discussion

This is the first study to systematically review the evidence for the effectiveness of psychosocial interventions that aim to improve the body image of women in midlife, including women treated for breast cancer. The systematic search identified 26 evaluative papers, within which 11 interventions targeted women not treated for breast cancer, and 22 interventions targeted women treated for breast cancer. The majority (64%; $n=7$) of interventions targeting the former group demonstrated an improvement on at least one measure of body image at post-test, three of which reported sustained improvements of medium to large effects, with the longest follow-up point of six months. In contrast, while the number of interventions targeting women treated for breast cancer was encouraging, only the minority (23%; $n=5$) demonstrated a significant improvement on at least one measure of body image at post-test or follow-up, with large effects reported by only one intervention. It was also disappointing that none of these post-test improvements from the interventions were maintained at follow-up. Characteristics of the interventions, facilitators, and participants, differed between studies targeting each group of women. Nevertheless, the effective interventions targeting women not treated for breast cancer possessed similarities concerning these intervention aspects. With regard to methodological quality of evaluative studies, generally there was a low risk of reporting bias, a high risk of performance and detection bias, and a moderate risk of selection and attrition bias.

3.4.1 Characteristics of effective interventions

It is important to note that the methodological heterogeneity of the studies prevents the generation of firm conclusions in relation to the characteristics of effective interventions. Indeed, the studies included different participants, adopted diverse intervention approaches and dose, and employed wide-ranging outcome measures and follow-up times. Consistency regarding methodological approaches in future would allow more meaningful comparisons between studies. Nevertheless, it is still of value to identify the aspects of effective interventions in the existing research.

The effective interventions targeting women not treated for breast cancer were split between a physical-activity-based approach or a therapeutic approach, while those adopting the latter demonstrated significant and sustained effects on body image. The therapeutic models upon which these interventions were based included cognitive

behavioural therapy (CBT), and acceptance and commitment therapy (ACT), and the content of all three interventions exclusively addressed body image. In contrast, an array of different approaches was employed by the effective interventions targeting women treated for breast cancer, including both isolated and combined approaches (e.g. therapy and physical activity). However, the two effective interventions of large effect size employed a psychosocial support-based approach and included content that partially addressed body image.

Generally, effective interventions aimed at both groups of women employed a wide variety of content, yet none provided the information nor adopted the study design necessary to ascertain which features were accountable for the improvements on body image. Our understanding regarding the mechanisms through which these interventions work would be vastly improved by the ability to identify the components driving the intervention improvements. This would enable us to strengthen these components so as to improve effect sizes and maintenance of effects.

Given the vast research literature that has identified the extent to which treatment-induced appearance and bodily function changes can impose adverse and long-lasting effects on the body image of women treated for breast cancer (e.g. Falk Dahl et al., 2010), the lack of exclusive and explicit focus on body image in the interventions for this group is surprising. This omission may reflect the focus of intervention content on addressing the wide range of psychosocial issues that can accompany diagnosis, treatment and recovery from breast cancer. However, these consequences can be exacerbated by issues relating to body image (Przedziecki et al., 2013), and policy makers, commissioners, and service planners have been called upon to provide support specifically to address body image concerns among women treated for breast cancer (Breast Cancer Care, 2014). This highlights the importance of developing psychosocial interventions which exclusively and explicitly target body image concerns among this group.

With regard to intervention format and delivery, effective interventions targeting both groups of women were delivered face-to-face to groups by trained facilitators and were generally multi-session with each session lasting at least one hour. It has been argued that a group-based format fosters cohesion, whereby group members feel accepted and supported, and this has been considered “a necessary precondition for other therapeutic

factors to function optimally’’ (Yalom, 1995; pp 49). An additional benefit of group-based interventions is the lower cost associated with delivery compared with that of interventions delivered on an individual basis. Moreover, while delivering interventions remotely rather than face-to-face may provide an additional opportunity for cost savings, the provision of support in person may foster a stronger therapeutic alliance and a medium through which understanding and warmth can more effectively be communicated (Rees & Stone, 2005; Wray, 2003). Similarly, remote contact may diminish the women’s feelings of comfort and trust in the intervention facilitator (Leibert, Archer, & Munson, 2006). Further, a previous evaluation comparing online and face-to-face delivery of a group body image intervention for adult women found that while both approaches attained positive outcomes, face-to-face delivery produced improvements of greater magnitude at the end of the intervention (Paxton, McLean, Gollings, Faulkner, & Wertheim, 2007). The authors proposed that the absence of non-verbal cues in the online delivered intervention may have imposed communication restrictions, while not having personally met the therapist or other group members may have harmed both the therapeutic relationship with the therapist and the sense of group cohesion between participants.

All effective interventions targeting the body image of women treated for breast cancer were led by one trained facilitator. Alternatively, most of those targeting women who were not treated were delivered by two trained facilitators, of which the interventions with sustained effects on body image were delivered by two qualified or trainee clinical psychologists. Co-leadership of interventions can be beneficial due to reciprocal support between facilitators; for example, in the form of reflection and feedback throughout the intervention (Fall & Menendez, 2002). However, individually led sessions can be advantageous due to the lower cost of delivery, and the lack of potential competition between co-leaders (Roller & Nelson, 1993). Various professions were represented across the interventions that improved the body image of women treated for breast cancer, so findings with regard to the most appropriate profession for facilitating were inconclusive. It is also important to note that details regarding the training of facilitators were limited and therefore obscured understanding of the financial and other resources needed to implement the programme.

Turning now to a discussion of the women among whom the effective interventions were delivered, while the age range of those not treated for breast cancer was generally

younger than that of those treated, effective interventions were delivered to women at the younger end of the respective age ranges for both groups (i.e. the younger end of midlife). Research indicates that younger women in both midlife “general population” groups (Öberg & Tornstam, 1999; Reboussin et al., 2000) and among women treated for breast cancer (King, Kenny, Shiell, Hall, & Boyages, 2000) tend to experience greater body dissatisfaction than women at the upper end of the age range. However, such findings perhaps reflect the heterogeneity of individual studies.

There was disparity between effective interventions with regard to the stage of cancer treatment for participants. This may be associated with the lack of sustained improvements on body image, and improvements identified at follow-up as opposed to post-intervention in one study (Hsu et al., 2010). Different stages of treatment are accompanied by different changes to appearance and function, and while the effective intervention may have improved body image at the particular point of treatment, body image may worsen again when subsequent treatment induces additional and differing alterations to appearance and body image. Indeed, the cumulative effects of treatments can cause substantial distress (Brennan, 2004).

However, this disparity concerning stages of treatment may also be explained by factors which are unrelated to appearance and body image. For example, diagnosis and treatment are understandably stressful, and levels of coping and resilience may be higher or lower at different stages of treatment. Nevertheless, these findings emphasise that support for body image may be valuable at any stage of treatment. Indeed, some interventions successfully improved body image following completion of treatment, which highlights the importance of addressing the residual needs of cancer survivors through the National Cancer Survivorship Initiatives in the UK and United States. Further, the various approaches employed by effective interventions accommodate different stages of treatment and associated capabilities. For example, interventions based on physical activity may be inappropriate for women undergoing active treatment due to physical functional limitations, fatigue, or feelings of discomfort.

Identifying the characteristics of effective interventions is helpful for the development of future interventions, but the methodological quality of their evaluative studies must be scrutinized before drawing definitive conclusions.

3.4.2 Methodological quality of the evaluative studies of effective interventions

With regard to the methodological quality of the three studies that identified sustained effects on body image among women not treated for breast cancer, a low risk of bias was identified across the majority of domains. Indeed, all three studies reported a low risk of attrition bias, reporting bias, and selection bias as determined by random allocation. However, Pearson et al. (2012) and Smith et al. (2001) provided insufficient information to facilitate a judgement regarding allocation concealment. A high risk of performance bias and detection bias was indicated within all three studies, both of which are difficult to eliminate within psychosocial interventions. Overall, however, these three studies were of sound methodological quality, which elicits greater confidence in their findings.

Similarly, the nature of psychosocial interventions made blinding difficult in the five studies evaluating effective interventions targeting women treated for breast cancer, and a high risk of performance bias and detection bias was consequently suggested. While a low risk of reporting bias was indicated across the effective studies, half suggested a high risk of selection bias (Fadaei et al., 2011; Hsu et al., 2010; Salonen et al., 2009), two of which reported large effects on body image. Confidence can, however, be placed in the methodological quality of the two remaining studies (and consequently their conclusions), which generally indicated a low risk of bias overall (Mehnert et al., 2011; Speck, Gross, et al., 2010).

3.4.3 Methodological recommendations for future research

There is a need for the methodological rigour of research investigating body image interventions among women in midlife to be improved in order to increase levels of confidence in the findings of future studies.

In order to attain an adequate level of internal validity, this review only sought interventions with a pre-test post-test design and a comparison control group. Randomisation was not considered an essential criterion for inclusion, though this was carried out in most of the included studies. Nevertheless, few studies ensured allocation concealment. Trials with inadequate or unclear concealment have tended to exaggerate treatment effect sizes by up to 40% (Jüni, Altman, & Egger, 2001; Schulz, Chalmers, Hayes, & Altman, 1995). This highlights the importance of future studies including a description of the methods used for random sequence generation and allocation

concealment in order to increase confidence in the findings. Further, given the ethical concerns associated with the random allocation of women with breast cancer (Bottomley, 1997), it was disappointing that only half the studies targeting these women used an alternative intervention or waitlist control group. The ethical aspects of designs that withhold interventions from control groups, particularly following randomisation, should therefore be considered.

Despite the importance of conducting power analyses (Charles, Giraudeau, Dechartres, Baron, & Ravaud, 2009), most of the included studies impugned their internal validity by failing to describe how their sample size was ascertained. Further, many studies used small samples, which is a cause for concern, as differential outcomes between small groups are more likely to be a result of chance, thus increasing the likelihood of a false-positive result (Moore, Gavaghan, Tramer, Collins, & McQuay, 1998). This highlights the need for researchers to conduct and report power analyses, to explicitly describe attrition rates, to analyse differences between completer and non-completers, and to include reasons for withdrawal. Additionally, researchers should also state whether they conducted an as-treated or intent-to-treat analysis, and should favour the latter, to ensure that the benefits of randomisation are not lost and that estimates of efficacy are not exaggerated (Hollis & Campbell, 1999).

Moreover, many of the included studies measured numerous outcomes in addition to body image. Researchers should exercise caution as the measurement of multiple outcomes can increase the likelihood that significant results identified for one outcome, among several others, could be due to chance (Bland & Altman, 1995). Finally, the difficulty of blinding staff and participants to group allocation in psychosocial interventions is appreciated. Nevertheless, using independent and external facilitators and outcome assessors is recommended, in addition to the use of centralised randomisation procedures, in order to reduce biases and concurrently improve the methodological quality of future research.

3.4.4 Strengths and limitations

Both narrative reviews and systematic reviews are vulnerable to systematic and random error (Cook et al., 1997). However, while systematic reviews attempt to limit bias and random error through the adoption of rigorous and transparent strategies, narrative reviews fail to ensure a systematic search of the literature, and are consequently open to

selection bias (Cook, Sackett, & Spitzer, 1995). Further, narrative reviews fail to consider the methodological quality of the reviewed studies, despite this compromising the degree of confidence that can be placed in the findings. Such reviews constitute sources of concern when health professionals consult them to inform their own clinical practice, since the findings and recommendations may be based upon incomplete evidence, a biased inclusion of studies, or methodologically poor studies (Neihouse & Priske, 1988).

The main strength of the current study was therefore the conduct of a systematic review, which followed the guidelines both recommended and used by the Cochrane Collaboration themselves. The adoption of such rigorous guidelines has earned Cochrane reviews their global recognition as systematic reviews of the highest standard of evidence upon which to base clinical decisions (The Cochrane Collaboration, 2014). An additional strength of the present systematic review was its evaluation of methodological quality, directed by the Cochrane Collaboration tool for assessing risk of bias. This allowed the identification of effective interventions which were evaluated within methodologically sound studies, and whose findings therefore attracted greater trust compared with those of effective interventions which were evaluated within poorly designed studies, and therefore indicated a high risk of bias. Collectively, these rigorous methods have produced findings which can be reliably interpreted and applied in practice by health professionals.

Nevertheless, one of the limitations of the study was the absence of a meta-analysis. Whilst effect sizes were calculated for each study and allowed comparisons, the mathematical pooling of data from similar studies may achieve a more accurate estimate of the underlying “true effect” than an individual study alone (Garg, Hackam, & Tonelli, 2008). Indeed, meta-analyses are considered one of the highest forms of evidence (Guyatt et al., 2006). However, the studies must be methodologically rigorous, randomised and controlled, for the findings to be definitive (Garg et al., 2008). Otherwise, the combination of methodologically poor studies with those of rigorous conduct can produce inaccurate estimates of the underlying “true effect” (Lau, Ioannidis, & Schmid, 1998). Given that the studies included within the current systematic review were clinically and methodologically heterogeneous, whereby samples differed, multiple measures of body image were employed, and power was inadequate; it was considered inappropriate to conduct a meta-analysis which may produce misleading and inaccurate

findings (Ryan, 2014). Nevertheless, although a meta-analysis was not conducted, one should still exercise caution when interpreting the present findings, given the heterogeneity of the included studies.

An additional limitation of the current study is its non-inclusion of studies without a control group. This may have increased the possibility of publication bias. However, a comprehensive search procedure, whereby 15 databases were searched, may have limited the potential impact of publication bias (Conn et al., 2003). Additionally, the inclusion of non-published grey literature may have reduced the chances of reporting bias, as studies which do not show effective results tend not to be published or take longer to be published (Ioannidis, 1998). Although unpublished studies can often be of poor methodological quality (Hopewell, McDonald, Clarke, & Egger, 2007), the current study evaluated and accounted for the methodological quality of all included studies.

A further reason for caution is the inclusion of studies which did not necessarily conduct randomisation. Such studies have been revealed to overestimate treatment effects by 30-41%, and their possible inclusion in the review may have produced excessively optimistic effects of the interventions (Schulz et al., 1995). Moreover, the systematic review excluded studies which were not written in the English language. This increased the likelihood of language bias, but the impact of language bias is usually small (Jüni, Holenstein, Sterne, Bartlett, & Egger, 2002).

An inevitable limitation of any systematic review is that it does not provide knowledge concerning interventions which fail to meet inclusion criteria. Therefore, interventions which have not been evaluated or did not include a control group were excluded. This raises the possibility that promising body-image-focussed interventions which are being developed, or have proved effective in pre-post comparisons, have been excluded. For example, while Macmillan provides online psychoeducational support regarding ways to adapt to treatment-related appearance changes, and Breast Cancer Care's 'Moving Forward' course briefly explores body image (see 1.10), neither has been rigorously evaluated. However, given that the aim of the systematic review was to identify and compare interventions which improved body image among two target groups, as demonstrated by empirical findings, it was essential that only interventions which had been evaluated within controlled studies were included.

Couple-based interventions were also excluded, consequently eliminating potentially beneficial interventions which could have constituted fruitful avenues for intervention. Empirical support for such interventions among women treated for breast cancer is inconclusive, with some interventions identifying improvements in body image (e.g. Baucom et al., 2009), and others reporting no effects (e.g. Jun et al., 2011). Nevertheless, not all women treated for breast cancer and suffering with body image concerns will necessarily have a partner. A couple-based intervention would consequently only be of relevance for a subgroup of these women, and the opportunity to help others experiencing body image concerns would be missed. Couple-based interventions were therefore considered inappropriate and excluded from the systematic review.

The systematic review did not consider potentially useful interventions within which the mean age of women was below 35 years. The aim of the PhD was to develop an intervention for women treated for breast cancer, who can be younger than 35 years. This cut-off age was chosen in order to accurately reflect the incidence of breast cancer, which is rare below this age, and increases quickly thereafter (Han et al., 2004; UK & 2014). Even so, it is acknowledged that body image interventions developed specifically for women below the age of 35 years may be beneficial. Indeed, body image concerns have been identified among younger women treated for breast cancer (Avis et al., 2005; Fobair et al., 2006), but the relevant papers classified “younger” women with breast cancer as those under 50 years of age. Further, when the papers compared age groups below the age of 50 years, no differences in body image were revealed (Avis et al., 2005; Fobair et al., 2006). Additionally, to the researcher’s knowledge, there are no interventions specifically targeting women treated for breast cancer below the age of 35 years which have been evaluated. With regard to interventions targeting women below this age in the general population, while several have been developed and evaluated (e.g. The Body Project; Stice, Marti, Spoor, Presnell, & Shaw, 2008), the focus of the systematic review was to identify interventions targeting women in midlife, to reflect the age group for the majority of breast cancer diagnoses. These interventions are likely to be more helpful in informing the development of an intervention for women treated for breast cancer, compared with interventions developed for younger adult or adolescent women, as there are body image concerns which are specific to this midlife group (see 1.7).

3.4.5 Implications for intervention development

Characteristics of effective interventions that were shared by both target groups related to intervention format and dose, whereby findings indicated a trend for multi-session, group-based interventions delivered in person.

Turning now to a discussion of implications for intervention approach, findings concerning the interventions targeting women treated for breast cancer were less conclusive than those concerning interventions targeting women in midlife not treated for breast cancer. Despite the importance of developing and disseminating effective, evidence-based interventions to improve treatment-related body dissatisfaction being previously acknowledged (e.g., Helms et al., 2008), the methodological rigour of the evaluative studies which identified improvements was poor, thus limiting confidence in their findings. Further, there were no reports of maintained effects on body image in any study. There was also less clarity with regard to common characteristics among effective interventions targeting women treated for breast cancer.

The only two effective interventions evaluated within methodologically sound studies (Mehnert et al., 2011; Speck, Gross, et al., 2010) adopted physical-activity-based approaches. Physical activity has been found to be beneficial for other physical and psychosocial outcomes in addition to body image, both during, and following, treatment for breast cancer (Fong et al., 2012; Kim, Kang, & Park, 2009). However, at present, there is a stronger evidence base for improvements concerning psychosocial outcomes such as depression and anxiety, compared with that for body image, and related constructs, such as perceived sexual attractiveness (Markes, Brockow, & Resch, 2006; Speck, Courneya, Mâsse, Duval, & Schmitz, 2010). Further, less favourable outcomes of physical activity have been indicated during active treatment, compared with following active treatment (Conn, Hafdahl, Porock, McDaniel, & Nielsen, 2006). Indeed, both physical-activity-based interventions identified in the present review were conducted with women who had completed active treatment.

Physical activity may not be appropriate for all women at different stages of active treatment and may even be harmful. Women can experience mobility limitations, decreased strength, and pain following surgery (Land et al., 2010), or fatigue related to chemotherapy or radiotherapy (Irvine, Vincent, Graydon, & Bubela, 1998; Jacobsen et al., 2007). Moreover, both surgery-related physical impairments (Hidding, Beurskens,

van der Wees, van Laarhoven, & Nijhuis-van der Sanden, 2014) and treatment-related fatigue (Fan et al., 2005) can persist for several years following completion of treatment. In fact, adverse outcomes from physical activity, in relation to injury and worsening fatigue, have been reported in previous evaluative studies among women both during, and following, active treatment (Campbell, Mutrie, White, McGuire, & Kearney, 2005; Courneya et al., 2003; Mock et al., 1997).

Nevertheless, confidence in the present findings is compromised as body image was assessed only at post-test in both studies, precluding conclusions concerning the possibility of sustained effects for these interventions. Additionally, the post-test improvements were of small to medium effect size. A systematic review evaluating an array of physical and psychosocial effects of physical-activity-based interventions among this group highlighted the severe lack of follow-up data among studies (McNeely et al., 2006). Our knowledge of the long-term benefits of physical activity for other psychosocial outcomes among women treated for breast cancer is limited, and thus inspires only limited confidence in physical activity as a source of sustained benefits for body image. Further, it has been concluded that physical activity needs to be incorporated into everyday life to achieve long term benefits on health (Dorn, Vena, Brasure, Freudenheim, & Graham, 2003).

In contrast, there was a stronger evidence base for interventions targeting the body image of women not treated for breast cancer. Indeed, these evaluative studies were of greater methodological rigour, and identified three interventions with sustained improvements on body image, all of which suggested a clear trend with regard to intervention approach, format, and facilitator. All three interventions adopted a psychologist-led, theoretical and therapeutic model-based approach, explicitly and exclusively addressing body image. This approach may be more inclusive for women at different stages of treatment for breast cancer, as it does not exclude individuals who may be physically unable or may not feel comfortable to participate in physical activity. Further, an explicit and exclusive focus on body image will validate the body image concerns of women treated for breast cancer. This is important, particularly given that existing research suggests that health professionals and patients alike will wait for the other to initiate a discussion regarding this topic (Pinto, 2013), leaving some women to feel that health professionals fail to recognise the adverse impact of treatment-related appearance changes on body image and sexuality (McWilliam, Brown, & Stewart, 2000; Rosman, 2004). Additionally, the use of

a theoretical and therapeutic model-based approach which focusses on explicitly altering the way an individual thinks in order to change the way they view their appearance or which explicitly facilitates acceptance of appearance and bodily changes, is likely to have longer lasting effects on body image than physical activity. Finally, a meta-analysis of CBT programmes for body image among the general population identified large effect sizes (Jarry & Ip, 2005) compared with a meta-analysis of exercise interventions which identified small effect sizes (Campbell & Hausenblas, 2009). These findings suggest that theoretical and therapeutic model-based interventions may be better able to improve body image than physical-activity-based interventions.

The findings of this rigorous systematic review therefore support the potential benefits of adopting a theoretical- and therapeutic- based approach for a future intervention targeting women treated for breast cancer, given its demonstration of maintained effectiveness among women in midlife not treated for breast cancer. Further, this approach was adopted by the intervention with the largest post-test effects among women treated for breast cancer (REBT; Fadaei et al., 2011). However, it should be noted that this intervention was evaluated within a methodologically poor study. Other effective interventions adopted either a physical-activity-based or general-support-based approach.

The next study in this thesis examines whether sociocultural influences and psychosocial processes that have been identified as influences on body image among women in midlife are also found to influence body image among women treated for breast cancer. Importantly, this helps us to ascertain whether interventions developed for women in midlife more generally might be useful for consideration for women treated for breast cancer. If the influences are the same, it helps to clarify appropriate targets for intervention. This will constitute Step 2 of Intervention Mapping (Eldredge et al., 2011), whereby important and changeable determinants are identified. The following study also compares the body image of women treated for breast cancer in relation to diagnosis- and treatment- related factors, in order to ascertain whether certain groups are in greater need of the intervention than others. This constitutes Step 1 of Intervention Mapping, within which the needs assessment is conducted. Finally, the next study examines the preferences of women treated for breast cancer themselves, with regard to specific aspects of the intervention (e.g. intervention approach, facilitator). This constitutes Step 3 of Intervention Mapping, and fulfils criteria within the Development phase of the MRC framework (Craig et al., 2008).

Chapter 4: An online survey exploring body image influences among women in midlife

4.1 Introduction

4.1.1 Evaluation of the “Tripartite Influence Model”: identifying targets for intervention

Findings from the systematic review indicated greater promise in the interventions targeting the body image of women in midlife not treated for breast cancer, compared with those targeting women treated for breast cancer. This was in relation to both the effectiveness of the interventions and the methodological quality of the studies within which they were evaluated. The three methodologically sound interventions with maintained improvements on the body image of women in midlife all adopted a theoretical and therapeutic-model based approach (CBT or ACT). Such approaches might also be useful when developing a body image intervention for women treated for breast cancer. Indeed, the UK’s National Institute for Clinical Excellence (NICE), which provides national guidance to improve health and social care, recommends the use of CBT with cancer patients experiencing high levels of anxiety and distress (NICE, 2004). Further, a meta-analysis indicated the beneficial use of CBT to alleviate distress among women with breast cancer (Tatrow & Montgomery, 2006). While fewer studies have evaluated the use of ACT among cancer groups specifically, a meta-analysis demonstrated the effectiveness of this approach on various outcomes (e.g. depression, stress) among the general population, but indicated the need for further rigorous evaluation to increase empirical support for ACT (Öst, 2008).

Nevertheless, before an intervention can be developed for women treated for breast cancer, it is important to identify modifiable influences upon the body image of this group, which can be targeted in a psychosocial intervention. Consequently, theoretical models with empirical support can help to develop interventions.

As previously argued (see 1.6), cancer-specific theoretical models of body image (Fingeret, 2010; Fingeret et al., 2013; White, 2000) are limited by both their slight empirical support and their heavy emphasis upon diagnosis- and treatment- related

factors. These factors are non-modifiable and consequently cannot be targeted within a psychosocial intervention. It was therefore considered unhelpful to empirically test these cancer-specific models of body image. However, as previously proposed (see 1.8), given that women treated for breast cancer tend to be in midlife, it is reasonable to speculate that they may experience similar body image concerns, and thus may be vulnerable to the same influences that have been identified as affecting the body image of women in midlife. There has been empirical support for the role of sociocultural, psychological, and biological influences, within the body image of women in midlife, but these have not yet been examined among women treated for breast cancer, and are absent from theoretical models of for this group. It would therefore be valuable to explore these previously ignored influences, which may constitute modifiable targets for intervention.

Interactions between these influences have been conceptualised within sociocultural theoretical models of body image (see 1.9), including the Tripartite Influence Model (Thompson et al., 1999), the Dual-Pathway Model (Stice, Nemeroff, et al., 1996), and Objectification Theory (Fredrickson & Roberts, 1997). These three models were described and critiqued earlier both in relation to their empirical support, and theoretical components (see 1.9). These aspects were compared for all three models to determine and select the one that had the strongest evidence base and greatest relevance to women treated for breast cancer.

Given their similarities, the Tripartite Influence Model and Dual-Pathway Model were compared with one another first. Both models have been tested in their entirety among younger adult or adolescent women and have received support. Further, given that the majority of components and pathways preceding body dissatisfaction are common to both models, their cross-sectional support among women in midlife was consequently relevant for both models. However, the Tripartite Influence Model includes an additional psychological component: appearance comparisons, which have been considered important for influencing body image among midlife women (Kozar & Damhorst, 2008). Further, the influences of media and family have been indicated as independent predictors of body image among midlife women (e.g. Green & Pritchard, 2003), thus suggesting that it is beneficial for all three sociocultural influences to be examined separately within this model. In contrast, the collective examination of these influences within the Dual-Pathway Model does not allow for potential differences in pathways

between each source. Based on these details, the Tripartite Influence Model was considered more appropriate for consideration with women treated for breast cancer.

The Tripartite Influence Model was subsequently compared with Objectification Theory. No study has tested Objectification Theory in its complete entirety, but cross-sectional support has been found for the isolated pathways preceding body shame and appearance anxiety among young adult women. In contrast, several studies have tested the original and modified Tripartite Influence Model in its entirety among younger groups of women, and have indicated support for nearly all the proposed pathways. With regard to empirical support for the pathways comprising Objectification Theory among women in midlife, cross-sectional studies have supported pathways from self-objectification to body shame and appearance anxiety (e.g. McKinley & Lyon, 2008), but the preceding pathway from objectification experiences remains unexplored.

Moving on to address empirical support for the Tripartite Influence Model among women in midlife, cross-sectional research identified the fit of a modified version of the original model (Slevec & Tiggemann, 2011a). Further, in addition to support indicating separate influences of the media and family upon body image, the receipt of negative comments from both romantic partners and “others” has also been related to body dissatisfaction among this group (Mclaren et al., 2004). Moreover, the influence of romantic partners upon body image has also been demonstrated among women treated for breast cancer (Wimberly et al., 2005). Finally, while the pathways between the three individual sociocultural influences and the two psychological processes remain explored among midlife women, cross-sectional research has supported the subsequent pathways leading to body dissatisfaction (Katz, 2005; Kozar & Damhorst, 2008).

Upon comparison, there is substantially stronger evidence for the Tripartite Influence Model than Objectification Theory among women in midlife. Additionally, the utility and applicability of the Tripartite Influence Model for intervention development has also been demonstrated, whereby factors proposed within the theory (e.g. internalisation of the thin ideal) have underpinned the development of effective interventions for younger age groups (e.g. school-based interventions, such as 'Happy Being Me'; Richardson & Paxton, 2010). This model is therefore promising as a potential input for developing a body image intervention for women treated for breast cancer. Finally, it has already been argued (see 1.8) that like women in midlife, women treated for breast cancer are also

likely to be susceptible to the sociocultural influences and psychological processes proposed within the Tripartite Influence Model. Further, while the nature of the sociocultural influences and psychological processes may differ slightly between women in midlife not treated for breast cancer, and women treated for breast cancer (e.g. pressure to lose weight versus pressure to camouflage, appearance comparisons with fashion models versus appearance comparisons with others treated for breast cancer), arguably the sociocultural sources of influence and the psychological processes for appraising these influences are likely to be the same for both groups of women. Indeed, these groups are likely to be distinct, but not necessarily to the extent that completely different sociocultural influences and psychological processes are relevant for each group.

Nevertheless, it is important to recognise the limitations of the Tripartite Influence Model. These were discussed in detail earlier (1.9.1), and relate to empirical support and conceptual limitations. With regard to the latter, this model fails to consider the additional influence of other factors which have also been found to relate to body dissatisfaction among women in midlife, such as BMI, appearance investment, self-objectification, negative affect, and self-esteem. However, at present, no model encapsulating all these factors exists within the body image field. Nevertheless, researchers have called for the extension of the Tripartite Influence Model to recognise other biological, psychosocial, and social, influences upon body image (Rodgers, Paxton, & McLean, 2014).

While the limitations of the Tripartite Influence Model were taken into account, this model was still considered the most appropriate model to test among women treated for breast cancer, in the light of its promising empirical support and anticipated relevance to this group. This study therefore evaluated the Tripartite Influence Model among women in midlife not treated for breast cancer, and women in midlife treated for breast cancer. If the model was found to fit similarly in both groups, this would indicate the likelihood of common influences on body image. Consequently, the components and techniques of body image interventions that have targeted these influences among women in midlife in the general population may also be appropriate for use with women treated for breast cancer.

In the current study, the original Tripartite Influence Model was extended in two ways. Firstly, the sociocultural source of ‘parents’ was extended to ‘family’. This was to account for the additional influence of other family members, such as children and siblings, and to acknowledge research which has identified family as an important influence upon the body image of women in midlife (Green & Pritchard, 2003). Secondly, a fourth sociocultural source of pressure was added to the model to account for the influence of romantic partners. This decision was supported by research highlighting romantic partners as an important influence upon body image among both groups of women (Mclaren et al., 2004; Wimberly et al., 2005). This was consequently the first study to consider whether pressure from partners might lead to body dissatisfaction via internalisation or appearance comparisons.

This focus of the current study constituted Step 2 of Intervention Mapping (Eldredge et al., 2011), a key stage of intervention development, within which important and changeable influences are identified. These influences are the mechanisms by which body image is altered, and consequently constitute changeable theoretical determinants which are to be targeted in the intervention. This consequently fulfils the criteria outlined in the Development phase of the MRC framework whereby appropriate theory is identified or developed (Craig et al., 2008).

4.1.2 Comparison of body image in relation to diagnosis- and treatment- related factors

The interventions identified in the systematic review (Chapter 3) that targeted women treated for breast cancer tended to include samples within which the majority of women were at a similar stage of treatment (e.g. immediately following surgery, or following completion of active treatment). It was therefore important within the current study to compare the body image of women who varied in relation to diagnosis- and treatment-related factors, including length of time since diagnosis and treatment, the number of surgical procedures received, and the types and combinations of treatments received, in order to ascertain whether body image differed according these factors. This would reveal whether women with particular diagnosis- and treatment- related factors were in greater need of the body image intervention than others, and whether the intervention should be designed for these groups specifically.

Previous research has identified differences in body image with regard to diagnosis- and treatment- related factors (see 1.4), but this was conducted across different samples of women. Nevertheless, this research indicates body image to deteriorate as time since diagnosis and treatment increases (Moreira & Canavarro, 2010). Further, higher levels of body dissatisfaction have been identified among women who have undergone certain forms and combinations of treatment. These include mastectomy alone compared with lumpectomy or subsequent breast reconstruction (Al-Ghazal, Fallowfield, et al., 2000), delayed compared with immediate reconstruction (Al-Ghazal, Sully, et al., 2000), and adjuvant treatment (chemotherapy or radiotherapy) compared with no adjuvant treatment (Falk Dahl et al., 2010; Raggio et al., 2014).

This aspect of the study was consistent with Step 1 of Intervention Mapping (Eldredge et al., 2011), within which the needs assessment is conducted. This facilitates the identification of the group in greatest need of the intervention.

4.1.3 Exploration of intervention preferences

The systematic review (Chapter 3) adopted a rigorous approach in order to identify effective interventions evaluated in methodologically sound studies and their associated attributes (e.g. intervention approach, facilitator). However, both the value of PPI in research (Staley, 2009; see 2.4), and the importance of identifying and addressing the unmet needs of people with cancer, has been emphasised (Harrison, Young, Price, Butow, & Solomon, 2009). While Breast Cancer Care has called upon policy makers, commissioners, and service planners, for the development of psychosocial interventions to help women come to terms with treatment-related appearance changes, the perceived need for this specific support has not been quantified. It was therefore considered important to consult the target group of the future intervention (i.e. women treated for breast cancer) regarding both the perceived need for an intervention focussing on body image, and their own preferences in relation to aspects of the intervention. Understanding the needs of women treated for breast cancer will inform the format and features of the intervention to be developed, thus increasing the likelihood of its acceptability, while additionally maximising the chances of improvements in body image.

This part of the study constituted both Step 1 and Step 3 of Intervention Mapping (Eldredge et al., 2011), whereby the needs assessment is conducted in the former, and intervention ideas are generated with the planning group in the latter. These findings

together with those from the systematic review will help inform intervention development.

4.1.4 Objectives

- To evaluate and compare the Tripartite Influence Model among two groups of women in midlife: those treated for breast cancer, and those not treated for breast cancer, in order to identify potentially common influences on body image, which could serve as possible targets for a body image intervention for women treated for breast cancer.
- To compare levels of body dissatisfaction between women in relation to diagnosis- and treatment- related factors (length of time since diagnosis and treatment, the number of surgical procedures received, and types and combinations of treatments received) to determine whether body image concerns are greater for women with particular diagnosis- and treatment- related factors. This will reveal whether the intervention needs to target a specific group.
- To explore the needs and preferences of women treated for breast cancer with regard to a body image intervention, in order to incorporate these when developing the intervention.

4.1.5 Research questions

- Does the Tripartite Influence Model fit similarly in both groups of women: those treated for breast cancer, and those not treated for breast cancer, and consequently provide common targets for intervention?
- Are levels of body dissatisfaction different for women who vary in relation to diagnosis- and treatment- related factors?
- What are the needs and preferences for body image support among women treated for breast cancer?

4.2 Method

4.2.1 Design of the study

The study adopted a cross-sectional quantitative design, whereby a survey comprised of primarily close-ended questions was completed online. This design was concordant with the pragmatic epistemological approach adopted in the thesis. Accordingly, consistent

with the overarching mixed-methods multi-phase design which was employed to satisfy the overall thesis aim of developing an intervention (see 2.3.3), the use of quantitative methods was indicated to answer the subset of research questions within the current study. Specifically, a quantitative design was adopted as it enabled the empirical testing of the Tripartite Influence Model in both groups of women. The use of quantitative methods also allowed an empirical comparison of the levels of body dissatisfaction between women differing in diagnosis- and treatment- related factors. Finally, a quantitative examination of intervention preferences made it possible to capture the opinions of as many women treated for breast cancer as possible, consequently increasing the likelihood of the generalisability of the identified preferences to others who have received treatment.

The survey was conducted online, as opposed to face-to-face or by paper, since the internet provides the opportunity to reach a greater number of individuals from unique populations, such as women in midlife, and those of which who have been treated for breast cancer, than does the use of “offline” methods (Garton, Haythornthwaite, & Wellman, 1999). It also provided access to a large and geographically diverse sample size over a short period of time (Wright, 2005). A larger data set increases confidence in the findings, while appealing to stakeholders such as research and programme funders, policy makers, and health care professionals, who favour statistics based on large numbers (Johnson & Onwuegbuzie, 2004). Furthermore, participants may feel more comfortable sharing their experiences and opinions online where they cannot be identified, than face-to-face with the researcher (Stanton, 1998). Online methods are therefore particularly useful when researching sensitive issues, as in the present study (Coomber, 1997). They also provide greater convenience for participants, who can complete the survey at a time convenient for them, and for the researcher, since data is instantly collected, automatically coded if quantitative, and stored online, saving costs and time spent sending and receiving questionnaires, and inputting and coding data (Wilson & Laskey, 2003). Finally, studies have indicated a higher item completion rate among online surveys compared with paper surveys, particularly in relation to open-ended questions (Denscombe, 2009; Ilieva, Baron, & Healey, 2002).

4.2.2 Design of the online survey

The survey was administrated online using the platform ‘Qualtrics’, which was selected for its operational capabilities. Qualtrics permits questions of various structures, including multiple-choice, single-response, multiple-response, and open-ended questions; all of which were needed in the present study. Additionally, it makes it possible to control the order in which participants answer questions, consequently not allowing them to look ahead to later questions, as would be possible in a paper survey. This reduces survey bias (Evans & Mathur, 2005). Relatedly, Qualtrics allows the effective use of “funnelling” questions, thus ensuring that participants only answer questions which pertain specifically to them. This makes the process simpler for the participant, as potentially confusing instructions (e.g. “If you answered no to question 9, then go to question 16”) are not needed. This also means that the survey length is perceived as shorter by the participant. Finally, it allows participants to progress through the survey at their preferred speed, and permits them to pause and continue from the same point at a later date.

Participants were provided with a simplified web link to access the online survey. The online survey was comprised of the participant information page (Appendix 3), the consent form (Appendix 4), the survey questions (Appendix 5), and the debrief page (Appendix 6). The final page asked whether participants wished to receive a summary of the findings and be contacted regarding future research participation opportunities. They were also given the opportunity to enter a prize draw, as offering incentives to potential participants encourages participation and acknowledges their contribution to the study (Huby & Hughes, 2001). This is a common method for offering an incentive in online research, and increases both inclination to participate and rates of completion (Bosnjak & Tuten, 2003).

Careful thought was directed towards selecting the most appropriate measures for psychosocial variables being explored. Several important factors were taken into account, such as their psychometric properties, including validity (construct validity) and reliability (test-retest reliability, internal consistency). Validated measures were preferred, so as to facilitate comparison of findings with other studies, as were measures which had been previously used among women in midlife. Finally, the length of measures was also considered. The selected or developed outcome measures and their

associated properties are discussed later (4.2.5). Participants were provided with an open text box after every measure, in case that they wished to elaborate on their answers. However, a formal in-depth qualitative analysis (e.g. thematic analysis) was not conducted as this was considered beyond the scope of the study. This qualitative data will be analysed in post-doctoral studies.

In addition to the factors proposed within the Tripartite Influence Model (including the added sociocultural influence of ‘partners’), various other variables which have been proposed as influences on body image among women in midlife were also measured within the survey. These included appearance investment, ageing anxiety, acceptance of ageing-related appearance changes, anxiety, depression, self-esteem, optimism, and self-compassion. However, it was beyond the scope of the PhD to examine these in detail, and plans are in place to analyse this data in post-doctoral studies (see Chapter Seven). Nevertheless, despite the number of outcome measures, the survey was not designed to be excessively long or arduous for two reasons. Firstly, research demonstrates a negative relationship between online survey length and participant completion rates (Cook, Heath, & Thompson, 2000). Secondly, women undergoing active treatment for breast cancer often experience fatigue, and may consequently find survey completion tiring. However, feedback relating to the survey content was sought from Breast Cancer Care’s Service User Research Partnership (SURP), which is comprised of women who have been diagnosed with breast cancer. The survey length and questions were deemed appropriate. Further, the information page informed participants that completing the survey would take approximately 30 minutes.

4.2.3 Participants

4.2.3.1 Eligibility criteria

The eligibility criteria for the study were:

Inclusion criteria:

- English speaking/literate women, as resources were not available to translate survey questions into multiple languages, and doing so would have impacted on the psychometric properties of the measures.

- Women aged 35 years and above, to represent the beginning of the age bracket commonly defined as midlife (Hockey & James, 2003; Mangweth-Matzek et al., 2014).
- Women with or without a personal history of breast cancer.

Exclusion criteria:

- Women who had received a diagnosis of cancer, other than that of breast cancer.
- Women below the age of 35 years.

4.2.3.2 Sample size

The minimum sample size necessary for the current study was determined using two advocated rules for estimating sample size requirements in structural equation modelling (SEM). The first rule recommends at least 15 cases per measured variable or indicator (Stevens, 2012). Given that there were 13 measured variables or indicators in the estimated model, this implied the need for 195 participants. This was close to the median sample size ($N=198$) attained within 72 SEM articles identified in a review (Breckler, 1990). However, fewer than 200 cases has been argued to be too small when analysing a complex model, such as the model evaluated within the current study (Kline, 2005). The second rule indicates the need for 5 or 10 cases per estimated parameter (Bentler & Chou, 1987). Given that there were 55 parameters in the estimated model (comprising 27 variances and 28 covariances), this indicated that 275 or 550 participants were needed. It was consequently reassuring that a total sample size of 492 participants (323 women not treated for breast cancer, 169 women treated for breast cancer) was analysed in the SEM analyses.

4.2.4 Recruitment strategy

Several different approaches were adopted to maximise recruitment. A snowball sampling method was initially used whereby the study and its Qualtrics link were advertised on the university's webpage and using CAR's social media (Facebook and Twitter). Organisations who were invested in either women's health (e.g. Women's Health Magazine, Womenhealth.gov, NIH Women's Health), body image (e.g. Body Gossip, Endangered Bodies Be Real Campaign), or breast cancer (e.g. Breast Cancer Care, Breast Cancer Now, Breast Cancer Haven) were individually targeted on Twitter

and asked to retweet the study's online link. These organisations and other individuals then reposted, retweeted, or forwarded the advertisement to people who might be interested in taking part.

All Women's Institutes in the South West of England were also invited to take part in the study. These are world-wide community-based organisations for women, and constitute the largest women's voluntary organisation in the UK (<https://www.thewi.org.uk/>). Several emails were received from Women's Institute (WI) members who had been told about the study and were keen to take part. The researcher was also invited to attend a meeting at a local WI within Bristol to discuss the research, which served as an opportunity to hand out cards (Appendix 7) to members which included the study's Qualtrics link. Administrators from online parenting networks Mumsnet (<http://www.mumsnet.com/>) and Netmums (<http://www.netmums.com/>) were contacted, and provided direction towards the most appropriate forum/thread within which to advertise the study (Appendix 8). These approaches were pursued in order to recruit both women in midlife who have, and have not, undergone treatment for breast cancer.

A number of different breast cancer charities within the UK were approached in order to assist with recruitment: Breast Cancer Care (London), Haven (London, Wessex, Yorkshire, Worcester, and Hereford), and Maggie's (16 centres nationwide). See Appendix 9 for details concerning the nature of each individual charity. All three charities were keen to promote the online survey to their service users. Breast Cancer Care advertised the study in their monthly newsletter and online forum, and on twitter. Both Haven and Maggie's agreed to display posters (Appendix 10) advertising the study, in addition to cards for people to take away, at all their centres. The study was also discussed with staff members at Maggie's Swansea centre, who were very interested in the research and actively encouraged their members to participate.

4.2.5 Measures

4.2.5.1 Demographic information

The following demographic information was collected from participants: age, ethnicity, relationship status, number of children, employment status, education background, and country of residence.

4.2.5.2 Breast cancer information

The following information was collected from participants who had undergone treatment: type of breast cancer, length of time since diagnosis, and types and timing of surgeries and adjuvant treatments. Participants were able to select more than one type of surgery and adjuvant treatment, since it was likely that they would have received a combination of treatments.

4.2.5.3 BMI

BMI was calculated using self-reported height and weight (weight in kilograms divided by the square of the height in metres). However, participants could indicate these using their measurement units of choice (i.e. kilograms or stones/pounds for weight, metres/centimetres or feet/inches for height), and these were converted to kilograms and metres upon analysis. It was important to collect and control for the effect of BMI as elevated body mass is an indicated risk factor for body dissatisfaction among women in midlife (McLaren et al., 2003).

4.2.5.4 Sociocultural influences

Based on the eight-item Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996), a four-item scale was developed to assess perceptions of pressure to alter appearance from sociocultural sources. The four sociocultural sources examined in the current study were the media, partner, friends, and family, all of which are assessed in the PSPS. Given that appearance-related concerns beyond weight and shape are experienced by women in midlife (e.g. Pruis & Janowsky, 2010) and those who have received treatment for breast cancer (e.g. Helms et al., 2008), a single item measured perceived pressure from the particular sociocultural source to alter appearance more generally (e.g. “I have felt pressure from the media [TV, films, magazines, newspapers] to change my appearance”). This replaced the focus of pressure to lose weight and be thin in the original PSPS. Each item in the adapted measure was rated on a 5-point Likert scale (1 = definitely disagree, 5 = definitely agree), with higher scores indicating higher levels of perceived pressure to alter appearance. Internal reliability of the modified 4-item scale was adequate ($\alpha = 0.76$) among both groups of women in the present study. However, each item served as a separate variable. As this was the first use of the modified 4-item scale, there was no previous validity information. However, as noted, the modified scale was based strongly on the PSPS, which has demonstrated high internal consistency ($\alpha = 0.87$) and excellent two-week test-retest reliability ($r = 0.93$) among young adult women

(Stice, Ziemba, et al., 1996). The PSPS has also demonstrated good convergent validity with measures of body image and disordered eating (Stice, Ziemba, et al., 1996).

4.2.5.5 Internalisation of the thin-ideal

The nine-item Internalisation subscale of the Sociocultural Attitudes Towards Appearance Questionnaire (SATAQ-3; Thompson et al., 2004) was used to assess internalisation of the thin-ideal. This instrument indicates endorsement of messages from the media which promote unrealistic beauty ideals, and striving towards these ideals. An example item is, “I compare my appearance to the appearance of people in magazines”. The items are rated on a 5-point Likert scale (1 = definitely disagree, 5 = definitely agree), and summed and averaged to produce a score ranging from 1 to 5, with higher scores indicating higher levels of internalisation. Thompson et al (2004) reported good construct validity and convergent validity of the SATAQ-3 subscales with measures of body image and eating disturbance, and high internal consistency of the subscale ($\alpha = 0.92-0.96$). Internal consistency was also high when McLean et al. (2011) later tested the subscale with midlife woman ($\alpha = 0.95$). The Cronbach’s alpha value for the current sample was 0.90 among women who had undergone treatment for breast cancer, and 0.94 among women who had not.

4.2.5.6 Upward appearance comparisons

The ten-item Upwards Comparison subscale (UPACS) from the Upwards and Downwards Physical Appearance Comparison Scale (UDPACS; O’Brien et al., 2009) was used to assess the tendency to make upward appearance comparisons. Only upward comparisons were assessed, as this type of comparison is theorised as the most likely to result in body dissatisfaction (Festinger, 1954). Further, cross-sectional research with women in midlife (Kozar & Damhorst, 2008) and longitudinal research with adolescent girls (Carlson Jones, 2004; Chen & Jackson, 2009) has identified the proposed relationship between the increased tendency to engage in upward appearance comparisons and body dissatisfaction. An example item of the Upwards Comparison subscale is “I compare myself to those who are better looking than me rather than those who are not”. Items are rated on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), and summed and averaged to produce a score ranging from 1 to 5, with higher scores indicating a greater tendency to compare oneself with targets considered more physically attractive. O’Brien et al (2009) reported the UPACS to demonstrate

good construct validity, incremental validity, test-retest reliability ($r = 0.79$), and excellent internal consistency ($\alpha = 0.94$) among young adults. Internal reliability for UPACS in the current sample was 0.96 among women who had undergone treatment, and 0.95 among women who had not.

4.2.5.7 Body image

Given the multidimensional definition of body image adopted in the thesis (“a person’s perceptions, thoughts and feelings about his or her body” ; Grogan, 2008, p. 3), it was important to employ outcome measures which assessed the different aspects of this definition. The Appearance Evaluation subscale of the Multidimensional Body-Self-Relations Questionnaire (MBSRQ; 3rd revision; Cash, 2000) was selected as it assesses an individual’s thoughts and perceptions, concerning their overall appearance. The Body Areas Satisfaction Scale of the MBSRQ (3rd revision) was also selected as it assesses an individual’s feelings concerning isolated aspects of their physical appearance (in addition to one item concerning overall appearance). Finally, the Body Appreciation Scale (Avalos, Tylka, & Wood-Barcalow, 2005) was selected as it assesses an individual’s positive thoughts and feelings regarding their body, regardless of physical appearance. Further, as the planned statistical analysis was structural equation modelling (see 4.2.8 for details regarding analytical approach), the three measures could be used as multiple indicators to estimate a latent variable of the multidimensional construct (body image). The use of multiple indicators to estimate a latent variable also attempts to control for measurement error within the model (Kelloway, 1998). This approach has been used previously in the field (Menzel et al., 2011), whereby a latent variable of body image was indicated by the Appearance Evaluation subscale and the Body Areas Satisfaction Scale of the MBSRQ (Brown et al., 1990).

Multidimensional Body-Self-Relations Questionnaire (MBSRQ; 3rd revision; Cash, 2000): Appearance Evaluation subscale

The seven-item Appearance Evaluation subscale was used to assess thoughts, feelings, and perceptions regarding one’s physical appearance as a whole; for example, “My body is sexually appealing”. Items were rated on a 5-point Likert scale (1 = definitely agree, 5 = definitely disagree), summed and averaged to produce a total score ranging from 1 to 5, with higher scores indicating great dissatisfaction with physical appearance. The Appearance Evaluation subscale demonstrated good internal consistency of 0.88 (Brown

et al., 1990) and adequate 1 month test-retest reliability ($r = 0.81$; Cash, 2000) among young adult women. Further, it demonstrated good convergent validity with measures of overall psychological adjustment and measures of eating disorders (Keeton, Cash, & Brown, 1990). The Cronbach's alpha value for the subscale in the present sample was 0.89 for women who had undergone treatment for breast cancer, and 0.90 for women who had not.

Multidimensional Body-Self-Relations Questionnaire (MBSRQ; 3rd revision; Cash, 2000): Body Areas Satisfaction Scale

The nine-item Body Areas Satisfaction Scale (BASS) was used to assess satisfaction with discrete aspects of one's appearance, including the face, hair, lower torso, mid torso, upper torso, muscle tone, weight, height, and overall appearance. Satisfaction with each aspect was indicated using a 5-point Likert scale (1 = very satisfied, 5 = very dissatisfied), and summed and averaged to produce a score of 1 to 5, with higher scores indicating greater dissatisfaction with most aspects of appearance. The BASS has been reported to have adequate internal consistency ($\alpha = 0.73$), and adequate 1 month test-retest reliability of 0.74 (Cash, 2000) among young adult women. Good internal reliability ($\alpha = 0.81$) of the BASS has been previously reported with women in midlife (Slevec & Tiggemann, 2010), while Cronbach's alpha in the present sample was 0.83 for women who had undergone treatment, and 0.85 for women who had not.

Body Appreciation Scale (Avalos et al., 2005)

The 13-item Body Appreciation Scale (BAS) was used to assess positive body image by addressing thoughts, feelings, and behaviours towards the body, which are irrespective of physical appearance. More specifically, the scale evaluates acceptance of the body regardless of weight, shape, and imperfections, respect towards the body by attending to its needs, and rejection of unrealistic appearance ideals transmitted by the media. An example item of the scale is "Despite its flaws, I accept my body for what it is". Items were rated on a 5-point Likert scale (1 = never, 5 = always), and summed and averaged to produce a total score ranging from 1 to 5, where higher scores indicate higher levels of body appreciation. Avalos et al (2005) reported unidimensionality of the BAS, in addition to good construct validity, 3-week test-retest reliability ($r = 0.90$), and internal consistency ($\alpha = 0.91-0.94$) among young adult women. In the present sample, internal reliability was high for both women who had undergone treatment ($\alpha = 0.93$) and women

who had not ($\alpha = 0.94$). The direction of the scale was however reversed for the present study, whereby higher scores represented lower levels of body appreciation. This ensured consistency in the directions of scales, and hypothesised relationships between them.

4.2.5.8 Exploration of intervention preferences

Women treated for breast cancer were asked whether they had received any type of support specifically focussed on improving their body image since their diagnosis. Those who answered “yes” were asked to provide the following information, and were allowed to indicate more than one answer to each question: the point at which they received the support (upon diagnosis; the beginning of treatment; during treatment; after treatment; during the whole journey), the support received (one-to-one therapy; small self-help group; structured small group programme led by a trained facilitator; self-help material or information; physical exercise; practical support e.g. lingerie options), from whom they received the support (doctor; specialist breast cancer nurse; psychologist/counsellor; peers), and whether they found the support beneficial. All women treated for breast cancer were asked whether they felt support focussing on body image would be of benefit to themselves or others. Those who answered “yes” were asked their preferences regarding the same intervention aspects as the previous question. They were also given a space to indicate any additional features they felt would be important to take into account for a programme focussing on body image.

4.2.6 Ethical approval

Potential ethical issues associated with participation, such as feeling distressed, were considered to be minimal. However, several support links for support groups and charities which are designed to support individuals who feel distressed or experience body image concerns (e.g. Mind, Breast Cancer Care; see Appendix 6) were provided at the end of the survey.

Further, participants were required to give fully informed consent before participation in the study, and were reassured of both their anonymity and confidentiality concerning the information they would provide. Participants were asked to provide their email address if they wished to be entered into the prize draw, but were reassured that this would be stored separately and not linked to their data or any self-identifying information, and deleted when the winners were drawn. Ethical approval was sought and obtained from

the Faculty of Health and Applied Sciences Research Ethics Committee at the University of the West of England, Bristol (REF No: HAS/14/03/63). Approval was also attained from Breast Cancer Care, Haven, and Maggie's.

4.2.7 Data collection

Online data collection spanned four months, from the 6th of May until the 9th of September, 2014. Data was downloaded into SPSS, a statistical programme within which subsequent analyses were conducted.

4.2.8 Statistical analyses

Following data screening, all analyses were conducted comparing the two groups of women in midlife (those treated for breast cancer, and those not). Participant demographic information was firstly examined and compared for significant differences between groups using t-tests and chi-square (χ^2) tests. Diagnosis- and treatment- related information was also summarised for the group treated for breast cancer. A multivariate analysis of variance (MANOVA) was then conducted to compare the two groups on the variables within the Tripartite Influence Model. Subsequently, bivariate correlations between these variables were explored and compared between the two groups, while controlling BMI in one set of analyses, and not controlling it in the other. Finally, structural equation modelling (SEM) was used to evaluate and compare the fit of the Tripartite Influence Model to each group of women. This involved examining the measurement model, followed by evaluation of the structural model. Various indices were adopted to assess the model's goodness of fit, including the chi-square (χ^2) test, Bentler's comparative fit index (CFI), and the root mean square error of approximation (RMSEA), all of which are recommended for use with small samples (Bentler & Yuan, 1999).

SEM was selected as the preferred analysis, given its ability to model relationships between many independent and dependent variables simultaneously (Anderson & Gerbing, 1988). In this respect, SEM is superior to first generation regression models, such as ANOVA, MANOVA, and linear regression, which are only able to analyse one layer of relationships between independent and dependent variables at once (Gefen, Straub, & Boudreau, 2000). Consequently, the multiple pathways hypothesised within the Tripartite Influence Model can be modelled in one analysis. Further, SEM allows the

testing of complex causal pathways which are more likely to reflect real-world processes than simple correlation-based models, and thus is better suited to inform theory and practice (Bollen, 1989; Dubin, 1976). In addition, the joint analysis of the measurement and structural model within SEM permits a more rigorous analysis of the hypothesised model than regression techniques (Bullock, Harlow, & Mulaik, 1994). Finally, SEM is able to provide more information concerning the degree to which the proposed model fits the data, compared with first generation regression models (Gefen et al., 2000).

4.3 Results

4.3.1 Data screening

It is unusual to obtain complete datasets, but Tabachnick and Fidell (2007) emphasise the importance of determining the amount of data missing, and the pattern by which it is missing. Preliminary examinations of the raw data (i.e. items comprising the scales) revealed that the overall level of missing data was 0.40% among women treated for breast cancer, and 0.73% among women not treated for breast cancer. Little's MCAR test confirmed that there were no statistically significant deviations from randomness in either the dataset of women who had not undergone treatment ($\chi^2 = 15414.408$, $df = 15182$, $p = 0.092$), or that of women who had ($\chi^2 = 1856.015$, $df = 13080$, $p = 1.000$). T-tests and chi-square tests were conducted on all variables (demographics and model variables) to examine whether there were any differences between missing and non-missing data. Applying Bonferroni corrections to reduce the chance of Type 1 errors, t-tests found no significant differences between missing and non-missing data on any of the variables ($p < 0.001$). According to Tabachnick and Fidell (2007), if missing data represent less than 5% of the total and are missing in a random pattern from a large data set, nearly all procedures for handling missing values will produce similar results. Given that this was the case, it was decided not to impute the missing values, and instead to analyse the available data.

Univariate assumptions were assessed by examining histograms which displayed the distribution of the variables, and then referring to the skewness and kurtosis values for those which appeared to deviate from normality. Kline (2005) emphasises that in SEM, absolute skewness values outside +3 and -3, and kurtosis values outside -10 and +10 can be problematic. No variables had significant skewness or kurtosis. Univariate outliers were examined using z -scores, whereby values outside -3.30 and +3.30 were indicated as

outliers (Tabachnick & Fidell, 2007). Four outliers were identified for BMI (3 among women who had not undergone treatment, and 1 among women who had), but visual examination of the data revealed these outliers not to affect the distribution. It was therefore decided to retain the outliers as they would be accommodated by robust statistical methods (Schumacker & Lomax, 1996). Further, some researchers contend that the data is more likely to characterise the population as a whole if outliers are retained (Orr, Sackett, & Dubois, 1991).

Multivariate assumptions were assessed by initially examining multicollinearity within the data. The variables affected by multicollinearity were the three measures employed to indicate body image (Appearance Evaluation Subscale, Body Areas Satisfaction Scale, and Body Appreciation Scale). The high correlations between the variables were expected, given that the scales measure conceptually distinct but related aspects of body image (Avalos et al., 2005). This was therefore not considered a problem for subsequent analyses. Furthermore, all variables had a tolerance value above 0.01, and variation inflation factor below 10, suggesting no indication of multicollinearity (Kline, 2005). Three multivariate outliers were identified using Mahalanobis' distance, but no cases were above 1 for Cook's distance, suggesting that these were not influential cases (Cook & Weisberg, 1982). The normal-probability-plot of the standardised residuals displayed data points in a reasonably straight line, which indicates no major deviations from normality. The scatterplot of standardised residuals was also examined for homoscedasticity, which was indicated due to a rectangular distribution of residuals, thus suggesting that the assumption of multivariate normality had been met. This was further strengthened by Levine's test of homogeneity of variances ($p = 0.147$), in addition to the Brown-Forsythe test and Welch test ($p = 0.232$ in both), all three of which indicated homoscedasticity. Finally, there was no indication of outliers from this plot, as standardised residuals were between -3 and +3 (Tabachnick & Fidell, 2007).

4.3.2 Participant demographic information

The total sample size was 492 women, comprised of 169 who had undergone treatment for breast cancer and 323 who had not. Participant demographic information is summarised in Table 4.1, which also includes the results of t-tests and chi-square (χ^2) tests to examine any demographic differences between the two groups. Women treated for breast cancer were significantly older than the other group of women ($p = 0.004$),

however, while their BMI was also higher, there was no significant difference on this variable. In both groups, the majority of women were of white ethnicity, living within the UK, and married with children. Further, while most women in both groups were educated at least to undergraduate degree level, there were significant differences between the two groups ($p = 0.000$), whereby women who had undergone breast cancer treatment were less educated than those who had not. Significant differences were also identified between the two groups with regard to employment status ($p = 0.000$). Women treated for breast cancer were less likely to be working full-time, which is unsurprising, given that they are likely to have had their careers interrupted due to the disease. Both aspects (education level and employment status) were indicative of socio-economic status. Furthermore, while the majority of women were post-menopausal in both groups, unsurprisingly there were more women with medically induced menopause among those who had undergone breast cancer treatment ($p = 0.000$).

Table 4.1 Demographic information of participants

Demographic Information	Women: Breast Cancer Treatment (n=169)	Women: No Breast Cancer Treatment (n=323)	Total Sample (N=492)	Significance Level of Differences (p value)
Age (years)				
Mean (SD)	49.9 (8.26)	47.6 (8.44)	47.6 (8.40)	$p = 0.004^*$
Range	35-73	35-71	35-73	
BMI				
Mean (SD)	26.8 (5.93)	26.3 (6.50)	26.5 (6.50)	$p = 0.563$
Range	17.6-61.3	18.7-46.2	17.6-61.3	
Ethnicity n (%)				
White	165 (97.6)	307 (95)	472 (65.9)	$p = 0.454$
Asian/Asian British	1 (0.6)	7 (2.2)	8 (1.6)	
Black/African/Caribbean/Black British	1 (0.6)	1 (0.3)	2 (0.4)	
Mixed/Multiple Ethnic Group	2 (1.2)	5 (1.5)	7 (1.4)	
Other	0 (0)	3 (0.9) ¹	3 (0.6)	

Demographic Information	Women: Breast Cancer Treatment (n=169)	Women: No Breast Cancer Treatment (n=323)	Total Sample (N=492)	Significance Level of Differences (p value)
Relationship status n (%)				
Single	24 (14)	26 (8)	50 (10.2)	$p = 0.317$
Married	104 (61.5)	207 (64.1)	311 (63.2)	
In a relationship	18 (10.7)	49 (15.2)	67 (13.6)	
Divorced	14 (8.3)	27 (8.4)	41 (8.3)	
Separated	3 (1.8)	4 (1.2)	7 (1.4)	
Widowed	3 (1.8)	5 (1.5)	8 (1.6)	
Prefer not to say	1 (0.6)	0 (0)	1 (0.2)	
Other	2 (1.2) ²	5 (1.5) ³	7 (1.4)	
Employment status n (%)				
Full time	66 (39.1)	166 (51.4)	232 (47.2)	$p = 0.000^*$
Part time	48 (28.4)	101 (31.3)	149 (30.3)	
Retired	23 (13.6)	15 (4.6)	38 (7.7)	
Student	0 (0)	7 (2.2)	7 (1.4)	
Unemployed	8 (4.7)	10 (3.1)	18 (3.7)	

Demographic Information	Women: Breast Cancer Treatment (<i>n</i> =169)	Women: No Breast Cancer Treatment (<i>n</i> =323)	Total Sample (<i>N</i> =492)	Significance Level of Differences (<i>p</i> value)
Prefer not to say	3 (1.8)	0 (0)	3 (0.6)	
Other	21 (12.4) ⁴	24 (7.4) ⁵	45 (9.1)	
Education level n (%)				<i>p</i> = 0.000*
GCSE/O-Level or equivalent	24 (14.2)	22 (6.8)	46 (9.3)	
A Level or equivalent	14 (8.3)	19 (5.9)	33 (6.7)	
Higher Education Certificate or Diploma	33 (19.5)	48 (14.9)	81 (16.5)	
Undergraduate Degree	55 (32.5)	101 (31.3)	156 (31.7)	
Master's Degree	29 (17.2)	79 (24.5)	108 (22)	
PhD or equivalent	5 (3)	36 (11.1)	41 (8.3)	
No qualifications	3 (1.8)	1 (0.3)	4 (0.8)	
Other	6 (3.6) ⁶	17 (5.3) ⁷	23 (4.7)	
Residence n (%)				<i>p</i> = 0.573
Within UK	163 (96.4)	311 (96.3)	474 (96.3)	
Outside UK	6 (3.6)	12 (3.7)	18 (3.7)	

Demographic Information	Women: Breast Cancer Treatment (n=169)	Women: No Breast Cancer Treatment (n=323)	Total Sample (N=492)	Significance Level of Differences (p value)
Menopausal status n (%)				
Postmenopausal (no periods for over 12 months)	60 (35.9)	95 (30.7)	155 (32.6)	$p = 0.000^*$
No period in past 12 months	7 (4.2)	13 (4.2)	20 (4.2)	
Bleeding in past 12 months but not in past 3 months	4 (2.4)	11 (3.6)	15 (3.2)	
Experiencing period irregularity	20 (12)	42 (13.6)	62 (13)	
Premenopausal	17 (10.2)	139 (45)	156 (32.8)	
Medical menopause	59 (35.3)	9 (2.9)	68 (14.3)	
Pregnancy status n (%)				
Pregnant before	139 (82.2)	257 (79.8)	396 (80.7)	$p = 0.516$
Never been pregnant	30 (17.8)	65 (20.2)	95 (19.3)	
Children status n (%)				
Have children	134 (79.9)	239 (74.5)	373 (76.1)	$p = 0.233$
No children	35 (20.7)	82 (25.5)	117 (23.9)	

Demographic Information	Women: Breast Cancer Treatment (<i>n</i>=169)	Women: No Breast Cancer Treatment (<i>n</i>=323)	Total Sample (<i>N</i>=492)	Significance Level of Differences (<i>p</i> value)
Number of children n (%)				
1	30 (22.4)	47 (19.5)	77 (20.5)	<i>p</i> = 0.539
2	68 (50.7)	136 (56.4)	204 (54.4)	
3	27 (20.1)	36 (14.9)	63 (16.8)	
4	7 (5.2)	15 (6.2)	22 (5.9)	
More than 4	2 (1.5)	7 (2.9)	9 (2.4)	

* Significant differences between groups ($p < 0.005$)

¹ Other: Welsh, Chinese

² Other: long term partnership, civil partnership

³ Other: living together, civil partnership, engaged

⁴ Other: self-employed, homemaker, sickness leave, unable to work due to disability

⁵ Other: self-employed, homemaker, volunteer, unable to work due to disability, carer, on sabbatical, maternity leave, multi-jobs, semi-retired, temporary worker

⁶ Other: postgraduate certificate/diploma, teaching certificate/qualification, high school

⁷ Other: professional qualification, postgraduate certificate/diploma, teaching certificate/qualification, nursing course

4.3.3 Breast cancer diagnosis and treatment information

Information regarding the diagnosis and treatment of affected women is summarised in Table 4.2. More than two thirds of women were diagnosed with invasive breast cancer and nearly all of the women had undergone one surgical procedure, while the minority had undergone two procedures (e.g. lumpectomy followed by mastectomy at a later date). Given the complex and multifaceted treatments used within breast cancer, it was not possible to account for every single potential treatment pathway. Participants were consequently allowed to select multiple options with regard to type of surgery, to account for women who had received more than one surgical procedure. Findings revealed that unilateral mastectomy was more common than bilateral mastectomy, and that reconstruction (particularly immediate) was more common than mastectomy alone. Nearly all women underwent surgery, while the majority also received chemotherapy or radiotherapy. On average, women were within four years of diagnosis of treatment.

Table 4.2 Diagnosis and treatment information of women treated for breast cancer

Diagnosis and Treatment Information	Women: Breast Cancer Treatment (<i>n</i> =169)
Type of cancer <i>n</i> (% of total sample)	
Invasive	129 (76.3)
Non-invasive	25 (14.8)
Not sure	15 (8.9)
Number of surgical procedures (% of total sample)	
1	143 (84.6)
2	17 (10.1)
3	2 (1.2)
Type of surgery <i>n</i> (% of total sample) ¹	
Lumpectomy or wide local excision	61 (36.1)
Unilateral Mastectomy without breast reconstruction	38 (22.5)
Unilateral Mastectomy with immediate breast reconstruction	39 (23.1)
Unilateral Mastectomy with delayed breast reconstruction	25 (14.8)

Diagnosis and Treatment Information	Women: Breast Cancer Treatment (<i>n</i> =169)
Bilateral Mastectomy without breast reconstruction	5 (3.0)
Bilateral Mastectomy with immediate breast reconstruction	11 (6.5)
Bilateral Mastectomy with delayed breast reconstruction	4 (2.4)
No surgical treatment	2 (1.2)
Adjuvant therapy <i>n</i> (% of total sample) ²	
Chemotherapy only	21 (12.4)
Radiotherapy only	16 (9.5)
Chemotherapy and Radiotherapy	96 (56.8)
Hormone therapy <i>n</i> (% of total sample)	
Tamoxifen	80 (47.3)
Aromatase inhibitors	25 (14.8)
Other	13 (7.7)
Not sure	2 (1.2)
None	42 (24.9)
Combination of surgery and therapies <i>n</i> (% of total sample) ²	
Surgery	162 (95.6)
Surgery and Chemotherapy	115 (68.0)
Surgery and Radiotherapy	112 (66.27)
Surgery, Chemotherapy, and Radiotherapy	96 (56.8)
Surgery, Chemotherapy, Radiotherapy and Hormone therapy	76 (45.0)
Length of time since diagnosis (months)	
Mean (SD)	48.8 (51.5)
Range	1-312
Length of time since last treatment (months)	
Mean (SD)	21.7 (26.4)
Range	0-156

Diagnosis and Treatment Information	Women: Breast Cancer Treatment (<i>n</i> =169)
Length of time since last surgical procedure (months) Mean (SD) Range	34.5 (44.1) 1-300
Length of time since last chemotherapy (months) Mean (SD) Range	24.3 (36.7) 0-204
Length of time since last radiotherapy (months) Mean (SD) Range	28.5 (50.2) 0-336
Length of time since end of hormone therapy (months) Mean (SD) Range	8.3 (28.6) 0-240

¹ Cumulative percentage may exceed 100 as participants were allowed to select more than one type, reflecting the likelihood that they had received a combination of surgical treatments.

² Cumulative percentage may exceed 100 as combinations of different forms of treatment are displayed.

4.3.4 Comparison of variables within the Tripartite Influence Model

The first approach to discover potential differences in body dissatisfaction and risk factors between women treated for breast cancer, and women not treated for breast cancer, involved conducting a MANOVA on variables within the Tripartite Influence Model (also including BMI). The analysis revealed a significant multivariate difference between the groups on the combined outcome variables, $F(10,406) = 2.29, p = 0.01$; Pillai's Trace = 0.53, partial eta squared = 0.05. However, examination of univariate main effect F -values for each outcome variable displayed in Table 4.3 using a Bonferroni adjusted alpha level of 0.005 indicated that there were no significant differences on individual variables between groups. Further, the partial eta squared values suggest that less than 2% of the variance in Media pressure, the Appearance Evaluation Subscale, and the Body Areas Satisfaction Scale could be explained by

whether women had undergone treatment for breast cancer. This is considered a very small effect by Cohen (1988). As stated, there were no statistically significant differences between groups on these variables with the conservative Bonferroni adjusted alpha level adopted. However, it was interesting to observe two variables which were within the unadjusted alpha level of 0.05, and consequently might have indicated significant differences between the two groups had the alpha level not been adjusted.

Table 4.3 Mean, standard deviation and univariate *F*-values for variables indicating risk factors and body dissatisfaction

Variables	Women: Breast Cancer Treatment (<i>n</i>=167)	Women: No Breast Cancer Treatment (<i>n</i>=309)	<i>F</i> value <i>df</i>(1, 415)	Significance Level of Differences (<i>p</i> value)	Partial Eta Squared
BMI Mean (SD)	26.8 (5.93)	26.3 (6.50)	0.64	<i>p</i> = 0.43	0.00
Media pressure to change appearance Mean (SD)	2.27 (1.19)	2.54 (1.27)	3.39	<i>p</i> = 0.07	0.01
Partner pressure to change appearance Mean (SD)	2.10 (1.17)	1.98 (1.11)	1.73	<i>p</i> = 0.19	0.00
Family pressure to change appearance Mean (SD)	2.02 (1.15)	2.19 (1.25)	1.83	<i>p</i> = 0.18	0.00
Friends' pressure to change appearance Mean (SD)	1.79 (0.97)	1.82 (0.97)	0.10	<i>p</i> = 0.75	0.00
Internalisation of the thin ideal Mean (SD)	2.13 (0.87)	2.20 (1.02)	0.36	<i>p</i> = 0.55	0.00

Variables	Women: Breast Cancer Treatment (n=167)	Women: No Breast Cancer Treatment (n=309)	F value df(1, 415)	Significance Level of Differences (p value)	Partial Eta Squared
Upward appearance comparisons					
Mean (SD)	2.53 (1.08)	2.65 (1.06)	0.30	$p = 0.59$	0.00
Body image:					
Appearance Evaluation Subscale					
Mean (SD)	3.31 (0.83)	3.11 (0.92)	4.67	$p = 0.03^*$	0.01
Body image:					
Body Areas Satisfaction Scale					
Mean (SD)	3.12 (0.70)	2.98 (0.73)	4.98	$p = 0.03^*$	0.01
Body image					
Body Appreciation Scale					
Mean (SD)	2.70 (0.78)	2.60 (0.85)	1.77	$p = 0.18$	0.00

* Significant differences between groups ($p < 0.05$)

4.3.5 Correlations between variables within the Tripartite Influence Model

In order to evaluate and compare the Tripartite Influence Model among both groups of women, a correlational analysis was conducted to explore the bivariate relationships between variables proposed within the model. Significant bivariate correlations between variables provide the basis for testing the proposed model (Schumacker & Lomax, 1996). Table 4.4 displays correlations between all variables proposed in the Tripartite Influence Model for both groups of women, with and without controlling for BMI.

Across both groups, the analyses revealed patterns of associations between variables which are consistent with the Tripartite Influence Model, and have been previously evidenced among women in midlife (Katz, 2005; Kozar & Damhorst, 2008; Midlarsky & Nitzburg, 2008). When BMI was not controlled, nearly all bivariate relationships were significant at the significance level of $p \leq 0.005$ in both groups of women. However, when BMI was controlled, several bivariate relationships among women treated for breast cancer dropped to a significance level of $p \leq 0.05$, while two bivariate relationships (Friends' pressure and Internalisation of the thin ideal, Friends' pressure and Body Appreciation) became non-significant among this group. Generally, however, controlling for BMI had very little effect on the strength of the bivariate relationships in both groups, but it was deemed important to include BMI as a covariate the subsequent testing of the model. Further, all variables were primarily moderately-to-strongly positively correlated with one another within both groups (Cohen, 1988). All three measures of body image (Appearance Evaluation, Body Areas Satisfaction, and Body Appreciation) had the strongest intercorrelations ($r > 0.70$) and consequently justified the conduct of confirmatory factor analysis to examine the possibility of their use as multiple indicators to estimate a latent factor of body image. Collectively, these analyses support the subsequent evaluation and comparison of the Tripartite Influence Model amongst both groups of women.

Table 4.4 Correlations between variables among both groups of midlife women, with and without controlling for BMI.

	Media pressure (1)		Partner pressure (2)		Family pressure (3)		Friends' pressure (4)		Internalisation of the thin ideal (5)		Upward appearance comparisons (6)		Appearance Evaluation (7)		Body Areas Satisfaction (8)		Body Appreciation (9)		BMI (10)
1			0.41**	0.37*	0.42**	0.36**	0.41**	0.34**	0.50**	0.52**	0.51**	0.55**	0.32**	0.48**	0.52**	0.50**	0.37**	0.48**	<i>0.14</i>
2	0.28**	0.28**			0.47**	0.39**	0.52**	0.46**	0.21**	0.26**	0.24**	0.26**	0.26**	0.23*	0.28**	0.21*	0.33**	0.23*	<i>0.06</i>
3	0.40**	0.36**	0.47**	0.46**			0.67**	0.62**	0.16*	0.19*	0.24**	0.32**	0.39**	0.27**	0.45**	0.23**	0.36**	0.29**	<i>0.27</i>
4	0.38**	0.34**	0.52**	0.56**	0.67**	0.64**			0.20**	0.14	0.24**	0.27**	0.40**	0.16*	0.43**	0.17*	0.36**	0.13	<i>0.15</i>
5	0.53**	0.55**	0.21**	0.20**	0.16**	0.21**	0.20**	0.23**			0.70**	0.62**	0.30**	0.41**	0.40**	0.41**	0.47**	0.45**	<i>-.04</i>
6	0.55**	0.56**	0.24**	0.26**	0.24**	0.30**	0.24**	0.29**	0.70**	0.71**			0.32**	0.41**	0.44**	0.78**	0.51**	0.49**	<i>-.12</i>
7	0.32**	0.31**	0.26**	0.26**	0.39**	0.27**	0.40**	0.33**	0.30**	.39**	0.32**	0.38**			0.84**	0.79**	0.79**	0.80**	<i>0.32**</i>
8	0.37**	0.38**	0.28**	0.25**	0.45**	0.33**	0.43**	0.35**	0.40**	0.52**	0.44**	0.53**	0.84**	0.79**			0.81**	0.77**	<i>0.23**</i>
9	0.37**	0.40**	0.33**	0.29**	0.36**	0.26**	0.36**	0.32**	0.47**	0.56**	0.51**	0.58**	0.79**	0.75**	0.81**	0.77**			<i>-.02</i>
10	<i>0.12*</i>		<i>0.29*</i>		<i>0.41**</i>		<i>0.29**</i>		<i>-0.12*</i>		<i>-0.08</i>		<i>0.44**</i>		<i>0.41**</i>		<i>0.34**</i>		

‘Pressure’ = Pressure to change appearance; * $p \leq 0.05$, ** BMI $p \leq 0.005$.

Values for women treated for breast cancer are shaded; values for women not treated for breast cancer treatment are not shaded.

Values which are bold indicate that BMI was not controlled, while those which are not bold indicate that BMI was controlled.

Values in italic represent bivariate correlations between BMI and other variables.

4.3.6 Evaluation of the Tripartite Influence Model

4.3.6.1 Structural equation modelling methods

The tested Tripartite Influence Model is presented in Figure 4.1. It consisted of six observed variables. Four of the observed variables constituted the sociocultural sources of pressure hypothesised to influence body image: media pressure to change appearance, partner pressure to change appearance, family pressure to change appearance, and friends' pressure to change appearance. The two additional observed variables constituted the psychological processes hypothesised to influence body image: internalisation of the thin ideal and upward appearance comparisons. The tested model also included one latent outcome variable: body image, which was indicated by three measures: appearance evaluation, body areas satisfaction, and body appreciation.

While the original Tripartite Influence Model (see 1.9.1) proposes that sociocultural sources of pressure exert their effects indirectly on body image through two psychological processes (i.e. mediators), previous studies have indicated the presence of direct influences of sociocultural sources of pressures upon body image, in addition to these indirect influences (Keery et al., 2004; Rodgers et al., 2011; Tylka, 2011; Van den Berg, Thompson, Obremski-Brandon, & Covert, 2002). Further, cross-sectional support has been reported for relationships between sociocultural sources of pressure and body image concerns among women in midlife (Green & Pritchard, 2003; Midlarsky & Nitzburg, 2008), while longitudinal research has found adverse reactions from partners following surgery for breast cancer to predict elevated levels of body dissatisfaction (Wimberly et al., 2005). While likely that a proportion of these indicated relationships may be explained by the psychological mediators proposed within the model, it is also reasonable to suspect the presence of other unaccounted variables through which sociocultural sources of pressure are likely to influence body image. The current study therefore wished to test for both direct and indirect pathways from the sociocultural sources of pressure to body image, in order to determine which pathways are meaningful for the two groups and indicate the best fit of the model. The analysis therefore started with evaluation of a fully saturated structural model.

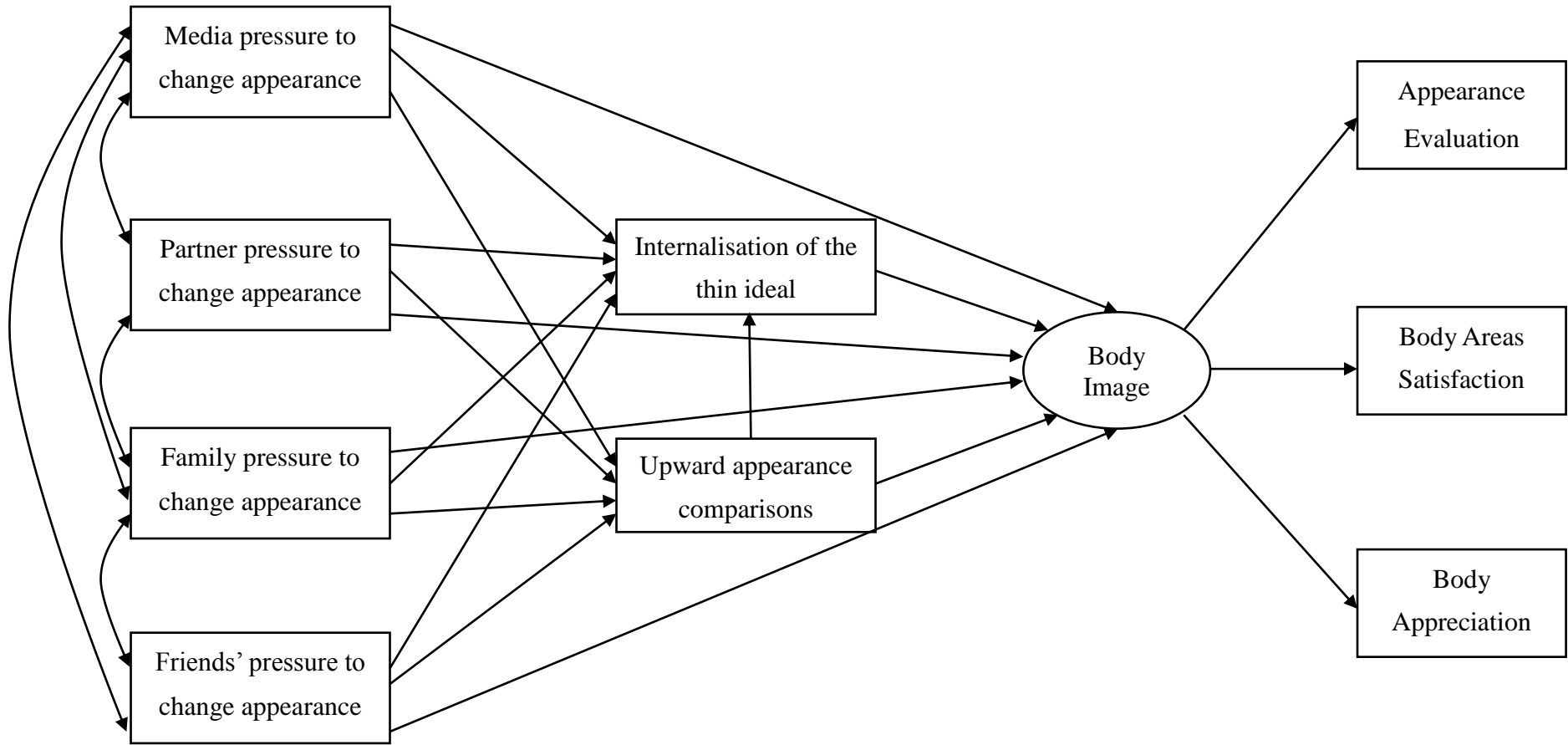


Figure 4.1 The Tripartite Influence Model: The fully saturated structural model (Model 1).

Note: Covariates Age, BMI, Menopausal status, and Socio-economic status (SES) are not displayed.

SEM techniques were first adopted to examine the measurement model. A confirmatory factor analysis (CFA) was conducted to confirm that the measures of body image (Appearance Evaluation, Body Areas Satisfaction, and Body Appreciation) share common variance-covariance characteristics that define the theoretical construct of body image. This established whether these measures were appropriate for use as indicators for the latent variable (i.e. body image; see Figure 4.2). SEM techniques were subsequently employed to evaluate the full structural model. This determined whether the Tripartite Influence Model was a good fit for the data, and thereby captured influences upon body image common to both groups of women. SPSS Amos Graphics 20 software was used to conduct all SEM analyses, whereby the full dataset was analysed using maximum likelihood estimation. Analyses were conducted simultaneously for both groups of women.

Adequacy of model fit to the data was determined by three recommended indices which are provided by AMOS (Bentler & Yuan, 1999): the chi-square (χ^2) test, the root mean square error of approximation (RMSEA; Steiger, 1990), and the comparative fit index (CFI; Bentler, 1990). The use of a range of fit indices is encouraged in SEM, so as to increase confidence in the findings, particularly as the χ^2 test can be sensitive to large sample sizes (Marsh, Balla, & Hau, 1996). The χ^2 value is an absolute fit measure and represents the difference between the predicted covariance matrix and the observed covariance matrix. A non-significant value indicates the model is acceptable, while a significant value indicates that the model is unacceptable (Byrne, 1989). Caution is required when dealing with sample sizes exceeding 200, as χ^2 is often significant (indicating the model is an unacceptable fit) on occasions when the model is more likely to be an acceptable fit (i.e. a false negative; Bentler & Bonett, 1980). As is the case with the χ^2 test, the RMSEA is also an absolute fit measure, and thereby estimates how well a pre-defined model fits the sample data (McDonald & Ho, 2002). Specifically, the RMSEA value shows how well the chosen parameter estimates fit the correlation matrix (Byrne, 1998). While a value of 0 indicates perfect fit, recommendations indicate that values less than 0.08 reflect an acceptable fit (Browne, Cudeck, Bollen, & Long, 1993), while those less than 0.06 imply a good fit (Hu & Bentler, 1999). In contrast, the CFI is part of the incremental fit measures, and consequently compares the fit of the target models with that of an independent model (McDonald & Ho, 2002). It is proposed that values closer to 1 indicate better fit. However, a well-fitting model is indicated by a CFI

value above 0.95 (Hu & Bentler, 1999). The inclusion of the CFI is beneficial as it is one of the fit indices least influenced by sample size (Fan, Thompson, & Wang, 1999).

With regard to interpreting the full structural model displayed in Figure 4.1, measures presented in a box (e.g. Media pressure to change appearance) represent observed variables, while the measure presented in a circle (i.e. Body Image) represents the latent variable (i.e. an underlying construct theorised as explaining the associated observed variables). Single-headed straight arrows represent the influence of one variable on another (i.e. the inferred effect; e.g. from Media pressure to change appearance to Internalisation of the thin ideal), while double-headed curved arrows represent a covariance or correlation between two variables (e.g. between Media and Partner pressures to change appearance). Exogenous variables are variables which are not dependent on any other variables (e.g. Family pressure to change appearance). Endogenous variables are variables which are dependent on one or more variables (e.g. Upward appearance comparisons). With regard to interpreting the measurement models (Figures 4.2, 4.3, and 4.4), single-headed arrows from circles to endogenous variables represent residual terms (i.e. unexplained variance in the variable). In the final models (Figures 4.5 and 4.6), significant paths are represented by a solid line, while non-significant paths are represented by dashed lines.

4.3.6.2 Examination of the measurement Model

The hypothesised one-factor measurement model (Figure 4.2) was first evaluated in both groups of women using CFA, whereby Appearance Evaluation (as measured by the Appearance Evaluation subscale of the MBSRQ; Brown et al., 1990), Body Areas Satisfaction (as measured by the Body Areas Satisfaction scale of the MBSRQ; Brown et al., 1990), and Body Appreciation (as measured by the BAS; Avalos et al., 2005) were tested to determine whether they served as appropriate indicators for the latent factor 'Body Image'.

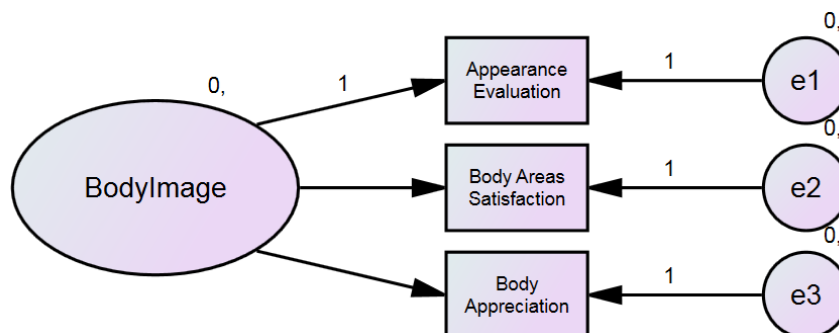


Figure 4.2 Hypothesised one-factor measurement model

A CFA was first conducted among the group of women who had not undergone breast cancer treatment (see Figure 4.3 for the measurement model with a) unstandardised and b) standardised parameters). Findings suggested that the three-indicator measurement model was just-identified and consequently fit perfectly, as indicated by the χ^2 value of 0, and CFI value of 1. The regression weights for indicators were significant at a probability level of 0.001, and the standardised estimates were high (at least 0.87), emphasising their necessity in the measurement model. All critical ratio values exceeded 1.96, indicating that all parameters were significantly different from zero ($p = 0.001$). Further, the CFA indicated that 83% of the variability in Appearance Evaluation, 85% of the variability in Body Areas Satisfaction, and 76% of the variability in Body Areas Appreciation were explained by the underlying latent variable. Overall, these findings showed support among this group of women for the latent variable 'Body Image', underpinned by the three measures.

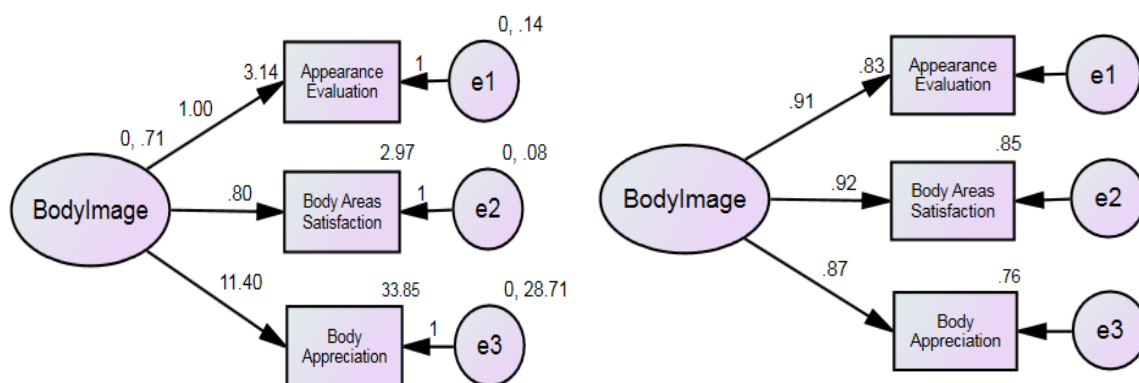


Figure 4.3 Measurement model among women not treated for breast cancer

a) Model with unstandardised parameters

b) Model with standardised parameters

A CFA was then conducted among the group of women who had undergone breast cancer treatment (see Figure 4.4 for the measurement model with a) unstandardised and b) standardised parameters). Likewise, the three-indicator measurement model was just-identified and fit perfectly, as indicated by the χ^2 value of 0, and CFI value of 1. The regression weights for indicators were similarly high in this group (at least 0,88) and consequently significant ($p = 0.001$), highlighting their necessity in the measurement model. All parameters were significantly different from zero ($p = 0.001$), as indicated by critical ratio values greater than 1.96. Finally, the CFA suggested that 83% of the variability in Appearance Evaluation, 80% of the variability in Body Areas Satisfaction, and 77% of the variability in Body Areas Appreciation were explained by the underlying latent variable. Thus there was support among this group for a latent variable 'Body Image', underpinned by the three measures. Collectively, these results confirm a good fit of the measurement model to the data, and a strong operationalisation of the latent factor for both groups of women.

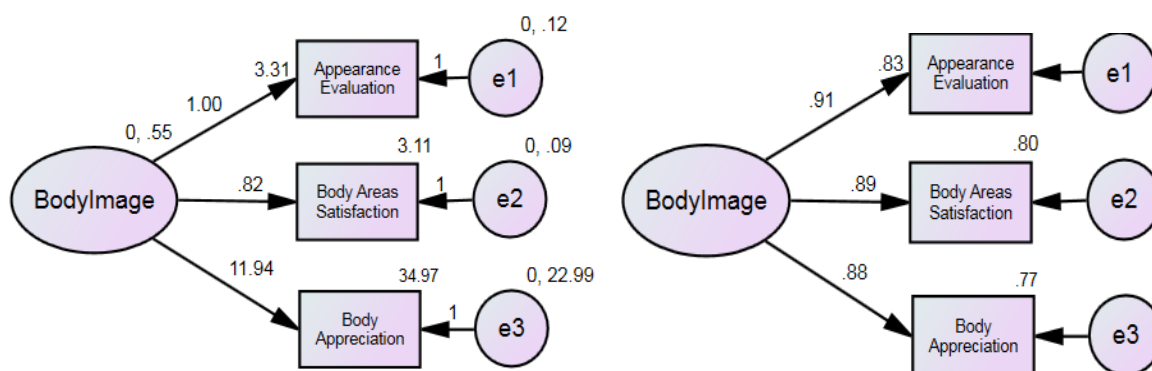


Figure 4.4 Measurement model among women treated for breast cancer

a) Model with unstandardised parameters b) Model with standardised parameters

4.3.6.3 Evaluation of the structural model: Two group analysis

To determine the fit of the Tripartite Influence Model among each group of women, the fully saturated structural model was evaluated simultaneously in both groups. Earlier examination of bivariate correlations revealed BMI to be significantly correlated with nearly all three measures of body image across both groups of women. Further, bivariate correlations between model variables were stronger when BMI was not controlled, as opposed to when it was (see Table 4.4). BMI was consequently included as a covariate in

the analysis to control for its effects on body image. Additionally, earlier examinations of participant demographic information revealed significant differences between groups with regard to age, education level, employment status, and menopausal status (see Table 4.1) and it was therefore important to control for the influences of these variables in the model. However, the lower percentage of women working full- or part- time among the group who had received treatment was attributed towards to the fact that they were still undergoing treatment or were on sickness leave (further confirmed by entries for ‘other’). Employment status was therefore considered an inaccurate and unreliable measure of socioeconomic status (SES). Education level alone was therefore used to indicate SES. Covariates included in the analysis were consequently BMI, age, education level, and menopausal status. The latter two variables were recoded as binary variables, whereby education was indicated as below versus equal to or higher than undergraduate level, and menopausal status was indicated as pre- versus post-menopausal. While these covariates were evaluated within the model, they were not the variables of interest, and their pathways are therefore not displayed in the final reduced models for each group (Figures 4.5 and 4.6).

The analysis revealed the fully saturated structural model (Model 1) to be good fit to the data for both groups of women ($\chi^2(44) = 102.973$, $p = 0.00$, CFI = 0.98, RMSEA = 0.052), Path significance was examined in order to obtain a more parsimonious model. Seven pathways that were non-significant ($p > 0.05$) for both groups of women were consequently deleted from the model (see Figures 4.5 and 4.6). Partner pressure to change appearance was thus completely removed from the model. As indicated by the indices of fit, this modified model (Model 2) was a better fit to the data for both groups ($\chi^2(58) = 119.001$, $p = 0.00$, CFI = 0.98, RMSEA = 0.046) and was not significantly different from the original hypothesised model (χ^2 difference = 16.028, $p = 0.312$). Consequently, this modified model was preferred.

In order to determine whether the pathways in Model 2 were meaningful (i.e. not significantly different) for both groups of women, critical ratio (CR) values were examined in order to inform equality tests. A CR value below 1.96 suggested that the pathway could be significantly different for each group. The pathway between Family pressure to change appearance and Body Image had the lowest CR value (-0.223). An equality test was therefore conducted, whereby the model was run again with this pathway constrained to be equal across both groups. This new model (Model 3) was not

significantly different from Model 2 (χ^2 difference = 16.028, $p = 0.377$) and maintained a good fit to the data ($\chi^2(58) = 119.049$, $p = 0.00$, CFI = 0.98, RMSEA = 0.046). The constrained pathway was therefore maintained in the model. This indicates that the relationship between Family pressure to change appearance and Body Image is the same (i.e. not significantly different) for women treated, and not treated, for breast cancer. This suggests that pressure from family is predictive of body dissatisfaction, which supports the Tripartite Influence Model.

The pathway between Upward appearance comparisons and Body Image had the next lowest CR value (-0.766). An equality test (whereby the pathways were constrained to be equal across both groups) revealed this new model (Model 4) not to differ significantly from Model 3 (χ^2 difference = 0.614, $p = 0.433$), and the fit to the data was further improved ($\chi^2(59) = 119.664$, $p = 0.00$, CFI = 0.98, RMSEA = 0.045). This indicates that engaging in upward appearance comparisons is predictive of body dissatisfaction in both groups of women, and is in line with the Tripartite Influence Model. The last pathway with a CR value below 1.96 (-1.472) was between Friends' pressure to change appearance and Body Image. Equality tests on this pathway revealed a worse fit of the new model (Model 5) to the data ($\chi^2(61) = 123.742$, $p = 0.00$, CFI = 0.979, RMSEA = 0.046). Model 5 was significantly different from Model 4 (χ^2 difference = 4.079, $p = 0.043$). This indicates that this pathway is not meaningful for both groups of women. Rather, while pressure from friends is a significant predictor of body dissatisfaction among women who have not undergone breast cancer treatment, this is not a significant influence for women who have undergone treatment. Model 4 was consequently maintained.

The CR values of the remaining pathways were examined. These suggested that the pathways between Internalisation of the thin ideal and Body Image (1.97) and between Media pressure to change appearance and Body Image (3.869) were only meaningful in one group and not the other. Equality tests were conducted to confirm this. The first pathway was constrained across both groups, but analyses revealed a significant difference between this new model (Model 6) and Model 4 (χ^2 difference = 7.275, $p = 0.007$), and a worse fit to the data ($\chi^2(61) = 126.938$, $p = 0.00$, CFI = 0.978, RMSEA = 0.047). This indicates that internalisation of the thin idea is predictive of body dissatisfaction among women not treated for breast cancer, in line with the Tripartite Influence Model. However, it is not predictive among women who have undergone

treatment. Next, the second pathway was constrained across both groups, and once again, this new model (Model 7) was significantly different from Model 4 (χ^2 difference = 14.426, $p = 0.000$), and was a worse fit to the data ($\chi^2(61) = 134.09$, $p = 0.00$, CFI = 0.976, RMSEA = 0.049). Similarly, this indicates that pressure from the media is predictive of body dissatisfaction among women not treated for breast cancer, in line with the Tripartite Influence Model. However, it is not predictive among women who have undergone treatment. Model 4 was consequently retained as the final model of best fit to both groups of women.

Lastly, bootstrapping procedures were adopted to confirm the role of Upward appearance comparisons as a mediator among both groups of women, and the additional role of Internalisation of the thin ideal as a mediator among women not treated for breast cancer.

Women who had not undergone treatment were examined in order to determine whether the influence of Media pressure on Body Image was indeed mediated by both psychological processes. The pre-condition for mediation is a significant direct pathway between Media pressure and Body Image, which was satisfied (Estimate = 0.155, CR = 4.388, $p = 0.001$). Indirect effects were computed for each of the 1000 bootstrapped samples, and this revealed a standardised indirect effect (0.144) of Media pressure on Body Image via Internalisation of the thin ideal, which was highly significant (95% Confidence Interval [CI] = 0.104–0.200, $p = 0.001$). Thus, as proposed by the original Tripartite Influence Model, the effect of Media Pressure upon Body Image was fully mediated by Internalisation, as confirmed by a standardised direct effect (0.013), found to be non-significant (95% CI = -0.068–0.085, $p = 0.755$).

When the mediating role of Upward appearance comparisons was examined among this group, the calculation of 1000 bootstrapping samples revealed a standardised indirect effect (0.15) of Media pressure on Body Image, which was found to be highly significant (95% CI = 0.106–0.208, $p = 0.001$). Again, in support of the original Tripartite Influence Model, Upward appearance comparisons fully mediated the effect of Media Pressure on Body Image, as is indicated by the identification of a standardised direct effect (0.015), which was found to be non-significant (95% CI = -0.068–0.096, $p = 0.736$). These analyses confirmed that the effect of Media Pressure on Body Image was fully mediated by Internalisation and Comparisons among women who had not undergone treatment.

Figure 4.5 demonstrates the final reduced model for this group of women in midlife. Fifty-three percent of the variance in Body Image, 55% of the variance in Internalisation of the thin ideal, and 34% of the variance in Upward appearance comparisons were explained. In summary, SEM provided partial support for the Tripartite Influence Model among women not treated for breast cancer. However, pressure from both friends and family to alter appearance was found to have a direct effect on body image, rather than an indirect effect as proposed by the model.

The group of women who had undergone breast cancer were subsequently analysed to examine the mediating role of Upward appearance comparisons. The pre-condition for mediation was met, as indicated by the significant pathway between Media pressure to change appearance and Body Image (Estimate = 0.302, CR = 6.632, $p = 0.001$). Indirect effects were computed for each of the 1000 bootstrapping samples, and this revealed Media pressure to have a highly significant standardised effect (0.08) on Body Image via Upward appearance comparisons (95% CI = 0.017–0.15, $p = 0.01$). However, this was revealed to be only a partial mediation, as Media Pressure was also found to have a direct and significant standardised effect (0.022) on Body Image (95% CI = -0.119–0.349, $p = 0.001$). This confirmed that for women treated for breast cancer, Upward appearance comparisons partially mediated the influence of Media pressure to change appearance on Body Image. However, Media also had a simultaneous direct influence on Body Image.

Figure 4.6 displays the final model for women treated for breast cancer. Fifty percent of the variance in body image, 43% of the variance in Internalisation of the thin ideal, and 32% of the variance in Upward appearance comparisons were explained. In summary, SEM provided partial support for the Tripartite Influence Model among women with a history of breast cancer. However, pressure from the media was found to have an additional direct effect on body image, while pressure from family was had a direct, rather than indirect, effect on body image.

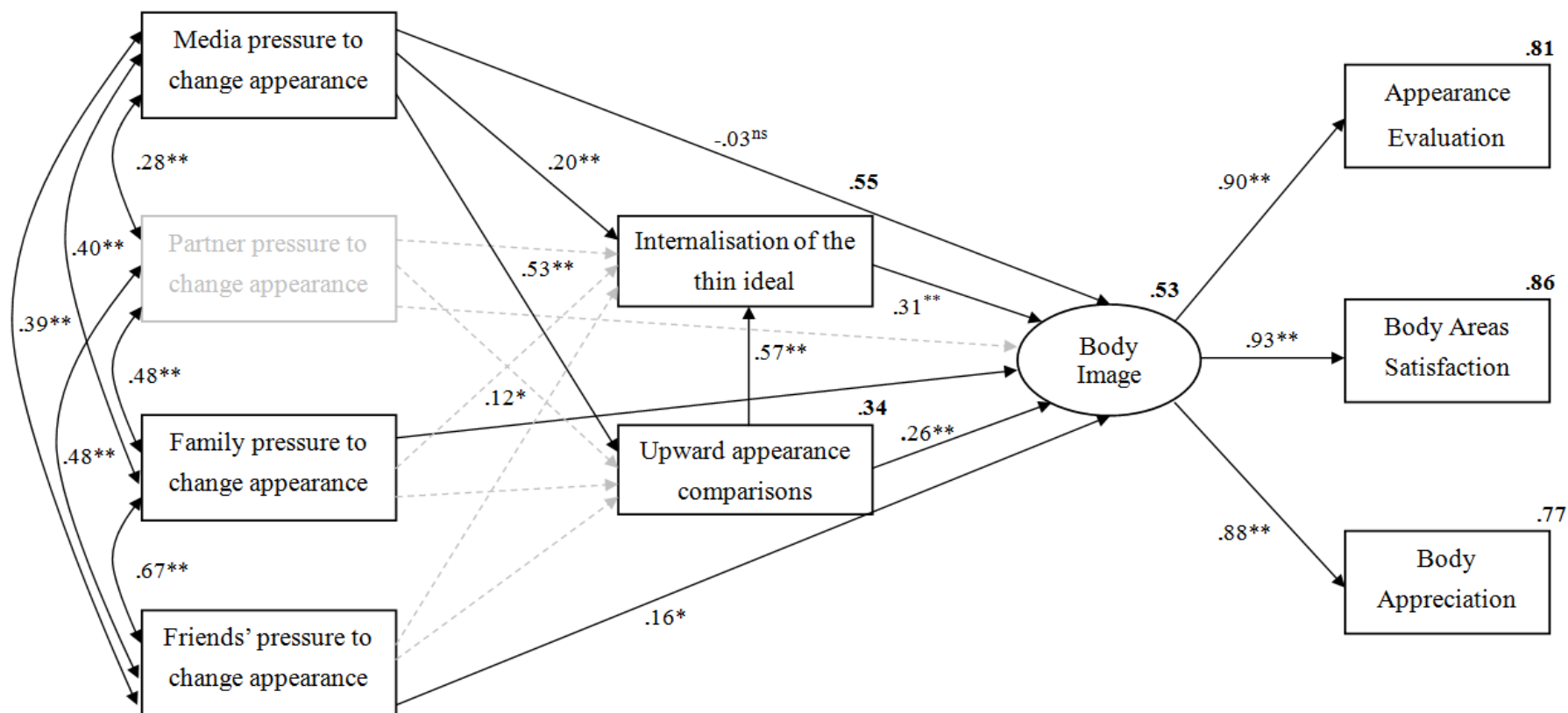


Figure 4.5 Final reduced model for women not treated for breast cancer

Non-bolded numbers correspond to the standardised path coefficients, while bolded numbers correspond to the explained variance for the variables. Grey dotted arrows indicate non-significant pathways ($p > 0.05$) among both groups of women which were deleted from the model.

* $p \leq 0.05$, ** $p \leq 0.005$, ^{ns} $p > 0.05$. Note: Covariates Age, BMI, Menopausal status, and SES were controlled.

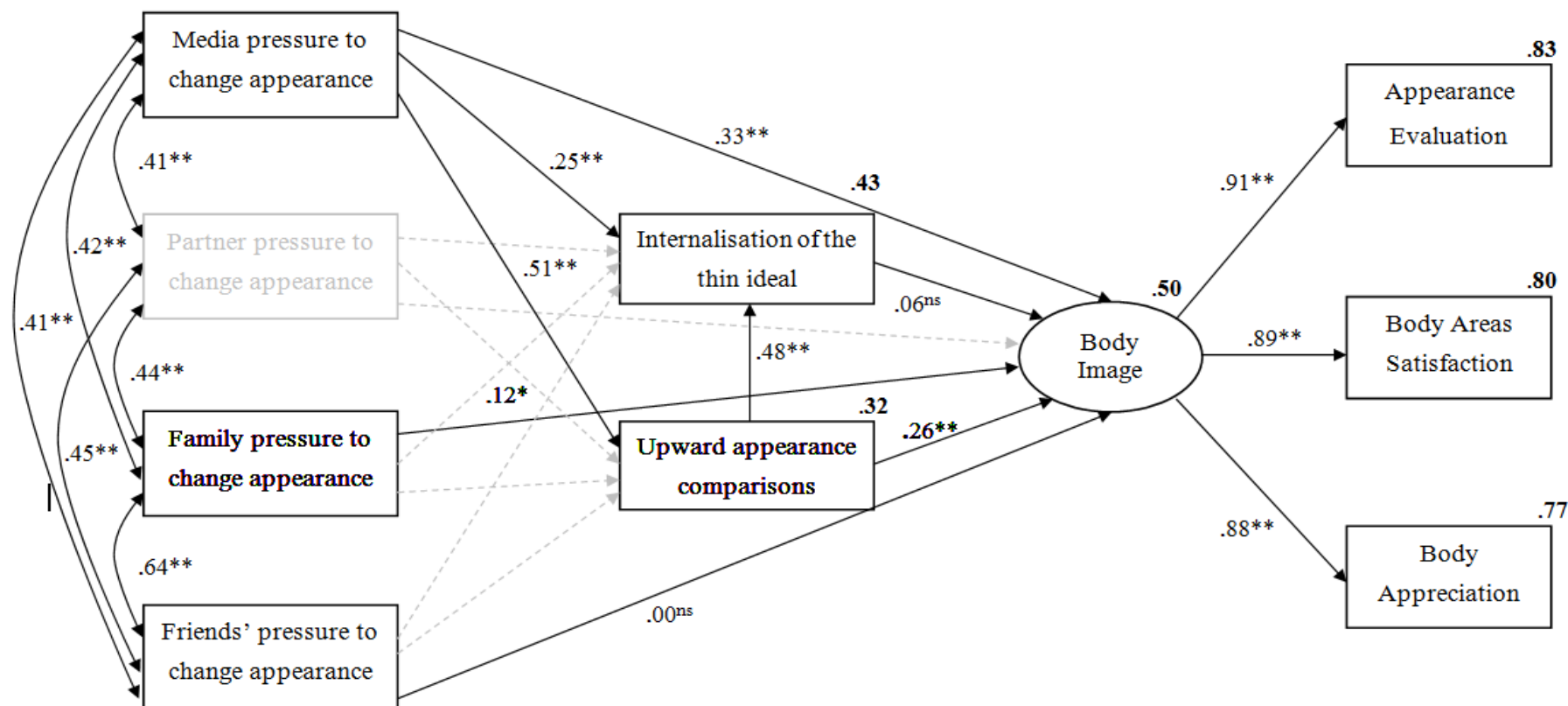


Figure 4.6 Final reduced model for women treated for breast cancer

Non-bolded numbers correspond to the standardised path coefficients, while bolded numbers correspond to the explained variance for the variables. Grey dotted arrows indicate non-significant ($p > 0.05$) pathways among both groups of women which were deleted from the model.

* $p \leq 0.05$, ** $p \leq 0.005$, ^{ns} $p > 0.05$. Note: Covariates Age, BMI, Menopausal status, and SES were controlled.

4.3.7 A comparison of body image in relation to diagnosis- and treatment- related factors

Women treated for breast cancer were examined to determine whether their body image varied according to various diagnosis- and treatment- related factors. These factors included length of time since diagnosis and treatment, the number of surgical procedures received, and types and combinations of treatments received.

Firstly, a correlational analysis was conducted to explore the bivariate correlations between the three measures of body image (Appearance Evaluation, Body Areas Satisfaction, and Body Appreciation) and six variables concerning length of time since diagnosis and treatment. These included length of time since diagnosis, last form of treatment, last surgical procedure, last chemotherapy, last radiotherapy, and termination of hormone therapy. The analysis revealed no significant correlations between these groups of variables, with significant correlations only identified within each group of variables (see Table 4.5). This suggested that body image did not vary between women according to length of time since diagnosis and treatment.

Next, a MANOVA was conducted to determine whether women who had undergone a different number of surgeries (independent variable) differed significantly with regard to body image, as assessed by a linear combination of the three dependent variables: appearance evaluation, body areas satisfaction, and body appreciation. The conduct of a MANOVA can be more advantageous than that of a separate ANOVA for each dependent variable, as it protects against inflated Type 1 error (Tabachnick & Fidell, 2007). However, it is strongly recommended that each cell must contain more cases than the number of dependent variables (i.e. 3), otherwise the assumption is likely to be untestable, and the power of the analysis is reduced (Tabachnick & Fidell, 2007). In view of this, women who had undergone three surgical procedures ($n=2$) joined those who had undergone two procedures ($n=17$), and thus represented women who had undergone at least 2 surgical procedures. The independent variable was consequently comprised of two levels. The body image of these women ($n=19$) was then compared with that of the women who had only undergone one surgical procedure ($n=143$) using a MANOVA. Given its resilience to unequal cell sizes, Pillai's trace was adopted as the test statistic to assess for significant differences in the current and subsequent analyses. The MANOVA revealed no significant differences in body image between women who had undergone

one surgical procedure compared and those who had undergone at least two surgical procedures (Pillai's Trace = 0.14, $F(3,154) = 0.75$, $p = 0.52$).

In considering whether women who had undergone different surgical procedures differed significantly with regard to their body image, Table 4.2 was consulted for the number of cases per surgical pathway. Given that the number of cases relating to bilateral mastectomy (i.e. without breast reconstruction, with immediate breast reconstruction, with delayed reconstruction) were too small to reliably test for significant differences (Tabachnick & Fidell, 2007), the separate surgical pathways were combined to form two different groups. Women who had undergone lumpectomy ($n=44$) were compared with those who had undergone either unilateral or bilateral mastectomy (irrespective of subsequent breast reconstruction; $n=118$). The independent variable was consequently comprised of two levels. The MANOVA revealed no significant differences in body image between women who had undergone lumpectomy and women who had undergone mastectomy (Pillai's Trace = 0.01, $F(3,154) = 0.38$, $p = 0.76$).

Women who had undergone mastectomy alone (irrespective of whether unilateral or bilateral) were then compared with women who had undergone subsequent breast reconstruction (irrespective of whether immediate or delayed). Again, due to reliability issues associated with small cases per surgical pathway, these were combined once more to produce two groups of women representing those who had undergone breast reconstruction ($n=40$), and those who had undergone mastectomy without reconstruction ($n=78$). The MANOVA revealed no significant differences in body image between these two groups of women (Pillai's Trace = 0.01, $F(3,111) = 0.32$, $p = 0.81$).

Lastly, the body image of women was compared with reference to the combination of surgeries and therapies they had received. Women who had undergone surgical treatment only ($n=29$), were compared with women who had undergone surgery and chemotherapy ($n=15$); surgery and radiotherapy ($n=13$); surgery, chemotherapy and radiotherapy ($n=19$); and finally surgery, chemotherapy, radiotherapy and hormone therapy ($n=69$). The independent variable was consequently comprised of five levels. Findings from the MANOVA revealed no significant differences in body image between women who had undergone different combinations of treatment (Pillai's Trace = 0.07, $F(12,420) = 0.77$, $p = 0.68$).

In summary, these series of analyses indicate that there was no significant difference in body image between women who varied in relation to length of time since diagnosis and treatment, the number of surgical procedures received, and the types and combinations of treatments received. Nevertheless, these latter findings should be interpreted with caution, as they do not perfectly reflect reality. Most women will undergo complex multifaceted treatment pathways, which are impossible to delineate and compare. However, these analyses have attempted gauge the influence of many factors which are likely to be of relevance within the individualised treatment pathway.

Table 4.5 Correlations between body image measures and variables relating to length of time since diagnosis and treatment

	Body Image Variables			Number of months since:					
	Appearance Evaluation (1)	Body Areas Satisfaction (2)	Body Appreciation (3)	Diagnosis (4)	Last treatment (5)	Last surgical procedure (6)	Last chemotherapy (7)	Last radiotherapy (8)	Last hormone therapy (9)
1									
2	0.80**								
3	0.80**	0.78**							
4	-0.01	-0.06	-0.03						
5	0.06	0.02	0.06	0.27**					
6	-0.09	-0.08	-0.10	0.78**	0.19*				
7	-0.12	-0.13	-0.12	0.43**	0.21**	0.32**			
8	-0.07	-0.16	-0.09	0.50**	0.11	0.49**	0.50**		
9	0.07	0.01	0.04	0.48**	0.15*	0.54**	0.16*	0.53**	

* $p \leq 0.01$, ** $p \leq 0.05$.

4.3.8 Exploration of intervention preferences

Needs and preferences with regard to body image support were explored among women treated for breast cancer (see Table 4.6). While only a minority of women (17.3%) had previously received support focussing on body image, the majority believed this would be of benefit (83.9%), which highlights the need for intervention. These women were then asked their preferences regarding when to receive body image support, in what format and who should deliver it. They were able to select multiple options in relation to these intervention aspects. The majority of women (58.5%) indicated a preference for support during the whole treatment journey, followed by a preference for support after active treatment had finished (17.8%). The most popular form of support was practical support (e.g. lingerie options, wig workshops, ‘Look Good, Feel Better’ [free make-up workshops for women experiencing appearance-altering side effects of cancer treatment]; 66.7%), followed by a structured small group programme led by a trained facilitator (64.4%). With regard to the preferred person for delivering body image support, peers (other women who have had breast cancer) were favoured (73.3%), followed by a breast cancer nurse specialist (68.1%).

Table 4.6 Intervention preferences of women treated for breast cancer

Intervention Preferences	Women: Breast Cancer Treatment
Support focussing on body image previously received n (%)	n=162
Yes	28 (17.3)
No	134 (82.7)
Support focussing on body image would be of benefit n (%)	n=161
Yes	135 (83.9)
No	26 (16.1)
Preferred time point to receive body image support n (%)	n=135
Upon diagnosis	5 (3.7)
The beginning of treatment	8 (5.9)
During treatment	15 (11.1)
After treatment	24 (17.8)

Intervention Preferences	Women: Breast Cancer Treatment
During the whole journey	79 (58.5)
Other ²	5 (3.7)
Preferred form of body image support n (%)¹	n=135
One-to-one therapy	72 (53.3)
Self-help group	37 (27.4)
Structured small group programme led by a trained facilitator	87 (64.4)
Self-help material or information	49 (36.3)
Physical exercise	61 (45.2)
Practical support (e.g. lingerie options, wig workshops, 'Look Good, Feel better')	90 (66.7)
Other ³	5 (3.7)
Preferred person to deliver body image support n (%)¹	n=135
Doctor	11 (8.1)
Breast cancer nurse specialist	92 (68.1)
Psychologist/Counsellor	68 (50.4)
Peers (other women who have had breast cancer)	99 (73.3)
Other ⁴	12 (8.9)

¹ Cumulative percentage may exceed 100 as participants were permitted to select more than one option.

² Other: depends on the person, from diagnosis and beyond

³ Other: all support, alternative therapies e.g. tai chai, body image to become a more accepted issue for the general public, a good hairdresser, needs to be of same age/lifegroup

⁴ Other: a female, industry professionals e.g. lingerie, make up, fitness etc., cancer charities, social worker, someone not associated with cancer, don't know

4.4 Discussion

4.4.1 Evaluation of the Tripartite Influence Model across Groups

Firstly, findings revealed that there was no significant difference in levels of body dissatisfaction between women treated for breast cancer and women not treated. This supports previous research which identified little difference between the body image of 248 long-term survivors and 496 controls (Falk Dahl et al., 2010). The present study also discovered no significant differences between groups in relation to the mean scores for the variables proposed within the Tripartite Influence Model. This is the first study to compare these variables between the two groups of women.

The correlational analysis preceding the evaluation of the full model revealed all proposed sociocultural influences and psychological processes to be significantly associated with body image, as well as each other, in both groups of women. However, many of these bivariate correlations disappeared when they were evaluated simultaneously in the model. Indeed, the subsequent evaluation and comparison of the full Tripartite Influence Model presents novel and illuminating findings concerning the patterns of these influences among midlife women treated for breast cancer, and women not treated. The fully saturated model proved a good fit in both groups of women, but the final model improved the fit, and the pattern of influences differed slightly between groups. Further, not all components or pathways proposed in the original Tripartite Influence Model were found to be significant among both groups, while additional direct pathways not originally proposed were found to be significant. Findings concerning differences in pathways mirror those of a previous study which tested the Tripartite Influence Model among Australian and French young women (Rodgers et al., 2011). These researchers also found that while the model was a good fit, significant pathways differed between the groups, and direct pathways were added to improve the fit. Similarly, other evaluations of the model have also identified a better fit when non-significant pathways were deleted or additional direct pathways were added (Shroff & Thompson, 2006; Tylka, 2011; Yamamiya et al., 2008).

Moving on to discuss the pathways within the final model, first of all the proposed pathways between media influence and body image via internalisation of the thin ideal and upward appearance comparisons were confirmed among midlife women who had not undergone treatment. While previous correlational research has suggested media pressure

(Green & Pritchard, 2003; McCabe et al., 2007), internalisation (Forbes et al., 2005; Katz, 2005; Matz et al., 2002), and appearance comparisons (Kozar & Damhorst, 2008) to relate to body dissatisfaction among women in midlife, the present study adds novel findings concerning the way these variables interact to influence body image among this group. The identified mediated pathways between media pressure and body image are consistent with previous research among younger groups of women (Rodgers et al., 2011; Shroff & Thompson, 2006), which also demonstrated support for this component of the originally proposed Tripartite Influence Model. Further, present findings extend those of Slevic and Tiggemann (2011b), who reported exposure to media to be indirectly associated with body dissatisfaction via internalisation and appearance comparisons.

In contrast, only one of the mediated pathways between media pressure and body image was supported among women treated for breast cancer, and this was via upward appearance comparisons. However, an additional direct pathway was indicated between media influence and body image among this group. This was congruent with a previous evaluation of the Tripartite Influence Model, whereby media pressure was found to both indirectly and directly adversely affect body image among young adult men (Tylka, 2011). The present findings suggest that while the body image of women treated for breast cancer is influenced by media pressure to alter appearance through upward comparisons of their appearance, media pressure has an additional influence upon body image which cannot be accounted for by internalisation. This additional direct effect may be of relevance only to this group, given that its members are likely to have diverged even further from the thin ideal (due to treatment-associated appearance changes) than midlife women who have not undergone treatment, which would leave them more vulnerable to the bombardment of unrealistic appearance ideals coming from the media. Further, the direct effect of media pressure may be explained by other mediating variables which have not been included in the model, such as appearance investment or ageing anxiety.

Moving on, the hypothesised indirect pathway between family influence and body image via the psychological processes was absent in the final model, with family influence instead found to have a direct effect on body image in both groups of women. This supports previous cross-sectional research which identified a correlation between these two variables among women in midlife (Green & Pritchard, 2003). This direct effect of family pressure upon body image among women treated for breast cancer is novel.

Similarly, previous evaluations of the Tripartite Influence Model among other populations have found the proposed mediating pathways between parental influence and body image to be non-significant (Rodgers et al., 2011; Shroff & Thompson, 2006). Given that the present study constitutes the first evaluation of the model among women in midlife specifically, the present findings suggest that while the originally proposed mediators may account for the influence of parental pressure upon body image among younger populations, these psychological variables may be less relevant to understanding the influence of family pressures on body image in midlife. It may also be the case that other mediators account for the influence of family pressures among this age group, which currently remain unexplored.

Regarding the influence of friends' pressures, the proposed indirect pathways to body image were non-significant amongst both groups of women, and were consequently absent from the final model. However, a direct effect of friends' influence was identified among women who had not undergone treatment. This finding is congruent with previous evaluations of the Tripartite Influence Model among other populations, which also identified this direct, rather than indirect, pathway (Rodgers et al., 2011; Tylka, 2011). The present findings suggest that other mediators may account for the influence of friends' pressure upon the body image of this group of midlife women (e.g. appearance investment, ageing anxiety). However, friends' pressure may not have been found to influence the body image of women treated for breast cancer as friends may not represent relevant comparison targets or friends may be reluctant to talk about appearance, with the intention of not making the individual feel distressed concerning their treatment-related appearance alterations.

Finally, the added sociocultural influence of partner pressure was found to be non-significant among both groups of women, and was consequently absent from the final model, despite previous correlational research indicating a relationship between these two variables among both women treated (Wimberly et al., 2005), and not treated (McLaren et al., 2004), for breast cancer. Partner pressure may not influence body image in midlife as women may be in more stable and long term relationships, in which appearance may be less important than it was initially. Indeed, the findings indicate that the influences of other sociocultural sources are more important for the body image of this age group.

The present findings demonstrate that the Tripartite Influence Model is a useful model for mapping and verifying sociocultural and psychological influences upon these two groups of women in midlife. However, they also suggest that internalisation and appearance comparisons may be less relevant in relation to the influence of friends' and family pressure on body image in midlife. Implications of these findings for practice, theory, and research, are discussed in the final chapter of this thesis.

4.4.2 A Comparison of Body Image in relation to Diagnosis- and Treatment-related Factors

Findings revealed that the body image of women treated for breast cancer did not vary according to the length of time since diagnosis and treatment, the number of surgical procedures received, and the types and combinations of treatments received. The findings in relation to length of time since diagnosis and treatment contrasted with those of previous research, which found body image to worsen from post-surgery to 6 months following adjuvant treatment (Moreira & Canavarro, 2010). However, a comparison between women undergoing adjuvant treatment and long-term survivors revealed no differences in body image (Murgic et al., 2012), and thus supports the present findings. The adoption of prospective studies which follow the same group of women from diagnosis to treatment and beyond will help to clarify these findings.

The present findings concerning similar levels of body image irrespective of the number of surgical procedures undergone are novel. However, findings relating to the influence of different forms and combinations of surgical procedures were both congruent and incongruent with previous findings. While the present study found that body image did not vary between women who had undergone lumpectomy and women who had undergone unilateral or bilateral mastectomy, previous research has found significant differences in body image between these groups (Arndt et al., 2008; Engel et al., 2004). However, the present findings supported previous longitudinal research which revealed that body image did not change when women received a mastectomy following a lumpectomy two years earlier (Collins et al., 2011).

Additionally, while the present study revealed no differences in body image between women who had undergone breast reconstruction following mastectomy and women who had undergone mastectomy alone, previous cross-sectional research has indicated poorer body image among the latter (Al-Ghazal, Fallowfield, et al., 2000). However, the present

findings were congruent with prospective research which found that any body image differences between the two groups disappeared after one year following surgery (Harcourt et al., 2003) or two years (Collins et al., 2011). Finally, present findings indicating no differences in body image according to the combination of surgeries and therapies undergone are novel. Overall, these findings indicate that a body image intervention does not need to target women in relation to specific treatment- and diagnosis- factors, as these do not appear to influence the severity of body image concerns among these women.

Nevertheless, the present findings should be interpreted with caution, as it was not possible to differentiate and compare every possible treatment pathway, and to account for the timing of different treatments. Further, both congruence and incongruence of the present findings with previous findings are likely to be related to methodological differences between studies, consequently making comparisons difficult.

Firstly, sample characteristics are likely to differ both within and between studies, in relation to demographic-, diagnosis-, and treatment- related factors. For example, participants may differ in relation to the combinations and timings of treatments received. Further, participants may differ with regard to the timing of the assessment during their treatment journey. For example, while the retrospective cross-sectional study by Al-Ghazal, Fallowfield, et al. (2000) intended to compare different forms of surgical treatment, the sample was comprised of women who differed in relation to accompanying adjuvant therapies (e.g. chemotherapy). Further, an additional retrospective study included women with a median time since diagnosis of seven years (Raggio et al., 2014). This highlights the importance of conducting prospective research (e.g. Collins et al., 2011; Harcourt et al., 2003) with women at similar treatment stages and time-points. However, the difficulty of still obtaining a homogenous sample of women in this case is acknowledged. For example, while Harcourt et al. (2003) were able to follow women undergoing different forms of surgical treatment before the procedure and up to a year later, there were differing rates of chemotherapy within and between surgical groups. Finally, the measures employed to assess body image have differed between previous studies. For example, while the Body Image Scale (Hopwood et al., 2001) was used in one study (Harcourt et al., 2003) the Body Areas Satisfaction Scale from the MBSRQ (Brown et al., 1990; Cash, 1994) was used in another (Collins et al., 2011).

Nevertheless, the present and previous studies have explored the influence of isolated diagnosis- and treatment- related factors upon body image. Further research is needed, and the adoption of prospective studies which follow and compare women at similar points of their treatment journey will improve our understanding of these different influences upon body image. An example of an ongoing large-scale study of this nature is the UK-based Macmillan HORIZONS project (www.horizons-hub.org.uk), which is following cohorts of cancer patients, including breast cancer patients, from diagnosis and over the life course, to examine multiple psychosocial outcomes, including body image.

4.4.3 Exploration of Intervention Preferences

The vast majority of the sampled women who had undergone breast cancer treatment saw the benefit of a body image intervention, yet only the minority had received such support in the past. While the majority believed this would be of greatest benefit when provided throughout the whole treatment journey, support was also valued following completion of active treatment. Given that most of the anticipated appearance changes associated with active treatment are likely to have taken place by this point and consequently no further drastic appearance changes are expected, this may constitute the time when women will need the most support to help facilitate acceptance of these changes. Indeed, previous research has found body image to worsen between post-surgery and 6 months following adjuvant treatment (Moreira & Canavarro, 2010), while no differences in body image were identified between women undergoing adjuvant treatment and long-term survivors (Murgic et al., 2012), and an additional study reported no improvement in body image among breast cancer survivors three years later (Falk Dahl et al., 2010).

Practical support (e.g. lingerie, wig workshops, ‘Look Good, Feel Better’) was the preferred form of intervention. This may not be surprising given that interventions such as ‘Look Good, Feel better’ and ‘HeadStrong’ are freely available across the UK (see 1.10 for details), so participants may have been more familiar with such support. Support of this nature may be beneficial in helping women manage their treatment-related appearance changes by helping the individual feel more comfortable in public, and reducing the likelihood of being stared at. Further, this may also make others, such as partners and children, feel more comfortable.

Even so, such approaches may inadvertently reinforce the unhelpful message that treatment-related appearance changes are best hidden from view. Further, while the

benefits of attending 'Look Good, Feel Better' with regard to body image have been demonstrated (Taggart, Ozolins, Hardie, & Nyhof-Young, 2009), there are currently no controlled studies of greater methodological rigour, such as those identified in the earlier systematic review (Chapter 3), which have examined the long-term impact of attending the workshop. Further, the one identified study which compared body image before and following the workshop comprised a small sample within which there were only 5 participants with breast cancer (Taggart et al., 2009). Additionally, post-intervention improvements were not maintained two weeks later, and body image in fact worsened two weeks later. Further, a qualitative examination of women's experiences of 'HeadStrong' revealed perceptions of the service as beneficial in relation to practical support, but less so in terms of emotional support (Pilkington, Harcourt, Rumsey, O'Connor, & Brennan, 2014). Finally, body dissatisfaction has been identified to persist for years following recovery, at which point women's hair may have grown back, which suggests that camouflage interventions such as 'Look Good, Feel Better' and 'HeadStrong' may not adequately address concerns in the long-term. These practical approaches may therefore benefit from being supplemented with psychological support. Indeed, a structured small group programme led by a trained facilitator was a closely following second preference among women treated for breast cancer. Further, participants selected more than one form of support, which suggests that they may prefer access to a range of services during treatment and recovery.

Finally, with regard to preferences concerning the person(s) delivering the intervention, peers were most popular, followed by a breast cancer nurse specialist. Previous studies have highlighted the psychosocial benefits of peers in terms of group support and peer-led programmes for women with breast cancer (Ashbury, Cameron, Mercer, Fitch, & Nielsen, 1998; Dunn, Steginga, Occhipinti, & Wilson, 1999; Edgar, Remmer, Rosberger, & Rapkin, 2003).

4.4.4 Limitations and Strengths

A number of limitations associated with the current study should be taken into account, particularly in relation to the sample. Firstly, while the overall sample size of nearly 500 participants was respectable, the two comparison groups were unequal. However, Pillai's trace was selected as the test statistic due to being more tolerant of departures from

assumptions, such as unequal cell sizes, compared with Wilks' lambda, Lawley's trace, and Roy's largest root (Tabachnick & Fidell, 2007).

A second limitation relates to the demographic homogeneity of the sample. The majority of women across both groups were of white ethnicity, married, mothers, employed, and educated to at least undergraduate level. Nevertheless, such demographics are representative of the majority of patients with breast cancer (Cancer Research UK, 2015). Further, while previous research has reported higher levels of body dissatisfaction (Wildes, Emery, & Simons, 2001) and greater susceptibility to sociocultural risk factors and psychological processes (Abrams & Stormer, 2002; Jefferson & Stake, 2009) among White women, studies have also found no difference between ethnic groups with regard to sociocultural risk factors and psychological processes (Shaw, Ramirez, Trost, Randall, & Stice, 2004).

Thirdly, the sample of women treated for breast cancer was heterogeneous in terms of diagnosis- and treatment- related factors. While no differences in body image were identified when surgical procedures were compared, the reality is that women are likely to have received a combination of treatments and therapies, as opposed to surgical treatment in isolation. For example, one individual may have undergone bilateral mastectomy, delayed breast reconstruction, chemotherapy, hormone therapy, but not radiotherapy. It is difficult to determine body image based on this particular treatment pathway. However, particular combinations of treatments and therapies were considered, and no significant differences in body image were found, but it was not analytically feasible to consider every possible treatment pathway, as small cell sizes would have impeded the conduct of a MANOVA. Generally, the study of the combined cumulative impact of treatment-related appearance changes constitutes a gap in the literature in need of exploration.

A fourth limitation is that the present study employed a different measure of sociocultural influences from those of previous studies which evaluated the Tripartite Influence Model (Keery et al., 2004; Shroff & Thompson, 2006; Van den Berg et al., 2002). While the majority of these employed measures that have demonstrated good psychometric properties, the present study developed a four-item scale based on the eight-item Perceived Sociocultural Pressures Scale (PSPS; Stice, Ziemba, et al., 1996). While the four sociocultural sources of influence from the PSPS were retained, only one

item (as opposed to two items) was used to assess the influence of each, and the focus was altered from pressure for thinness to pressure to change appearance more generally. While these considerations may jeopardize construct validity and comparability, internal reliability was acceptable across both groups, and the PSPS has demonstrated good reliability and validity among younger women. Further, in contrast to previous evaluations of the model, the present study employed three different measures to estimate body image, which facilitated multidimensional assessment and control for measurement error (Kelloway, 1998).

Additionally, caution must be exercised in view of the fact that the influence of media was not examined in comparative relation to their different forms (e.g. the influence of TV versus that of magazines). Further, the examples of media provided by the PSPS comprise traditional forms (TV, films, magazines, and newspapers) but not more modern forms, such as social media platforms (e.g. Facebook, Instagram), which incorporate the influence of peers. Indeed, the use of social media platforms, such as Facebook, has been associated with increased body image concerns among young adult women, through appearance comparisons (Fardouly & Vartanian, 2015; Mabe, Forney, & Keel, 2014). It is therefore important to extend the study to the influence of “new” media upon body image to women in midlife.

Further, it is important to highlight a limitation of having used the gender neutral BASS (Cash, 2000) to assess the degree of dissatisfaction with isolated aspects of the body. Within the measure, the item “chest” refers to both the breast and chest area. However, women may not have interpreted “chest” as referring to their “breasts”, therefore potentially jeopardising the use of the measure. This emphasises the importance of future research conducted with women to add “breasts” to the original item to ensure clarification.

Finally, while SEM allows the evaluation of the strength of causal relationships as predicted by a model, it is important to acknowledge its limitation as a correlational technique. For example, while pressure felt from the media to alter appearance may lead an individual to engage in appearance comparisons with others, an alternative interpretation is that an individual with this tendency is in fact induced to perceive greater pressure from the media to change their appearance. The temporal proceeding of

these variables could be clarified through the implementation of a longitudinal design, as opposed to one of a cross-sectional nature.

4.4.5 Implications for Intervention Development

The study findings indicate that sociocultural influences (pressure from the media, pressure from family) and psychological processes (internalisation of the thin ideal, upward appearance comparisons) constitute appropriate targets for intervention, for both midlife women who have undergone treatment for breast cancer and midlife women who have not. They therefore provide a rationale for considering adapting interventions which have been developed for women in midlife for use with women who have undergone treatment. This aspect of the study constituted Step 2 of Intervention Mapping (Eldredge et al., 2011), whereby important and changeable determinants are identified for intervention.

The findings which revealed body image not to vary in relation to diagnosis- and treatment- related factors support the development of a body image intervention targeting women treated for breast cancer, irrespective of the length of time since diagnosis and treatment, the number of surgical procedures and the forms and combinations of treatments received. The intervention consequently does not need to target women with specific diagnosis- and treatment- related factors. This component of the study constituted Step 1 of Intervention Mapping (Eldredge et al., 2011), whereby the needs assessment is conducted.

The third element of the study found that the vast majority of women treated for breast cancer explicitly recognised the benefit of support specifically addressing body image, which highlights the need for such an intervention. These preferences will be taken into account when developing or modifying an existing body image intervention. This constituted Step 3 of Intervention Mapping (Eldredge et al., 2011) whereby intervention ideas are generated with the planning group. All three aspects of the current study fulfilled the majority of the criteria stipulated in the Development phase of the MRC framework for the development and evaluation of interventions to improve health (Craig et al., 2008).

In conjunction with findings from the systematic review in Study One (Chapter 3), the following chapter used findings from the present study concerning targetable influences

and intervention preferences to inform the development or modification of an existing body image intervention to be used with women treated for breast cancer. This will constitute Step 4 of Intervention Mapping (Eldredge et al., 2011) where the programme is developed, which will satisfy the final criterion of the Development phase of the MRC framework: modelling process and outcomes (Craig et al., 2008).

Chapter 5: Synthesis of findings to inform the development of a body image intervention for women treated for breast cancer

5.1 Study One and Study Two: Implications for intervention development

In this chapter, the findings from the systematic review (Chapter 3) and the online survey (Chapter 5) are revisited and united to inform the development of a body image intervention for women treated for breast cancer. Based on the implications of these unified findings, it was deemed unnecessary to develop a novel intervention for this group. Instead, an existing body image intervention that was developed for women in midlife was adapted for use with women treated for breast cancer. The integration of the findings from the preceding two studies constituted Step 3 of the intervention mapping protocol (Eldredge et al., 2011), whereby theory-based methods and practical approaches are pursued, and mapped on to the matrix of change objectives to target identified determinants. This fulfilled the ‘Modelling processes and outcomes’ criterion of the Development phase of the MRC framework (Craig et al., 2008), which requires an understanding of the intervention to be developed and its possible effects by delineating its components and how they inter-relate in determining final outcomes.

5.1.1 Findings from Study One: Systematic review

The systematic review of body image interventions targeting women in midlife treated, and not treated, for breast cancer, identified the attributes of effective interventions evaluated in methodologically sound studies. Attributes of effective interventions shared by both target groups related to format and dose, with multi-session, group-based interventions delivered in person receiving the most empirical support. With regard to the implications for intervention development, greater confidence could be placed in the studies evaluating interventions targeting women not treated for breast cancer. Specifically, interventions found to be effective among this group had longer-lasting and larger effects on body image, and were evaluated in studies of greater methodological rigour than those that dealt with women treated for breast cancer. The three studies that reported maintained improvements among this group demonstrated that the adoption of a theoretical and therapeutic model-based intervention that explicitly and exclusively

addressed body image and was led by a psychologist was the most effective approach (McLean et al., 2011; Pearson et al., 2012; Smith et al., 2001).

In contrast, the only methodologically sound interventions to have reported post-test improvements on body image among women treated for breast cancer adopted physical-activity-based approaches. These studies, however, did not assess the maintenance of improvements, and the post-test effects were small to medium in size. Further, as previously emphasised (see 3.4.5), there is limited evidence concerning long-term effects of physical activity upon other psychosocial outcomes among this group (McNeely et al., 2006), and some evaluative studies have even identified adverse consequences from physical activity, relating to injury and worsening of fatigue, both during and following active treatment (e.g. Campbell et al., 2005).

5.1.2 Findings from Study Two: Online survey

The online survey provided an opportunity to explore whether the psychological and sociocultural influences that have been associated with body image among women in midlife (see Chapter 1) were also relevant among midlife women treated for breast cancer. A range of these influences was tested within the empirically established and widely cited Tripartite Influence Model of body image (Shroff & Thompson, 2006), and compared between midlife women treated for breast cancer and midlife women not treated for breast cancer. There were no significant differences between the two groups with regard to individual variables (e.g. media pressure to alter appearance), and paths within the model were similar for both groups. These psychological processes and sociocultural influences constitute changeable determinants (Step 2 of Intervention Mapping; Eldredge et al., 2011) and consequently this study indicated that they are appropriate targets for a body image intervention for women treated for breast cancer. Additionally, the similarity of the models between the two groups of women suggests that interventions targeting these factors among midlife women may also be appropriate for women treated for breast cancer. Further, findings concerning intervention preferences among the latter provided additional implications for intervention development. While the preferred form of support was indicated as practical support (67%; e.g. lingerie options, wig workshops), 64% indicated their preference for a structured small group programme led by a trained facilitator. This latter finding suggests that interventions of this nature which have been evaluated among women in midlife

(e.g. McLean et al., 2011; Pearson et al., 2012; Smith et al., 2001) may be suitable for women treated for breast cancer. Further, less than half of the women (45%) indicated a preference for a physical-activity-based intervention.

5.2 Synthesis of findings to inform intervention development

The findings from the systematic review and online survey were reviewed and integrated to inform the next stage of this PhD, which concerns the development of a body image intervention for women treated for breast cancer. Collectively, these studies indicated that the development of a multi-session, group-based, theoretical and therapeutic model-based intervention led by a trained facilitator (see 5.1.1), which targets sociocultural influences and psychological processes proposed within the Tripartite Influence Model of body image (Shroff & Thompson, 2006; see 5.1.2), is likely to be most effective. Further, the discovery that influences identified among women in midlife not treated for breast are pertinent to women treated for breast cancer, suggests that the attributes of the three interventions that have been found to have enduring effects on body image among women not treated for breast cancer (McLean et al., 2011; Pearson et al., 2012; Smith et al., 2001) may also be appropriate for use with women treated for breast cancer. These three interventions were therefore closely reviewed with particular attention to the sociocultural influences and psychological processes each intervention addressed. The inclusion of each of these variables was assessed across two criteria: (1) Did they receive explicit attention within the intervention content? And: (2) Were they assessed in the outcome measures in the evaluative study? Additionally, the interventions were reviewed in the context of the strengths and maintenance of their effects and the identified preferences for intervention reported by women treated for breast cancer in Study Two.

The only intervention to address all criteria was the CBT ‘Set Your Body Free’ intervention by McLean and colleagues (McLean et al., 2011). The roles of all sociocultural influences and psychological processes were acknowledged in the introduction of the evaluative paper and addressed explicitly within the intervention content while both internalisation and appearance comparisons were evaluated (and improved) as outcome measures. Further, consistent with Step 3 of the Intervention Mapping protocol (Eldredge et al., 2011), the intervention targeted determinants within the matrix of change objectives using its own CBT evidence-based techniques, which

constituted both theory-based methods and practical strategies (see Table 5.1 and Chapter 2 for greater detail). This intervention therefore adopted a useful etiological approach. Moreover, of the three interventions with maintained improvements on body image, the CBT intervention by McLean and colleagues had the longest-lasting and largest effect sizes on several measures of body image, and was evaluated in the most methodologically sound study. Further, a meta-analysis of CBT interventions among the general population identified large effects upon body image, and therefore indicated the benefits of this therapeutic approach (Jarry & Ip, 2005). The effective use of CBT to alleviate distress among women with breast cancer has also been demonstrated (Tatrow & Montgomery, 2006), and this therapeutic approach is currently recommended for use with cancer patients suffering with elevated levels of anxiety and distress (NICE, 2004). Finally, 64% of women treated for breast cancer indicated a preference for a structured group programme in the online survey. Based upon this analysis and the findings of Studies One and Two, it was considered unnecessary to develop a new intervention for use with women treated for breast cancer. Instead, the CBT intervention ‘Set Your Body Free’ by Mclean and colleagues was selected to be adapted for use with women treated for breast cancer and tested for acceptability.

Table 5.1 Mapping of matrix of change objectives for ‘Set Your Body Free’ (McLean et al., 2011)

Determinants	Change Objectives	Performance Objectives
Personal Determinants		
Internalisation of the “youthful-thin” ideal (i.e., the extent to which one buys into the “youthful-thin” ideal)	Reduce internalisation of the “youthful-thin” appearance ideal	<ul style="list-style-type: none"> • Increase media literacy and understanding of the unrealistic “youthful-thin” ideal, which defies the expected appearance changes associated with midlife. • Increase awareness that the cultural messages and promises conveyed in conjunction with the “youthful-thin” ideal, particularly in the media, are exaggerated and often misleading. • Increase knowledge of the costs and consequences of pursuing the “youthful-thin ideal”. • Become more aware of the non-appearance based qualities that make women (e.g., friends, family, women in politics, business etc.) admirable and successful.
Appearance comparison	Reduce comparisons of one’s appearance with that of others	<ul style="list-style-type: none"> • Engage less in upwards comparisons – stop comparing one’s self with women who are perceived to be more attractive. • Be more aware of the natural diversity in appearances among women in real life, with regards to size, shape, age, ethnicity, and other aspects.
External Determinants		
Perceived pressure from the media	Build resistance to media pressure	<ul style="list-style-type: none"> • Increase media literacy, particularly concerning understanding of: <ul style="list-style-type: none"> • Misleading and deceptive media messages from the weight loss, beauty, and

	concerning appearance ideals	<p>fashion industries, which promote the “youthful-thin” ideal.</p> <ul style="list-style-type: none"> • The purpose of adverts from the weight loss, beauty, and fashion industries, to make money, and the associated cycle (i.e., view images; experience discrepancy between ideal and actual body; experience body image concerns; buy product to “fix” body). • Attend to positive media messages, e.g., depictions of women of different ethnicities, ages, and appearances. • Reduce appearance-based media consumption, e.g., stop reading magazines etc.
Perceived pressure from family	Build resistance to family pressure concerning appearance ideals	<ul style="list-style-type: none"> • Teach family about media literacy and the costs of pursuing the unattainable “youthful-thin” ideal. • Become self-aware of negative body talk. • Don’t engage in appearance conversations. • If comments from family members are directly regarding own appearance, stop them and remind them of the greater importance of other personal attributes for self-worth (e.g., kindness).
Perceived pressure from peers	Build resistance to media pressure concerning appearance ideals	<ul style="list-style-type: none"> • Teach peers about media literacy and the costs of pursuing the unattainable “youthful-thin” ideal. • Become self-aware of negative body talk. • Don’t engage in appearance conversations. • If comments from peers are directly regarding own appearance, stop them and remind them of the greater importance of other personal attributes for self-worth (e.g., kindness).

5.3 The selected intervention

The CBT intervention ‘Set Your Body Free’ by McLean et al. (2011) is an eating disorder and body dissatisfaction prevention programme, delivered in eight 2-hour weekly group sessions, followed by a booster session one month following the last session. The context of midlife is emphasised throughout, with themes including age-related appearance changes, the importance of looking beyond appearance for self-worth, engaging in self-care, and body acceptance. Group members are provided with an extensive intervention manual, which contains psycho-educational material, cognitive and behavioural change strategies, self-monitoring sheets, individual tasks to be completed before each session, and group tasks covered in each session¹. The manual also contains an introduction to the intervention, which includes the expectations of group members, information on who may benefit from the intervention, the manual outline, and a help page with contact details for other sources of support. See Appendix 11 for an outline of the aims and content for the eight intervention sessions, including individual tasks to be prepared before each session and within-session tasks.

5.4 Adaptations to the selected intervention

See Appendix 12 for the full adapted manual and Appendix 13 for an outline of the aims and content for the seven adapted intervention sessions, including individual tasks to be prepared before each session and within-session tasks.

5.4.1 Introduction

The ‘Set Your Body Free’ intervention was originally designed for women in midlife without a focus on women treated for breast cancer. Consequently, the introduction was altered accordingly. An introductory paragraph was added to explain the origin of the programme, including its focus upon body image dissatisfaction and disordered eating (p. 8). The paragraph entitled ‘Who may benefit from this programme?’ (p. 9) was adapted to emphasise that women experiencing body image concerns which may, or may not, be related to treatment for breast cancer, might find the programme beneficial. Examples of concerns relating to cancer treatment-induced appearance changes identified in studies among women undergoing treatment for breast cancer (Ashing-Giwa et al., 2004; Beatty, Oxlad, Koczwara, & Wade, 2008; Harcourt & Frith, 2008; Ridner et al., 2012) were also

¹ The intervention manual can be obtained from the researcher or the original authors.

added, e.g. “women who feel unable to look at their body in the mirror; women who feel distressed about their body shape and weight; women who avoid touching their scars from surgery”. Finally, the ‘Help page’ (p. 11) was altered to include British (as opposed to Australian) sources of support, including web addresses for appropriate NHS support services, cancer-specific charities (e.g. Breast Cancer Care), and finally the telephone number of the Samaritans (24 hour telephone support).

5.4.2 Sessions and content

5.4.2.1 Deleted content

The original intervention involved eight sessions, each lasting two hours. Given that the focus of the PhD was on body image, and not disordered eating, material that exclusively focussed on disordered eating was removed from the programme. The remaining material was therefore consistent with the overall aim of reducing body image concerns. Further, material focussing on disordered eating was considered inappropriate for women at different stages of treatment, given that weight, taste, and satiety cues can fluctuate due to the side effects of treatment (e.g. chemotherapy; Yarbro, Wujcik, & Gobel, 2010). These modifications allowed the original eight sessions to be condensed into seven two-hour sessions, without losing the richness of the remaining material. See Appendix 14 for the specific subsections removed and the consequential modifications to the sessions.

In addition, material that collectively addressed body dissatisfaction and disordered eating was examined, and sentences concerning the latter were removed.

For example, under ‘Psychological Factors’ (p5) in Session One, the first paragraph originally ended with the following sentences: “*Dieting encourages and maintains binge eating but it can also occur in response to binge eating. In an attempt to compensate for binge eating or breaking dietary rules, some people feel compelled to adopt some forms of unhealthy behaviours (e.g. self-induced vomiting, laxative and/or diuretic abuse, excessive exercise, or fasting).*”

These two sentences were removed, and the adapted paragraph instead ended in the following sentence: “*One theory suggests that low self-esteem and longstanding feelings of worthlessness can lead to the development of extreme appearance, weight and shape*

concerns, which may promote and maintain the adoption of unhealthy behaviours and outcomes (e.g. dieting practices; too much or too little exercise)”.

5.4.2.2 New content

Session 4 of the manual was amended to provide empirical support for common sociocultural and psychological influences upon body image among both women in midlife treated for breast cancer, and those not. Given that these variables are targeted in the original intervention (see Table 5.1), there was little need to add a large degree of content focussing solely on body image concerns relating to treatment-related appearance alterations, as the key was to target the modifiable sociocultural influences and psychological processes on both treatment- and non-treatment- related concerns. Consequently, only two paragraphs/subsections focussing solely on the impact of treatment for breast cancer were added. The first (‘Life events: treatment for breast cancer’) was added to Session One, under the early section concerning the ‘Development of body dissatisfaction’ (p. 16). The second was added to Session Six, and ‘Ageing related changes to appearance’ was changed to ‘Ageing and treatment related changes to appearance’ (p. 91).

5.4.3 Examples

It was important to maintain a balance between illustrative examples focussed specifically on concerns regarding treatment-related appearance changes (e.g. hair loss), and those illustrating appearance concerns which may not necessarily be related to treatment (e.g. weight concerns).

The original intervention manual included many examples referencing disordered eating (e.g. *“If I think I have eaten too much I feel guilty and angry with myself and then I won’t eat the next day to try to make up for the weight gain”*). These were all altered, given that the focus of the intervention was on reducing body dissatisfaction, not disordered eating.

The majority of the original examples were focussed on weight and shape, and while many were changed to illustrate cancer treatment-related appearance concerns, several of the original examples were left in the manual, given that these could be perceived in

relation to both cancer treatment and separate to treatment (e.g. *“If I gain one kilogram, I’ll go on and gain one hundred kilograms”*; *“My partner prefers me slimmer”*).

5.4.3.1 Concerns regarding cancer treatment-related appearance changes

Many of the original examples were adapted to represent concerns associated with cancer treatment-related appearance changes. These were based on literature which has explored the wide-ranging nature of body image concerns among this group of women, and are described below.

Session One includes Task 1.2 (‘Exploring the pros and cons of change’) within which the original examples illustrating ‘Reasons not to change’ were related to disordered eating, e.g. *“I will feel out of control and scared”*. This was changed to *“I am scared of people staring at me”* (p. 21). This reflects the anxiety that women with treatment-related appearance changes may experience, if they do not camouflage themselves in public (e.g. with a wig; Harcourt & Frith, 2008).

The example originally provided to illustrate the premise of a ‘Cognitive behavioural therapeutic approach’ in Session Two (p. 27) was centred around disordered eating and fear of weight gain: *“It feels like every single second of my life is dominated by thoughts about food and about how much I dislike my body. After every meal and snack I struggle with anxious thoughts about how much I have eaten and whether I will gain weight. If I think I have eaten too much I feel guilty and angry with myself and then I won’t eat the next day to try to make up for the weight gain”*. This was replaced with an example focussed on treatment-related appearance concerns: *“It feels like every single second of my life is dominated by thoughts about how much I dislike my body. When I shower at the gym, I struggle with anxious thoughts about everyone staring at my chest. I feel self-conscious and embarrassed and so I wait to shower when I get home.”*

Under the section concerning ‘Common thinking traits’ in Session Three, an original example illustrating ‘Select abstraction’ in Session Three (p. 44) was focussed on weight concerns: *“My ex-boyfriend was only attracted to skinny women, I will never get a man unless I am skinny”*. This was changed to reflect concerns regarding a treatment-related appearance change: *“My nails looked awful last night, they will never look good again”*.

Additionally, the common thinking trait of ‘shoulds’ (p. 44) was illustrated by an example focussed on dieting: *“I should be able to keep to my diet”*. This was adapted to

illustrate concerns associated with a treatment-induced appearance change: *“I should be able to reduce the swelling of my arm due to lymphedema, to get it back to the size before treatment”*.

An example originally provided to describe ‘Relationships and body image concerns’ in Session Four was focussed on eating concerns (p. 58): *“My eating and body image concerns are really affecting my relationship with my boyfriend. He tries to understand how I feel, and how sometimes I need to be alone and don’t want to go out because I feel so bad about my body or what I may have eaten that day, but he still gets really frustrated with me”*. This was adapted to focus on cancer treatment-related concerns: *“My body image concerns are really affecting my relationship with my partner. He tries to understand how I feel; telling me he appreciates it must be difficult getting used to a different body. But I feel so disgusted by the burnt skin from radiotherapy, that I don’t want anyone to see my body, let alone touch it. He gets really frustrated and upset with me”*.

Examples of ‘Positive media messages’ in Session Four (p. 66) were added in relation to appearance changes following treatment. This included Breast Cancer Care photographs, which featured unclothed women treated for breast cancer, and positive statements from women regarding their altered appearance.

The disordered eating example illustrating the ‘Cognitive restructuring process’ in Session Five was changed from *“I’ll lose control if I eat one piece of cake”* to an example focussed on a treatment-related appearance change: *“My friends will feel repulsed by me if I don’t wear my wig”*.

5.4.3.2 Concerns regarding ageing-related appearance changes

Given that the intervention was focussed on improving concerns associated with an ageing appearance, related examples (e.g. *“I nearly died when I found my first grey hair”*) were not altered, while others illustrating disordered eating or weight and shape concern were changed to reflect concerns relating to ageing.

An original example of ‘Superstitious thinking’ as a type of ‘Thinking trait’ in Session Three (p. 45) was focussed on weight: *“If I don’t exercise every day my muscles will turn into fatty cellulite”*. This was changed to an example illustrating concerns in relation to

ageing-related appearance changes: *“If I go out in the sun, I will develop five new wrinkles the next day.”*

5.4.3.3 Concerns regarding general appearance

There were already examples in the original intervention manual that focussed on concerns in relation to appearance in general (e.g. *“I’m confident with my clothes on, but I feel awful about my body underneath”*), rather than in relation to specific aspects of appearance (e.g. *“If I go out in the sun, I will develop five new wrinkles the next day”*), and these were not changed. However, other examples focussed on disordered eating or weight and shape concern were altered to illustrate concerns in relation to appearance more generally.

An original example illustrating the ‘Impact of body image concerns on your life’ in Session One (p. 16), was not altered: *“I can’t stand looking at myself in the mirror. When I do look, I am disgusted and revolted by what I see. My partner says I have nothing to be worried about, but sometimes I think he is just trying to be nice. Compliments about my appearance don’t make any difference to me. I just can’t stand my body anymore and wish it didn’t belong to me.”*

Task 1.2 (‘Exploring the pros and cons of change’) in Session One originally included examples related to disordered eating under ‘Reasons for changing’, e.g. *“I will be able to go out with my friends for dinner more”*. This was changed to *“I will be able to go out with my friends and have fun because I won’t be worrying about what I look like”* (p. 21).

An example originally provided in Session Three to illustrate ‘Body-related negative talk’ (p. 42) was focussed on weight concerns: *“My boyfriend/husband/ mother thinks I have to be thin”*. This was changed to *“I should be able to control my appearance”*.

Finally, the example provided to illustrate ‘Cognitive restructuring for modifying mistaken beliefs’ in Session Six (p. 95) was adapted from a weight focussed example (*“Being skinny is the only way I have any value in the world”*) to an example concerning appearance more generally (*“Looking good is the only way I have any value in the world”*).

5.5 The adapted intervention: Implications for intervention development

This chapter integrated the findings from the systematic review of body image interventions for both women in midlife treated, and not treated, for breast cancer (Chapter 3) and the findings from the online survey that compared sociocultural influences and psychological processes between these groups of women (Chapter 4), to inform the decision to select and adapt an existing intervention for women in midlife: ‘Set Your Body Free’ (McLean et al., 2011).

This CBT body image intervention was selected on the grounds that it was the most methodologically rigorous intervention identified in the systematic review, with the longest-lasting improvements demonstrated on the greatest number of aspects of body image. Further, the intervention targets sociocultural influences and psychological processes which were found to influence the body image of both women in midlife treated, and not treated, for breast cancer, which indicates its potential applicability to those treated for breast cancer. The adaptations made to the intervention aimed to increase its relevance to this group of women. This was attempted by addressing concerns associated with treatment-related appearance changes, concerns which may have existed pre-treatment, or those arising following treatment, independently of treatment-related appearance changes, as based on prior research among women in midlife, and the subgroup treated for breast cancer. Finally, the format of the selected intervention was in line with the preferences (e.g. structured small group programme led by a trained facilitator) of this group of women identified in Study Two (Chapter 4).

The intervention was selected based on the findings of an objective and rigorous systematic review, and then adapted based on previous literature to make it more appropriate for addressing the concerns of women treated for breast cancer. However, it was also deemed important to explore the opinions of women who comprise the target group of the intervention and health professionals with expertise in working with women treated for breast cancer, otherwise it cannot be certain that the intervention will actually be taken up and translated into routine care where needed. The following chapter explores the acceptability of the adapted intervention among women treated for breast cancer and health professionals who work with this group. This will constitute Step 4 of Intervention Mapping (Eldredge et al., 2011), where intended participants and implementers are consulted regarding the proposed intervention.

Chapter 6: Evaluation of the acceptability of the adapted body image intervention for women treated for breast cancer

6.1 Introduction

6.1.1 Importance of exploring the acceptability of an intervention

The preceding chapters demonstrate the rigorous evidence- and step- based approach that was adopted throughout the PhD and therefore informed the identification and modification of an existing body image intervention for use with women treated for breast cancer (Chapter 5). It was important at this stage to examine whether the proposed intervention was considered acceptable to stakeholders, as acceptability is deemed vital for the implementation, effectiveness, and incentive for continued use of an intervention (Nastasi et al., 2000). Assessing acceptability is a facet often ignored in piloting work, yet crucial for determining the likely uptake of an intervention (Craig et al., 2008). Further, it provides an opportunity to identify any changes to be made before the next stage of intervention development and evaluation, which involves examining feasibility.

The MRC framework recommends the use of various methods throughout the process of developing and evaluating an intervention (Craig et al., 2008). Thus far in the thesis, this recommendation has been applied by examining existing evidence (as demonstrated by the systematic review of interventions in Chapter 3) and engaging with potential service users (as demonstrated by the survey of intervention preferences among women treated for breast cancer in Chapter 4). The current study employed both user engagement and qualitative methods by consulting women treated for breast cancer, in addition to health professionals with expertise in providing psychosocial support for breast cancer patients, regarding their views concerning the acceptability of the proposed intervention. These two groups were selected in order to explore the perspectives of both the population who would be using the intervention and the clinicians who would probably be delivering it or referring clients to it.

The current study complied with Step 4 of Intervention Mapping (Eldredge et al., 2011), whereby intended participants and implementers should be consulted regarding the programme themes, materials, activities, and format. This step satisfies part of the

Feasibility/Piloting stage of the MRC framework, which emphasises the importance of assessing acceptability of the intervention (Craig et al., 2008). This phase comprises developing an understanding of the intervention and its possible effects by delineating its components and how they inter-relate in determining final outcomes.

6.1.2 Objectives

- To explore the acceptability of the adapted body image intervention among women treated for breast cancer and among health professionals.
- To identify any changes that should be made to the components of, and format in which, the body image intervention should be executed in order to enhance acceptability.

6.1.3 Research questions

- Is the body image intervention considered acceptable to women treated for breast cancer and to health professionals who may be involved in its delivery?
- What modifications, if any, should be made to the components and delivery format of the intervention in order to enhance its acceptability?

6.2 Method

6.2.1 Design

This study adopted a qualitative design using interviews and focus groups, two methods commonly employed in acceptability studies in health intervention research (Ayala & Elder, 2011). The rationales for the use of focus groups with women treated for breast cancer and interviews with health professionals are outlined below.

6.2.1.1 Focus groups with women treated for breast cancer

Focus groups were conducted with women treated for breast cancer. Face-to-face focus groups were favoured over interviews, as they allow participants to engage in shared brainstorming of issues and ideas, sometimes referred to as a “synergising group effect” (Sussman, Burton, Dent, Stacy, & Flay, 1991). In relation to dealing with sensitive topics, while interviews may provide a safer context for disclosure, participants may experience reluctance, fear and embarrassment at the prospect of sharing information solely with a researcher who is not at the same life stage nor has personally experienced

diagnosis and treatment for breast cancer (see 6.2.7 concerning reflexivity). Focus groups can provide “safety in numbers” by facilitating discussion and by providing participants with greater control over what they share or withhold (Barbour, 2010). Being aware that other participants may have had similar experiences may facilitate discussion of sensitive topics (Frith, 2000).

Further, given that focus groups constitute social interactions; they might provide insight into the running of the proposed group-based intervention (Puchta & Potter, 2004). Finally, this method was more cost-effective in terms of time and research expenses, given that the opinions of women with diverse experiences of breast cancer and diagnoses were sought across different geographic regions of the United Kingdom. PPI was not sought with regard to the design of the research study, given that the study itself in essence constituted PPI for intervention programme development, and participants were made aware of the design before choosing to take part in the focus group. Nevertheless, the counselling psychologist and centre manager of breast cancer charity Maggie’s centre in Swansea were consulted, and both fully supported the study and rationale for a focus group design.

6.2.1.2 Interviews with health professionals

Key informant interviews were conducted over the telephone with clinical psychologists and breast cancer nurse specialists, all of whom possessed clinical experience and expertise in the treatment of breast cancer and body image-related issues. Individual interviews were preferred to focus groups in this context as they can offer an opportunity to acquire information of greater depth and richness (Speziale, Streubert, & Carpenter, 2011). This was considered important given the likely differences between the recruited health professionals in terms of their years of clinical expertise, therapeutic orientations and methods used in practice. Further, given that specialist expertise relating to breast cancer and body image is not available throughout the UK, focus groups were impractical and unfeasible as the participating health professionals would be located across the country and have very busy schedules.

Telephone interviews were favoured in place of face-to-face interviews, given that the health professionals were scattered across the UK, and their busy work commitments often meant they had to rearrange the time-limited interview at short notice. This mode of interview was consequently considered more time and cost-effective (Mann &

Stewart, 2000). Telephone interviews are often criticized as they do not provide the non-verbal communication and social cues present in face-to-face interactions, which can enhance the richness of data (Chapple, 1999). However, data obtained using these two mediums have been reported to be of equal quality and richness (Sturges & Hanrahan, 2004; Sweet, 2002). Further, it has been argued that participants can talk more freely on the telephone, as they may feel more relaxed, and rapport is consequently improved (Hopper, 1992; McCoyd & Kerson, 2006). Finally, refusal rates tend to be lower when the interview is done over the phone rather than face-to-face (Rosenthal & Rosnow, 1991).

6.2.2 Recruitment strategies

A variety of strategies were pursued to recruit women treated for breast cancer and health professionals.

6.2.2.1 Women treated for breast cancer

Participants who had previously taken part in Study Two (Chapter 4) and indicated that they were happy to be contacted regarding future research were emailed about the study. The manager of Maggie's Swansea centre was approached once again, as she had expressed interest in assisting with recruitment. Additionally, various Bristol-based breast cancer support groups were approached, including Bosom Buddies (www.bosombuddiesbristol.org), Keeping Abreast: Bristol and South West (www.keepingabreast.org.uk/bristolsw-group), and the Breast Cancer Support Unit Trust (BUST) Members Support Group (www.bustbristol.co.uk). See Appendix 9 for details concerning the nature of these groups. Maggie's Swansea centre informed potential participants about the study when they dropped into the centre, while the three Bristol-based support groups circulated the participant information sheet (Appendix 15) to members via email. Women who were interested in the study emailed the researcher for additional information.

The eligibility criteria for women included being at least 35 years of age (for consistency with inclusion criteria for participants in the online survey), English-speaking and literate, and with a current or historical diagnosis of breast cancer.

6.2.2.2 Health professionals

Clinical psychologists and breast cancer nurse specialists with at least 10 years' experience and expertise in body image and breast cancer, and who had previously expressed an interest in the work conducted at the Centre for Appearance Research were contacted via email with the participant information sheet (Appendix 16). In addition, the clinical teams at UK-based cancer charities were contacted regarding participation.

6.2.3 Participants

6.2.3.1 Women with breast cancer

Overall, 49 women indicated their interest in participating, but 27 were unable to take part due to travel restrictions, illness, and other commitments. Therefore a total of 22 women took part in the study. See Appendix 17 for a table of the demographic characteristics for each individual woman, including diagnosis- and treatment- related details.

The mean age of women in the focus groups was 51 years, with the youngest participant aged 37 and the oldest 69 years. The mean BMI of participants was 26.6, which lies at the lower end of the 'overweight' category. Nearly all women identified as White (90.1%), and were either married (72.7%) or in a relationship (18.2%). With regard to employment, nearly half the participants were in full-time work, while a quarter worked part-time. Most of the women had obtained either an undergraduate degree (31.8%) or Masters degree (27.3%). More than two thirds of women were postmenopausal, due either to a natural menopause (36.4%) or to a medically induced menopause (31.8%). See Table 6.1 for further demographic details across the full sample.

With regard to cancer and treatment characteristics, women received their last diagnosis of breast cancer on average 45.5 months earlier. There was large variability concerning time since diagnosis ($SD = 40.9$ months), and four participants (18.2%) had received a second diagnosis of breast cancer at a later date. The majority of women were diagnosed with invasive cancer (68.2%), within which stage II was the most common stage of cancer progression (36.4%) followed by stage III (27.3%). The average time since surgery was 55.3 months. The majority of women had undergone a mastectomy, most participants receiving breast reconstruction (immediate: 36.4%, delayed: 18.2%), as opposed to no reconstruction (22.7%). With regard to adjuvant therapy, two thirds of

women had undergone chemotherapy (63.6%) and radiotherapy (63.6%), while half of the women had also received hormone therapy. Further, more than half of women had experienced a combination of these adjuvant therapies (54.5%). The mean time since participants had received their last treatment was 18.9 months, but there was a high degree of variability (SD: 41.3 months). A minority of participants had received a diagnosis of lymphedema (22.7%). See Table 6.2 for further treatment-related details across the full sample.

Table 6.1 Demographic information across the sample of women

Demographic Information	Women with Breast Cancer (<i>n</i> =22)
Age (years)	
Mean (SD)	51 (7)
Range	37-69
BMI	
Mean (SD)	26.6 (6.4)
Range	17.2-46.0
Ethnicity n (%)	
White	20 (90.1)
Mixed	1 (4.5)
Asian/Asian British	0 (0)
Black/African/Caribbean/Black British	0 (0)
Other ¹	1 (4.5)
Relationship status n (%)	
Single	1 (4.5)
Married	16 (72.7)
In a relationship	4 (18.2)
Divorced	0 (0)
Separated	1 (4.5)
Widowed	0 (0)
Employment status n (%)	
Full-time	10 (45.5)
Part-time	5 (22.7)
Unemployed	0 (0)
Retired	3 (13.6)
Student	0 (0)
Other ²	4 (18.2)

Demographic Information	Women with Breast Cancer (<i>n</i> =22)
Education level <i>n</i> (%)	
GCSE/O-Level or equivalent	3 (13.6)
A Level or equivalent	1(4.5)
Higher Education Certificate or Diploma	4 (18.2)
Undergraduate Degree	7 (31.8)
Master's Degree	6 (27.3)
PhD or equivalent	0 (0)
No Qualifications	0 (0)
Menopausal status <i>n</i> (%)	
Postmenopausal (no periods for over 12 months)	8 (36.4)
No period in past 12 months	0 (0)
Bleeding in past 12 months, but not in past 3 months	0 (0)
Experiencing period irregularity	2 (9.1)
Premenopausal	3 (13.6)
Medical menopause	7 (31.8)

¹One participant identified as Russian Jewish

²Two participants were on sick leave (currently receiving treatment), while the third was not 'currently working', and the last identified as a 'housewife'

Table 6.2 Diagnosis and treatment information across the sample of women

Diagnosis and Treatment Information	Women with Breast Cancer (<i>n</i> =22)
Time since diagnosis (months)	
Mean	45.5
SD	40.9
Range	2-180
Type of cancer n (%)	
Invasive	15 (68.2)
Non-invasive	5 (22.7)
Not sure	2 (9.1)
Stage of cancer n (%)	
0	2 (9.1)
I	4 (18.2)
II	8 (36.4)
III	6 (27.3)
IV	1 (4.5)
Not sure	1 (4.5)
Type of surgery n (%)¹	
Lumpectomy or wide local excision	8 (36.4)
Mastectomy without breast reconstruction	5 (22.7)
Mastectomy with immediate breast reconstruction	8 (36.4)
Mastectomy with delayed breast reconstruction	4 (18.2)
No surgical treatment	1 (4.5)
Combination of procedures	4 (18.2)
Time since last surgery (months)	
Mean	55.3
SD	42.9
Range	0-188

Diagnosis and Treatment Information	Women with Breast Cancer (<i>n</i> =22)
Adjuvant therapy <i>n</i> (%)	
Chemotherapy	14 (63.6)
Radiotherapy	14 (63.6)
Hormonal therapy	11 (50)
None	2 (13.6)
Other ²	1 (4.5)
Combination of therapies	12 (54.5)
Time since last treatment	
Mean (SD, range) in months	18.9 (41.3, 0-188)
Previous diagnosis of lymphedema?	
Yes	5 (22.7)
No	17 (77.3)

¹Cumulative percentage may exceed 100 as participants were allowed to select more than one type, reflecting the likelihood that they had received a combination of surgical treatments.

²One participant received Herceptin

6.2.3.2 Health professionals

Five female health professionals participated in the study, including two breast cancer nurse specialists and three clinical psychologists. All health professionals were given pseudonyms. Sarah was a Nurse Specialist with 25 years' experience of breast care, currently working as a clinician in the private sector. Louise was a Nurse Specialist with 20 years' experience in breast care, currently working in the charitable sector. All three of the clinical psychologists were practising within NHS hospitals at the time of the study. Julia had 25 years of clinical experience, while both Emily and Anna had 10 years of experience working in breast cancer care.

6.2.4 Ethical approval

Ethical issues which were pertinent to this study included confidentiality and anonymity. This was considered an important issue for the health professionals, as they were sharing their professional opinions regarding the proposed intervention, which they may not have wished to share with other health professionals. They were consequently reassured of anonymity and confidentiality with regard to their opinions. These concerns were also relevant for the women treated for breast cancer, particularly given that some of the participants attended the same support group. However, participants were assured of their anonymity, and participants agreed at the beginning of each focus group that everything discussed would remain confidential and not leave the group. An additional concern of the current study was the potential for participants to become distressed. However, given that the study's focus was exploring their views on a proposed intervention, rather than their own body image, distress was anticipated to be minimal. Nevertheless, the participant information sheet included numerous links to charities and support groups which provide support to individuals who feel distressed generally or in relation to body image concerns (e.g. Mind, Breast Cancer Care, see Appendix 15).

Ethical approval was obtained from the Faculty of Health and Applied Sciences Research Ethics Committee at the University of the West of England, Bristol (REF No: HAS/15/04/151). The NHS Health Research Authority online decision tool was employed to determine whether NHS ethics approval would be necessary (www.hra-decisiontools.org.uk/research). Results obtained using the tool were verified by an operation manager from the Health Research Authority, who confirmed that the study would not require review by an NHS Research Ethics Committee. This was based on the premise that recruitment of women treated for breast cancer would take place via charitable organisations (i.e. Breast Cancer Care, Maggie's), and interviews with health professionals would focus on their professional views regarding the proposed intervention rather than their experience of working with these individuals or their thoughts about the NHS.

6.2.5 Procedure

6.2.5.1 Interview schedules

A semi-structured interview approach was adopted, as it provides participants with enough guidance on answering the questions and allows the interviewer to probe for further details which may not have been considered in the original interview schedule, consequently increasing the likelihood of discovering unique information (Ayala & Elder, 2011). The interview schedules were very similar for the health professionals (Appendix 18) and women treated for breast cancer (Appendix 19), and they were devised by the researcher and reviewed by the supervisors. Both interview schedules were designed to address the central components of the intervention: a) programme content (e.g. ability to relate to content and examples, most and least helpful tasks, adequacy of different topics); b) accessibility to the intervention (e.g. stage of treatment when appropriate, other obstacles to participation etc.); c) intervention format (e.g. adequacy of length and duration of the programme, schedule, facilitators etc.); and d) presentation of material (e.g. language, design of manual etc.). In addition, health professionals were asked about their clinical work with women treated for breast cancer. While interview questions were not asked in a set order, care was taken to ensure all acceptability domains were explored. Further, both groups of participants were encouraged to provide recommendations to improve the programme, if they deemed this appropriate.

6.2.5.2 Women treated for breast cancer

Women were sent the intervention manual (see Appendix 12) prior to their focus group, and all were asked to read the Introduction and Session One. However, each focus group was allocated a further session to read, and this differed between groups. The researcher did not wish to burden the women and it was not feasible to examine every single session in each focus group. This assignment of the sessions therefore allowed for an in-depth exploration of the different acceptability domains for every session, while ensuring that focus groups were conducted in a manageable length of time. Nevertheless, women were encouraged to read beyond their allocated sessions if they wished, and to write their opinions and recommendations directly onto the manual, ready to share these in the focus group.

Focus groups were conducted in four locations across England, in order to facilitate the attendance of participants situated across the UK. Six focus groups were conducted, three of which were conducted in Bristol (3 participants; 5 participants; 4 participants), one in

London (3 participants), one in Nottingham (3 participants), and one in Manchester (3 participants). While it has been recommended that focus groups should ideally comprise four to eight participants (Wilkinson, 2004), a smaller group can facilitate the discussion of sensitive issues (Frith, 2000). At the beginning of the focus groups, participants were requested to read the participant information sheet again, and were given the opportunity to ask questions before signing the consent form (Appendix 21). They were also reminded of the confidentiality of what they said and what they heard from other women in the group and of their right to withdraw from the study. Before the focus groups began, participants completed the background information questionnaire (Appendix 20). Focus groups were audio-recorded and lasted between 128-231 minutes ($M = 193$ minutes, $SD = 34$ minutes). Upon completion of the focus group, each woman was given a £20 shopping gift card to thank them for their participation. An additional telephone interview (lasting 107 minutes) was conducted with one other woman, who was keen to take part but was unable to attend a focus group. This interview followed the same procedure.

6.2.5.3 Health professionals

All health professionals were offered an interview either in person or over the phone, but only one person, Anna, chose to have the interview in person, while the others did it over the telephone. Health professionals were asked to read the whole intervention manual ahead of the interview, so the questions covered in the interview schedule were directed towards the intervention generally rather than isolated excerpts. Before the scheduled interview, health professionals were reassured of their anonymity and were given the opportunity to ask questions before signing a consent form (Appendix 22). Health professionals participated in the telephone interview at work. All interviews were audio-recorded and lasted between 54-105 minutes ($M = 71$ minutes, $SD = 18$ minutes). Upon completion of the interview, health professionals were reminded of their right to withdraw from the study and were thanked for their time.

6.2.6 Analysis

All interviews and focus groups were audio-recorded and transcribed verbatim. Transcripts were uploaded to NVivo 10, qualitative analysis computer software, which assists with manually organising and highlighting quotations. In line with the pragmatic epistemological approach adopted in the thesis, a qualitative analytical approach was

selected for its adequacy to provide insights into the research questions of the study. Given that the research questions were focussed on exploring the perceived acceptability of the adapted intervention in relation to pre-determined domains (content, presentation, format, and accessibility), a deductive approach analysing at the surface level of transcripts was appropriate, the aim being to address the visible and obvious components of the text (referred to as ‘manifest content’), as opposed to inferring its deeper underlying meaning (referred to as ‘latent content’; Graneheim & Lundman, 2004). Indeed, the study aimed to pragmatically examine participants’ explicit opinions of the intervention at face value, and to analyse these deductively in relation to pre-determined categories. Analytical methods which adopt an inductive or/and a highly abstract approach to identify implicit ideas, such as grounded theory (Glaser, 1992) and thematic analysis (Braun & Clarke, 2006), were therefore inappropriate for the present study. Instead, transcripts were subjected to content analysis; a flexible method for analysing text data which has grown in use and popularity in health research (Cavanagh, 1997; Nandy & Sarvela, 1997).

Content analysis focusses on the features of language as communication with particular attention to the content or contextual meaning of the text (Hsieh & Shannon, 2005). It consequently examines language through the systematic process of coding, in order to classify large volumes of text into categories that signify similar meanings, which can represent either explicit or inferred communication (Hsieh & Shannon, 2005; Weber, 1990). Content analysis comprises three different approaches, including the conventional, summative, and directed approaches (Hsieh & Shannon, 2005). The directed approach was employed in the present study due to its structured and deductive process, whereby pre-determined overarching categories are in place before the analysis is conducted, with new categories added when data do not fit the existing categories (Hickey & Kipping, 1996).

Overarching coding categories addressing the acceptability domains were established before analysis began (e.g. ‘content topics’, ‘therapeutic strategies’), and these reflected the different aspects of the intervention explored with participants in the interview schedule. These overarching coding categories were split into subcategories representing the different topics to be explored within that specific domain. For example, ‘content topics’ were split into ‘body image and wellbeing’, ‘historical perspectives of the youthful thin ideal’ etc., while ‘therapeutic strategies’ were split into ‘feeling ready to

change', 'CBT approach', 'self-care', etc. Transcripts were read and coded using these predetermined subcategories. Following coding, data for each subcategory was examined to determine the need for further subcategories. For example, 'disclosure', 'communication', and 'intimacy', were added as further subcategories under 'relationships and body image', as they were discussed as important issues that could be addressed to a greater extent in the programme. The resulting categories were used to guide a narrative description of the findings focussing on the acceptability of the intervention.

Given that the same domains were explored with health professionals and women treated for breast cancer, and that coding revealed similar opinions across the groups, the data for both the health professionals and women were combined for the directed content analysis. While all transcripts were analysed by the researcher, one transcript was also cross-checked by the principal supervisor to verify the reliability of the coding and classification. There was a high level of agreement, and the researcher subsequently proceeded with analysis. See Appendix 23 which presents the analytical process using NVivo and examples of coded transcripts.

6.2.7 Reflexivity

Reflexivity is considered an indicator of rigour in qualitative research (Koch & Harrington, 1998). A reflexive researcher is one who steps back and critically examines their role in the research (Guillemin & Gillam, 2004). My own personal experience of conducting the interviews and focus groups, and analysing the data, is relevant to the whole thesis. I have included the reflection here, as it is particularly pertinent in the analysis of qualitative data.

As a single woman in my late twenties with no personal experience of breast cancer, I was conscious that my age and lack of experience with cancer might influence the dynamics of the focus groups, given that all participants had been diagnosed and treated for the disease, and that the majority were older than I am and were married with children.

While I possess no personal experience of breast cancer, my three years of research focussing on the impact of breast cancer treatment on body image has increased my professional knowledge regarding diagnosis and treatment. Thus, I entered the focus

groups as neither an expert nor a blank slate. Several participants were interested in what brought me to the PhD, asking “Why breast cancer?”. I was completely honest in sharing my motivations and therefore reflecting my interest in and perceptions of the importance of the area as a research psychologist. I can only hope that this verified my authenticity as an interested and committed party and facilitated participants’ openness and honesty. Conducting the focus groups has further enhanced my understanding of the psychosocial impact of breast cancer and has increased my motivation for developing effective methods of support for those affected.

Given that I was younger than the participants, and single with no children of my own, I was worried that they might not be completely honest when it came to appraising the programme material addressing relationships and family. I was concerned that they might not feel able to relate to me, or might think that I might not be interested in the topic. Nevertheless, this topic stimulated the most conversation, with participants discussing the impact of their body image upon relationships with their partners, including the negative effects upon intimacy. Reflecting upon this made me realise that the company of the other women with similar experiences was more likely to facilitate sharing and honesty, and that my presence as a dissimilar researcher appeared not to diminish this.

Whilst some participants were quick to identify their own appearance concerns, there were several who initially stated that their appearance did not impact on their lives or cause concern, but they could appreciate that many other women might be affected. Interestingly, however, these women later acknowledged that they did in fact possess anxieties and experience distress regarding their appearance, and that their behaviour had indeed been affected. They said they had come to this realisation through the focus group discussions and by reading the material, and were simply unconscious of, or had been avoiding confrontation with, these issues until that point. At first, I felt responsible and guilty that they left the focus groups with greater awareness of their appearance concerns. However, I reflected on the fact that all participants explicitly stated that they had found taking part in the focus group a very beneficial experience, particularly as it showed them that they were not alone in their feelings. They also said it was helpful to recognise that their behaviour had been influenced by these concerns. Further, participants were fully aware that the study would involve half a day appraising a comprehensive body image programme, and they self-selected themselves to participate.

Engaging in the reflexive process and becoming aware of my thoughts was a beneficial experience overall. While I found it sad listening to the women share the ways in which treatment-related body image concerns had adversely affected their lives, everything I had read in the literature, and discovered from the online survey in Study Two (Chapter 3), was brought to life. It also reinforced my awareness of the importance of developing psychosocial body image interventions for this population.

6.2.8 Ensuring the quality of research

In order to ensure the quality of this study, two sets of recognised guidelines for the assessment of qualitative methods were consulted (Elliott, Fischer, & Rennie, 1999; Yardley, 2000).

Elliott et al. (1999) developed their guidelines by uniting and reviewing existing standards of good practice, with the intention of capturing essential aspects for the conduct and publication of qualitative research. They proposed seven criteria that should be applied in both qualitative and quantitative approaches, including explicit scientific context and purpose; appropriate methods; respect for participants; specification of methods; appropriate discussion; clarity of presentation; and contribution to knowledge. Seven additional criteria particularly pertinent to qualitative research were proposed, which included owning one's perspective; situating the sample; grounding in examples; providing credibility checks; coherence; accomplishing general versus specific research tasks; and resonating with readers. Upon examination, the study was considered to have met all the guidelines proposed by Elliott et al. (1999) for the publication of qualitative research.

Yardley (2000) developed a set of open-ended and flexible guidelines for assessing the quality of qualitative research. She was seeking to address the issues associated with the diversity of qualitative methods within health psychology, their novelty as an approach in psychological research, and the difficulty of quality control in qualitative methods. The principles proposed included sensitivity to context; commitment and rigour; transparency and coherence; impact and importance. Table 6.3 displays evidence of the ways in which the current study met the guidelines recommended by Yardley (2000) for assessing the value of qualitative research.

Table 6.3 Assessment of the quality of the acceptability study using Yardley's (2000) criteria

Criteria for Good Quality Research	Evidence for Criteria
Sensitivity to Context	<ul style="list-style-type: none"> • Efforts were made to increase the researcher's understanding of diagnosis and the different methods of treatment and their associated effects on appearance. • The researcher approached a range of different health professionals with differing experiences for participation. • The researcher was aware of and sensitive to the likelihood that the study would evoke emotive responses from participants. • Ethical issues in the current study were cautiously considered and accounted for by the researcher. • Participants found participation in the study beneficial. • A high response rate to the invitation to take part in the study suggests that participation was not considered too onerous or invasive.
Commitment and Rigour	<ul style="list-style-type: none"> • Prolonged engagement of the researcher with the topic of breast cancer and body image due to nature of associated studies within PhD. • The development of the researcher's competence and skill in the research methods employed. These were selected based on their ability to best address the study's research question. • "Triangulation" of methods employed by the researcher.

Criteria for Good Quality Research	Evidence for Criteria
	<ul style="list-style-type: none"> • The researcher gathered data from different sources with different experiences (i.e. clinical psychologists, nurse consultants, women with different types of diagnoses of and treatment for breast cancer).
Transparency and Coherence	<ul style="list-style-type: none"> • Every aspect of the data collection process and rules used to code data provided (see Appendix 23 for excerpts of transcripts and coding). • Quotes from transcripts included to support qualitative analysis. • Every step of quantitative analytical methods in preceding studies disclosed. • Reflexivity considered with regard to the influence of the researcher's age, relationship status, and lack of personal experience of breast cancer.
Impact and Importance	<ul style="list-style-type: none"> • Provides a new intervention to promote positive body image among this group. • Topic of research validates appearance concerns possessed by women following treatment for breast cancer. • Topic has been highlighted as important by policy statements and initiatives. • Application for post-doctoral funding to conduct a feasibility study of the intervention was accepted indicating recognition of the works' potential impact and importance.

6.3 Findings

Directed content analysis resulted in five main overarching categories which reflected intervention components, all of which included subcategories. The five overarching categories were: Relevance of the Issue, and Experience of Available Interventions (2 subcategories), Content Topics (9 subcategories), Therapeutic Strategies (8 subcategories), Format and Materials (3 subcategories), and Overall Perceptions regarding Effectiveness of the Intervention (2 subcategories; see Figure 6.1). The multiple subcategories for both Content Topics and Therapeutic Strategies correspond to related sections of the programme manual with the same title. Many of these included further subcategories (e.g. ‘Intimacy’ under ‘Relationships and Body Image’), and while these are not displayed in Figure 6.1, they are described in detail under their respective subcategory. Overarching categories are represented by bolded headings and subcategories by bolded subheadings. Participant quotations are used to confirm and exemplify the resulting categories, with the use of pseudonyms throughout. The age of the participant (in the case of women treated for breast cancer) is also provided in brackets.

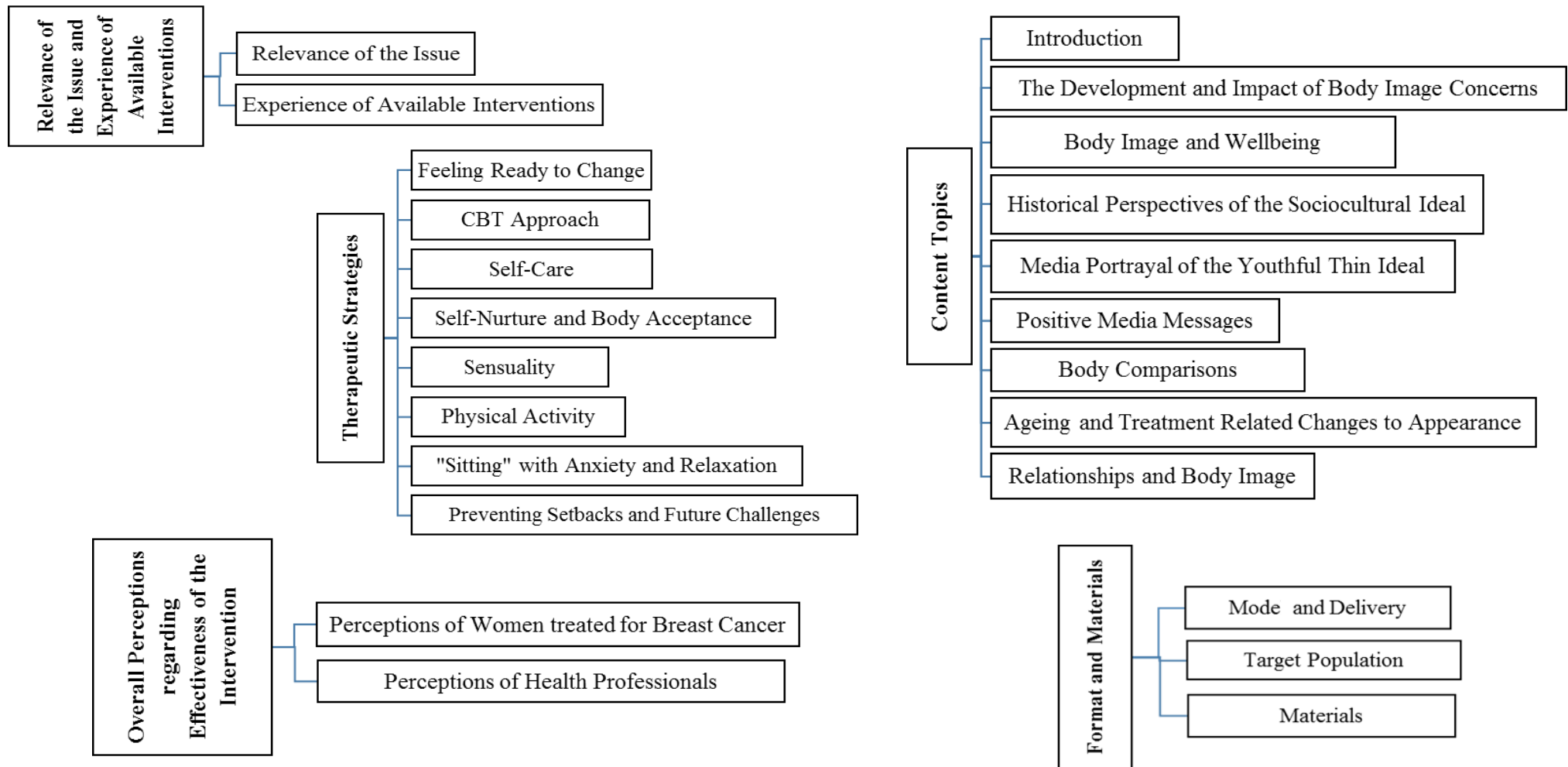


Figure 6.1 Categories and subcategories identified through directed content analysis

6.3.1 Relevance of the issue and experience of available interventions

Relevance of the issue

There was a consensus across focus groups that women often feel unhappy with their appearance and body both during and following treatment for breast cancer. The long-lasting impact of treatment-related appearance changes that can persist for years following treatment was discussed.

The whole kind of 'having cancer' feels in the distance but issues around body image are still very much with me.. (Louise, 50)

It's when people say "Gosh you look really well, you'd never know".. but my husband and my step-daughters and, to a certain extent, my son as well, because I'm up and about now and everything – that's it. In their minds - have ticked off that that's fine, I've done that. But in here (points to head), every time you have a shower, get out of the shower and I catch myself in the mirror and it's still just "Oh!" (Sharon, 47)

There was the impression that several women had been oblivious of the impact of their treatment-related body image concerns, while other women had been repressing their body image concerns. However, through the course of reading the manual and participating in the focus group, they said they had recognised that body image was more important to them than they had previously realised.

I didn't realise just how much my body image was at the back of my mind until I read through this and I thought "I do that, I do this". (Amanda, 48)

I don't like to think about it... I put my head in the sand and just want everything to go away.. just want life to carry on as normal (Sharon, 47)

Changes to the body in relation to physical functions and capabilities associated with treatment and its side-effects were a prominent source of prolonged distress for many focus group participants. Both the women and health professionals identified this as an aspect of body image that was not adequately addressed in the intervention.

I always thought of myself as a really fit and healthy person, and then I had cancer.. and then the cancer was treated and then I was going to be well again.

And actually it's been a litany of other things that make me an ill person, and I don't like that. (Sharon, 47)

It doesn't talk about altered sensations, about the lack of sensory feedback and lymphedema, which really does change what somebody looks like but also what their internal, biological body feedback is... (Emily, Clinical Psychologist)

The impact of natural ageing on the body also arose in focus group discussions as a relevant issue to women at this life stage. Further, many women treated for breast cancer said they felt distrust towards their bodies, and found it difficult to correctly attribute sources of physical problems to normal ageing or side-effects of treatment.

My issues are more to do with the ageing process rather than anything else. The gardening that I used to do in a day takes me about a week now! (Margaret, 69)

The physical decline [with age] has been marked.. It wasn't gradual at all, it was just like fumbly.. Feel fumbly, uncoordinated, the eyesight.. All of a sudden I thought "Where the hell did that come from?" (Heidi, 51)

I feel like I'm 90. I don't trust my body anymore. (Penny, 49)

I think it's about never knowing whether it's just part of the normal ageing process or whether it's drug related.. am I meant to feel like this at my age or not? (Louise, 50)

Experience of available interventions

Women treated for breast cancer spoke about their experiences of available support for appearance concerns. While benefits of practical services such as 'Look Good, Feel Better' (providing practical support through make up tutorials) and 'HeadStrong' (offering guidance on how to wear scarves, hats, and headwear other than wigs) were recognised, there was a consensus among women that these forms of practical support exerted pressure to camouflage, and did not adequately alleviate their concerns.

They put make-up on me, I looked like I don't normally look and I came out and I thought "Who are you?" I got home, cried, wiped it all off.. Look bad, felt worse! I had a friend who said the people from 'HeadStrong' came up and

started tying scarves on her because she had no hair.. basically they were like “Pop something on your head.” (Liz, 44)

There was unanimous agreement that little exists in terms of psychological support for appearance concerns. Further, women did not feel their body image issues were addressed in support groups they had attended.

The only thing available at the moment is a big bag of make-up and how to put it on. (Jackie, 44)

The support groups I did go to were more interested in “Well you’re alive - doesn’t matter that your hair fell out, doesn’t matter that you’ve lost your breasts.” To me it did. (Laura, 44)

6.3.2 Content topics

Introduction

Both women treated for breast cancer and health professionals believed that the introduction in the manual was not sufficiently convincing about why women should participate in the intervention. They recommended greater emphasis on expectations and benefits of attending, including the provision of quotations and testimonials from previous programme attendees to facilitate relatability.

You basically need to sell it. “Hey – this is going to make you feel a bit better about yourself..”. I thought it would be good.. when you’ve done your pilot.. to have somebody say “I started out thinking this isn’t for me, however at the end of it I now feel blah, blah”. (Liz, 44)

I like the section where you’re saying “Is this for you?” so it’s really spelled out exactly what it is that you think will make it difficult or easy. You could perhaps put more in there about other people finding it helpful to talk to those who’ve had exactly the same experience. (Julia, Clinical Psychologist)

The last paragraph of the introduction (p. 11) entitled ‘Good Luck and Enjoy the Programme’ was liked for its personalising nature, and the way it acknowledged that challenges may arise throughout the course of the intervention. Health professionals recommended that the intervention should emphasise that there is no expectation that

recipients should love their bodies by the end of it. Rather, they should accept them more willingly.

I really like that. This might be a challenge for you, you might have worries about it.. still do it, give it a go. (Liz, 44)

It talks about feeling good about your body, and sometimes that alienates people we see because they don't think it's possible. And so I often talk about living with the body so it interferes less, rather than "I'm going to make you feel good about it" (Emily, Clinical Psychologist)

The development and impact of body image concerns

Generally, both women who have had breast cancer and health professionals recognised the importance of including theoretical information regarding sources of appearance dissatisfaction to aid understanding of why women experience these concerns and to normalise this experience.

That's great, because it's quite in-depth.. it'll reinforce people.. and think "Ok, that's great, I'm understanding now why I'm feeling that way" (Sarah, Consultant Nurse)

While women treated for breast cancer could identify with the isolated quotation illustrating the impact of appearance dissatisfaction ("*I can't stand looking at myself in the mirror. When I do look I am disgusted and revolted by what I see. My partner says I have nothing to be worried about, but sometimes I think he is just trying to be nice. Compliments about my appearance don't make any difference to me. I just can't stand my body anymore and wish it didn't belong to me.*" p. 17), they felt the subsequent paragraphs concerning additional adverse effects of body image concerns were too extreme and not representative of their experiences. The use of more realistic examples was recommended, particularly those relating to treatment-related appearance changes.

It's part of the picture, but it's not of paramount importance.. actually what you're thinking about is "Am I going to be here in a year's time?" (Christine, 54)

Simplify that with something like “You may not be able to wear the clothes you used to wear. You may think you look a lot different but other people probably won’t notice.” (Jackie, 44)

Both focus group participants and health professionals recommended adding material which normalises appearance concerns, including feelings of abnormality due to treatment-related appearance changes.

It is normal to feel different when you’ve got one boob. I think that really does need hammering home - that it’s ok to feel like that.. (Liz, 44)

The thing that would be quite strong is the validity..It’s that being able to see that there are lots of other women.. feeling crap about themselves because they’ve put on weight – or they’ve got scars they can’t even look at or touch..(Cheryl, Consultant Nurse)

Body image and wellbeing

There was consensus between women treated for breast cancer and health professionals that the avoidance of anxiety-provoking situations (p. 30; e.g. beach holidays) reflected their experiences. However, they also recommended the acknowledgment of disengagement with activities due to treatment-related physical limitations.

With my patients - they’re avoiding things - avoiding close contact, avoiding going to the swimming baths.. (Sarah, Consultant Nurse)

It’s more what I CAN’T do.. because I’m so weak and I’ve got all cut through muscles.. (Laura, 44)

Historical perspectives on the sociocultural ideal

Both women treated for breast cancer and health professionals found it beneficial to reflect upon changing societal appearance ideals across time. However, health professionals recommended shortening the length of this material, in the light of their own experience.

Back in the 80’s.. everybody had all the big hair (Penny, 49)

There was quite a lot about that in there, and probably more than I would normally talk about with people, which might mean that I need to talk about it more.. (Anna, Clinical Psychologist)

The material prompted a discussion of how it might be valuable to highlight the differences between countries and cultures with regard to their current appearance ideals, so as to emphasise the absence of one universal appearance ideal.

I think the current cultures would have a bigger impact.. because people can easily think “That’s past.. that’s not how we’re judged now” (Theresa, 57)

In Brazil they really value their bum and legs.. women who look really powerful (Louise, 50)

Media portrayal of the youthful thin ideal

Both women treated for breast cancer and health professionals recognised media pressure on women to conform to the youthful thin ideal, and the insinuation that the purchase of their advertised products, or changing their appearance, would lead to greater success and happiness in life. Participants acknowledged the power of this pressure, despite being aware that media images are digitally altered.

For women to be able to read that and identify with it and why they feel the pressure, is really, really important. It makes it valid. (Cheryl, Consultant Nurse)

We all know it don’t we? But I suppose there’s that little bit that if we buy into it, it might make us a bit more happier. It’s bad but I suppose it’s ingrained in us. (Laura, 44)

On an intellectual level you know that everything’s being manipulated, but.. well it doesn’t stop me from feeling insecure. (Ruth, 44)

However, it was highlighted that women may actually wish to gain weight following cancer treatment, and the programme might consequently benefit from an initial discussion of what individuals perceive to be representative of their own beauty ideals. There was unanimous belief that thinness and weight were too heavily focussed upon within the material, as there were other aspects of appearance which were just as

important, and the inclusion of a wide range of treatment-related changes was recommended in order to better represent their experiences.

I can't put on weight. I'd rather be like I used to be, curvy and able to breast-feed my child. So you've got to make sure that people.. let them set their.. and make sure we're not always defaulting to the fact that everybody wants to be young and skinny. (Jess, 37)

It might be useful to kind of bring in a few other issues that come up specifically for women who've had breast cancer. (Anna, Clinical Psychologist)

Additionally, a health professional recommended addressing how parents can influence an individual's body image from a young age, and how these effects can last into adulthood.

How our mothers or fathers talked about their appearance and our appearance as we were growing up can be quite important. If they were constantly self-critical or if they made comments about parts of our body.. (Anna, Clinical Psychologist)

Positive media messages

Women treated for breast cancer valued the material highlighting the importance of positive media messages, and suggested adding photos of other positive role models in the media who may not have had breast cancer, but do not conform to the youthful thin ideal or feel pressurised to do so.

Serena Williams gets picked on for her size and look how fit she is.. she said "I'm proud of my body because it allows me to win these tennis championships and to be successful". (Pam, 56)

Was it Kate Winslet that said she didn't want any more of her photos airbrushed? She's got a great figure – she's not stick thin, she's curvy. (Penny, 49)

There was also discussion of women in the media who may appear to meet the youthful thin ideal, but have received a diagnosis of breast cancer. Their inclusion in the material was recommended.

And when I told my son (about Kylie) she'd just done her first interview, and in fact she'd just done her first concert, so I said to James.. "This is but look at Kylie Minogue now – she's great".. So no matter how you look, how rich you are... (Amanda, 48)

Anastasia – she's had it twice. (Laura, 44)

Body comparisons

Women treated for breast cancer were able to relate to the negative impact of appearance comparisons with others who have undergone treatment and with those who have not.

One of the things Gok Wan [a UK celebrity who hosted a television show making over women's clothes and styles] used to do.. Get a line of different people of different sizes.. And put yourself where you think you are, and invariably they would put themselves bigger than what they actually were. (Penny, 49)

A charity did a campaign didn't they a while ago, where women were being photographed as models with their mastectomy scars and.. I've had two lots of surgery and so my scar isn't pretty at all and I then compared myself against.. so I did stack myself up against them and say "Oh, their scar's nice". (Pauline, 55)

Task 4.4, whereby women had to compare their habitual comparisons with purposeful comparisons, was recognised in focus groups as a useful task for highlighting the theories of body comparison. The addition of photos of women with, and without, breast cancer, of varying appearances, would be effective in demonstrating how different everybody looks.

It was really helpful looking at it.. because you saw different waists, different sizes, shapes.. and it was just like "None of these bodies are the same so how on earth can I have one ideal?". Photos of other people. You just want to see what other people look like.. because you don't see many other naked women, you don't. (Jess, 37)

I think that would be really good – images. Having normal women all different shapes and sizes.. having scars, mastectomies, and other stuff. (Amanda, 48)

Ageing and treatment related appearance changes to appearance

While women treated for breast cancer found the material addressing ageing- and treatment- related appearance changes relevant, they recommended greater clarity with regard to whether Task 6.1, which considered appearance changes since adulthood, was concerned with ageing or cancer treatment.

I took it as ageing. Although.. I don't think you can take one without the other and so I think I'm probably looking at both because the grey hair, I would've got that anyway, but body change, weight gain – I think that's the medication and the cancer. (Jackie, 44)

As previously observed (under 'Relevance of the Issue'), changes in physical function due to ageing and treatment are a prominent issue which also impacts upon body image and which women felt should be addressed. Further, the women and health professionals alike indicated greater attention towards the impact of menopause (both naturally- and medically- induced) on body image and wellbeing.

You can still talk about menopausal symptoms.. it makes you feel quite bad about yourself because it's changed who you are. You don't feel young, you feel older because you're having all these changes in your body that you shouldn't be having.. (Liz, 44)

You're trying to conform to the norm.. and even at the menopause, the pressure that that brings. It's raising the subject and making it part of everyday conversation and making it valid, normal. (Cheryl, Consultant Nurse)

Relationships and body image

Women treated for breast cancer and health professionals unanimously agreed that addressing the impact of appearance concerns on relationships was essential. However, they prioritised treatment-related appearance changes over ageing-related appearance changes. Protecting others and relationships with regard to a change in appearance was relevant (pp. 59-60), but the importance of this in the context of adjusting to the diagnosis could not be ignored and should be acknowledged. Clear communication and understanding between the individual and family members was also seen as crucial in protecting relationships (pp. 58-59).

Sums up in a page and a half what it took me four months of seeing the psychologist to work out - that I've got to know what I want before I start expecting other people to know what I want. (Ruth, 44)

Felt so guilty for my Dad you know? How must he have felt.. But it's nothing he could do. (Amanda, 48)

My son was 9 at the time. He'd always known me with long, blonde hair. So I had to show him and he just looked at me.. I still don't know what he was thinking. (Sharon, 47)

The pressure to disguise aspects of appearance to make others feel more comfortable was registered by the women who had undergone treatment, and warranted acknowledgment in the material.

We had a wedding so it was like "Nick [my husband], please, just put these eyelashes on" but by the time I got home, I was ready to rip them off. (Penny, 49)

I open the door to the postman in my dressing gown and I think "Oh, I haven't got my prosthesis on" and I do feel embarrassed. (Sheila, 58)

While women treated for breast cancer felt the issue of self-disclosure in relation to their body image concerns was relevant (p. 61), they recommended providing guidance for answering questions from others about their appearance, and to emphasise that people might look or stare out of curiosity, rather than disgust.

It is about preparing somebody.. in a public place.. how I can lead into that conversation without cringing or falling to pieces. (Sue, 62)

If I see a lady with really, really cropped hair, I look and think "Oh, I wonder if you've been through that." But I'm not looking thinking "Oh God, look at you." (Jackie, 44)

I don't have a family so it's quite hard to pitch my answer to children.. (Sheila, 58)

Self-disclosure in relation to treatment-related appearance changes was highlighted as a particularly important issue when dating and meeting new partners. Women treated for breast cancer and health professionals recommended including discussions about this.

At what point do you tell them you've had a mastectomy, you've got scars, you've got one boob, you've got no boobs? That's really tricky, really difficult.
(Liz, 44)

I think everyone who's been single has asked me "How do I disclose it? When do I disclose it?" (Julia, Clinical Psychologist)

The women and health professionals commented on the relevance of material relating to the adverse impact of treatment-related body and appearance changes upon intimacy with their partners. As a topic commonly avoided in conversation with partners, friends, and health professionals, it was recommended that this be addressed earlier on in the intervention, and that relatability and discussion be facilitated by including a list of common issues related to intimacy.

I always used to say my husband avoided seeing me naked in the bedroom.. then I sort of thought about it - actually, no.. it's me. I'm rushing to get changed before he comes up the stairs (Pam, 56)

I slept with a bra on for 3 years. We didn't have sex for 3 years. (Jackie, 44)

It would be quite helpful to have a list of actual things that you could experience.. you could sort of know that you're not alone..(Jenny, 50)

The bit that was missing for me from this was more about the sex and intimate side of things. (Julia, Clinical Psychologist)

6.3.3 Therapeutic strategies

Feeling ready to change

Women treated for breast cancer felt it beneficial to reflect on how life would look if body image issues had less impact (p. 19). However, the second part of Task 1.2 which focussed on identifying 'Reasons not to change', was disliked, as they believed there would be no negatives associated with improving their body image. They therefore could not see the point of this section.

I want to accept the new me.. not wanting to change. (Christine, 54)

It's actually quite difficult to think of the reasons not to change. But you almost don't need to spell that out to people. Just get them to – “here's why you're going to do it, list why you're going to do it.” (Liz, 44)

Group Task 1.A, where group members were required to imagine themselves in 5 to 10 years' time, and to compare how their lives would look if on one hand they still experienced body dissatisfaction, and on another hand they felt more positive about their body, was considered an extremely daunting prospect by women who had undergone treatment for breast cancer. This view was associated with fear of the disease returning in the future, and prevented individuals from picturing themselves so many years later. In contrast, Task 1.3 ('Plans for Change') was seen as beneficial, as it required reflection on the reasons for making positive changes to body image.

(Group Task 1.A) Completely overwhelming.. that's the reality of anyone with cancer - 5 to 10 years just feels fantasy in some cases. (Jess, 37)

(Task 1.3) I think that's useful. I said “I want to be able to dress and undress without covering up and being self-conscious”. And the most important reason for making these changes: “Improve the relationship with my partner and stop him worrying about me”. (Christine, 54)

Cognitive Behaviour Therapy (CBT) approach

Generally, women treated for breast cancer recognised the value of the underlying CBT approach, but also felt intimidated by the word “therapy” and its connotations. They recommended simpler explanations of the techniques, and emphasised the need for a great deal of support from facilitators to help them understand and employ the different techniques.

It's good, it's powerful stuff. (Sue, 62)

I definitely think it needs some facilitation. It's very difficult to do at home on your own. (Debbie, 49)

That all needs rewriting. Far simpler. I don't know that I'd even say it was CBT. I would just say it's an approach. (Liz, 44)

The first isolated example illustrating the concept of CBT was considered inappropriate by women treated for breast cancer (“*It feels like every single second of my life is dominated by thoughts about how much I dislike my body. When I shower at the gym, I struggle with anxious thoughts about everyone staring at my chest. I feel self-conscious and embarrassed and so I wait to shower when I get home.*” p. 27), as the interpretation of the event and the associated emotions that was used to illustrate maladaptive thinking was considered to be completely accurate, realistic, and certainly rational. A more realistic example was suggested to illustrate a possible misinterpretation of an event and irrational thinking.

I cancelled my gym membership.. a child said “Look, that lady’s got no nipple” and I was mortified. (Laura, 44)

I don’t like the example.. because that is an entirely reasonable way to feel. Of course people are going to stare at you in the shower if you’ve only got one breast. It doesn’t matter how body confident I am. I’ve stopped swimming because I’m convinced that everybody can tell that I’ve got a falsey in.. when rationally I know once I’ve got my cossie on and my swimming boob in, you really can’t see. But I still won’t go swimming. So, to me, that’s a more authentic reason to change your behaviour. (Ruth, 44)

The women could relate to negative self-talk and the examples (p. 42), but recommended the use of a flow chart to visually illustrate the connection between negative self-talk, associated feelings, and reactions. They could also relate to “thinking traits” (pp. 43-45), but they recommended a clearer explanation to improve clarity and participant understanding.

I thought “I don’t do self-talking” and then I was thinking “Oh, I do do it.. all the time.” I didn’t recognise the phrase ‘Self-talk’ because I think that’s going on all the time. Maybe an explanation on what traits are.. Because I am visual, I might like a flow chart thing, like..you do this and that happens. (Amanda, 48)

I get moments of.. especially all or nothing , about my diet and things. (Jess, 37)

The benefit of finding strategies to stop negative thinking (p. 47) and to replace these with alternative balanced thinking (pp. 48-50) was recognised across focus groups. The women were able to relate to the examples, and thought Task 3.2 (p. 50) might benefit

from extending the strategy beyond ‘Now I feel’ to considering the positive impact of generating the alternative balanced thought and the subsequent emotion. Focus group participants suggested conducting cognitive restructuring (pp. 76-82) as a group activity to cultivate more ideas.

My balanced thought is “My partner loves me beyond my appearance”, which is true - “like I love him beyond his” which is true, because he’s a bit fat. So it works both ways doesn’t it? (Heidi, 51)

(Task 3.2)..maybe a question like “Where else is that going to impact?” There’s an outcome at the end of it. (Amanda, 48)

(Cognitive Restructuring) This is a good one to do as a group because other people would see things and come up with different things. (Jenny, 50)

Women treated for breast cancer could recognise the value of Task 6.2 (p. 93), which focussed on the identification of mistaken core beliefs. Task 6.3 (p. 96), which subsequently required the use of cognitive restructuring to examine mistaken beliefs, was also perceived as helpful. Nevertheless, simplification of terms and explanations was recommended to improve participant understanding of the concepts.

I felt.. in order to realise what your core beliefs are.. could probably take months of therapy. I think it needs to be explained in a better way. (Sheila, 58)

(Task 6.3) What have I written down? “Lots of ways to be valuable to be a good kind person. There’s more to you than what’s on the outside. What advantages does the belief provide? Helps you to be positive about your appearance.. No-one looks good all the time”. I did think of a good example that I’ve done myself lately (Charlotte, 52)

In view of the large body of evidence for the effective use of CBT to alleviate body image concerns, this underlying approach to the programme should be retained. However, it should be acknowledged that two of the clinical psychologists generally preferred to use third wave approaches and systematic psychotherapy as opposed to CBT in their own clinical practice with this group of women. Nevertheless, they stressed that no approach is superior to others, and that CBT has a strong evidence-base.

Third Wave and systemic psychotherapy because a lot of work I do is also around couple work. (Emily, Clinical Psychologist)

What I offer is ACT.. more so than more traditional CBT. But as a service we have clinicians who provide CBT, EMDI - so a range of different approaches. It's not that one's better than another, they're just different ways of doing it, and there's much more research been done about CBT than there has been about ACT. And CBT is an approach that lots and lots of people have found helpful. (Anna, Clinical Psychologist)

Self-care

Women treated for breast cancer found it beneficial to be introduced to the concept of self-care and self-value early in the programme. Task 2.3 (p. 28) and Task 3.3 (p. 51) which required participants to identify and schedule self-care activities in the week were perceived as helpful (p. 51).

You're not taking the whole day – just a snatch. And that snatch then becomes a little bit bigger because you learn – actually the world's not going to fall apart. (Sue, 62)

Signing a self-care commitment certificate in Task 2.A (p. 37) was seen as beneficial by both the women and the health professionals. It was suggested that this or an alternative certificate should be given to group members upon completion of the programme.

Do you know what we did on my 'Moving On' course? We signed something similar to this and then it got posted out to us afterwards and it was lovely. (Ruth, 44)

It almost shows and confirms to them that they've worked quite hard and look, it's made a difference – and they sort of feel quite proud of that. (Sarah, Consultant Nurse)

There was discussion regarding reappraisal of life following a diagnosis of breast cancer. The inclusion of related examples was recommended, in order to encourage women to make more time for themselves.

I don't care as much about what people think about me now. I don't do as much housework anymore, because it's not that important. (Jackie, 44)

Whether it be cancer or whatever, but something in life that's life-changing that makes you face your mortality, can make you reassess and prioritise. And I do. I do stop and smell the roses now. (Christine, 54)

Self-nurture and body acceptance

The tips for generating nurturing self-statements (p. 86) and affirmations (p. 101) were considered helpful, and women treated for breast cancer were able to generate some of their own.

I've always had quite big thighs but now I really need them to do the cycling classes and that makes me feel really powerful now. I don't want to be a size 8 or whatever. I want to feel strong. (Louise, 50)

If you've been through childbirth, that changes your perspective of your body.. you've got wrinkles on your tummy, but that's a real gain.. it's because you've had your baby, so I really like that. (Jess, 37)

While the women could see the benefits of mirror exposure in Task 5.3 (p. 87), it was simultaneously perceived as challenging and daunting, particularly immediately after treatment when women encountered difficulty even touching their breasts.

It helps you to focus on other parts of your body as well and decide that, actually yes, I've got one less boob but I've got a nice bottom or whatever. (Pauline, 55)

I couldn't have done that, I couldn't even wash myself, I couldn't even touch myself. (Laura, 44)

The prospect of having to complete the task all in one go was unanimously regarded as overwhelming. It was consequently recommended that it should be introduced earlier and broken down into stages between sessions, perhaps beginning with touching or looking in a small mirror (like gradual exposure therapy). Health professionals also emphasised the importance of acknowledging that while this might be anxiety provoking at first, the anxiety during mirror exposure would gradually ease.

I found in the shower.. I had one of those puff things and put body wash onto that.. so I wasn't actually touching it to start off with. That was how I got round that.. It definitely helps to touch. (Sharon, 47)

I do stages of desensitisation.. if they won't look at their scar, then we work out strategies of how they can do that – looking in a hand mirror, then looking in the big mirror, then looking in the full length. (Sarah, Consultant Nurse)

Sensuality

Both women treated for breast cancer and health professionals found it difficult to distinguish between sensuality and sexuality within the material. As difficulties with sensory experiences can be problematic after treatment, this could be confused with sensuality referring to intimacy. Importance was therefore placed on acknowledging that treatment side-effects can compromise sensuality-and on making it clear that the material concerning sensuality is unrelated to sexuality. Further, the current appearance-related examples of sensuality were perceived as inappropriate (p. 97).

To me, sensuality is linked with sex.. Call it something like 'Engaging your Senses' or 'Exploring your Senses' rather than sensuality, because that means too many different things.. I'd start off with "Sensuality means dah dah dah... and having had cancer can affect your sensuality in lots of different ways." (Jackie, 44)

So when I read that I just thought.. my big issue for my body is not being able to get bras that fit me properly and look decent. (Liz, 44)

Sensuality is about connecting with your body in a way where you feel good about it and you experience your body as competent and ok. So wearing lipstick is not about connecting with your body, it's about connecting with your appearance, and wearing underwear is, again, about connecting with your appearance, not your body. (Emily, Clinical Psychologist)

Nevertheless, the prospect of engaging with different senses (e.g. smell) was perceived as beneficial, and alternative examples were recommended. The discussion of sensuality also led to the consideration of mindfulness, and how the two tasks could be combined.

The task just needs to be something like “go outside – what can you smell? What can you see?” Having a spa, having your nails done, wearing fabrics against your body that feel really nice. (Jackie, 44)

We overlook things too.. like the other senses, like smell. If you can have really lovely scented body lotion, then rubbing that in and then there’s that nice smell and then you smell feminine. (Julia, Clinical Psychologist)

Physical activity

While the importance of physical activity was unanimously recognised and the practice of goal setting to facilitate progress considered helpful, the current examples were considered unrealistic due to common treatment-related physical restrictions, e.g. fatigue. More relatable examples and the emphasis of other benefits associated with physical activity were proposed.

Depending on how physically able you are, you could be at danger of making people feel really guilty about themselves. So you’ve got to highlight “Even if it’s just a walk”. (Amanda, 48)

Doing this in small groups, it’s actually peer pressure. Or make arrangements to go and meet a friend in a café. (Jenny, 50)

A lot of people who have breast cancer are really deficient in Vitamin D, and you get out in the sunlight and just get the kind of energy from being outside. That’s been transformative for me. (Louise, 50)

“Sitting” with anxiety and relaxation

The tips for “sitting” with anxiety were perceived as helpful (p. 29). Health professionals emphasised that group members would need extra support and would benefit from additional psycho-education relating to anxiety, but the importance and benefits of relaxation training were recognised unanimously (p. 35).

‘Sitting with Anxiety’, page 29. People aren’t going to be able to do it just because of this page. It’s a very alien concept to tolerate the human condition as good and bad. I wonder whether it might be useful to help them practise

something with a positive feeling or a neutral feeling first. (Emily, Clinical Psychologist)

It's really important. I have done yoga years before so I knew about the breathing.. So on the top of the relaxation.. that is definitely helpful. (Sue, 62)

Preventing setbacks and future challenges

The strategies provided for avoiding and dealing with setbacks (pp. 103-107) were perceived as helpful by the women who had undergone treatment. However, the subtitle 'Preventing Setbacks' was disliked by several women, who felt it was unrealistic to expect no setbacks in the future. The use of an alternative title which recognised that setbacks may occur, but can be overcome, was therefore recommended.

I came out of my psychology sessions feeling like Wonder Woman and ready to take on the world, and within a fortnight it was like.. "right, sit down, think it through".. you have to give yourself a talking to every now and then. (Ruth, 44)

When I first saw 'Preventing Setbacks' I thought.. is that asking the impossible? Now when you read the narrative, straightaway it says don't panic or feel overly concerned. Maybe 'Dealing with Setbacks' or something like that? (Theresa, 57)

6.3.4 Format and materials

Mode and delivery

While women treated for breast cancer highlighted the daunting prospect of attending a group, they recognised the benefit of this format. The use of strict attendance rules was recommended unanimously in order to enhance disclosure and rapport.

We just want to be able to meet people that we know have been through or are going through the same sort of thing as us. And that is completely the best bit for me out of all of this, being able to talk to people that get it. (Katherine, 48)

It does affect how freely you can speak in a group when you're sitting there with people that you don't know because they haven't turned up for half of them. (Jess, 37)

I do think that there has to be maybe a minimum that they come for. It's no good coming to one because it's time-consuming and I think it would be no benefit. (Sarah, Consultant Nurse)

The length and number of sessions was considered appropriate across the focus groups and interviews. The importance of allowing women to discuss their cancer experience generally in the first session was emphasised, in addition to that of providing a follow-up session in relation to body image specifically.

You kind of do need that free session to start with where people do get a chance, if they want.. some people won't want to share, won't be ready – but some people will want the opportunity. And for everyone to know that there is a follow-up session, so they know it doesn't just end on that day, that down the line there's something else.. (Jess, 37)

The nice thing about having a course that runs over a few weeks rather than just 2 days of intensive... is just that I think women often come being quite ambivalent, but it's been only by session 3 or 4 that they've started to really relax and get a feel for the other women in the group and then really open up. (Anna, Clinical Psychologist)

With regard to facilitators, two was considered an adequate number by all participants, ideally a peer and a health professional. While a breast cancer nurse was considered suitable by many, a psychologist was often preferred in view of their specialist therapeutic knowledge.

I think you need volunteers there who've had the experience, but you need a psychologist there to facilitate the group. I don't think a volunteer, even with the experience of breast cancer, could necessarily deal with all the issues that could come out of a group. (Christine, 54)

Some of the specialist nurses have a lot of skills, but it's rare that they really have a lot of grounding in CBT unless they've done additional training. (Anna, Clinical Psychologist)

Health professionals believed 8 to 12 women participating in the group was an appropriate number.

My sense is around 10. You don't want too small a group because the aim is that actually they do the work and you're kind of facilitating learning through discussion and exercises. So if you've got 8-12, I think that's a really nice sized group. The problem with it getting bigger is some people might feel less open to disclosing. (Anna, Clinical Psychologist)

There was overwhelming agreement that group members should receive the materials session-by-session, as opposed to all in one go at the beginning. Additionally, while between-session tasks were considered beneficial, women treated for breast cancer recommended fewer tasks.

I think it would be quite daunting to get presented with it all at once as well.. you could drip feed rather than bombard somebody. (Ruth, 44)

As much as I think it's really good to have a space between sessions.. it's a really good idea to keep provoking the mind to sort of wake up and think about things a little bit more. (Heidi, 51)

Would the homework feel overwhelming? I think it might.. so I would only give them one task, I wouldn't give them three. (Liz, 44)

It was stressed by health professionals that group members would require substantial support from facilitators to prepare for between-session tasks. Consequently, they recommended no tasks to complete before the first session. The importance of goal setting and reviewing members' progress throughout the intervention so as to retain motivation and maintain progress was also emphasised.

There just isn't the scaffold for them to be able to do the exercises potentially.. if I think about the people I meet, if I gave them the exercise sheets and sent them away.. it may be better to think about they don't prepare for the first session, but the preparation is applying what you've learnt in the group session for the next week. (Emily, Clinical Psychologist)

I think.. kind of really encouraging from the word go that actually these are things that people can work on themselves. If you're going to encourage people to set goals, I think it's really important that at the beginning of the next session

we review them.. that there's a chance for the group to be able to support them in problem solving. (Anna, Clinical Psychologist)

Target population

While both women treated for breast cancer and health professionals believed the intervention to be of benefit at any stage of treatment, it was acknowledged that body image may not be at the forefront of women's concerns during active treatment. In fact, it was unanimously believed that the greatest support may be needed at the end of active treatment, when women have to learn to accept their altered appearance.

Well it's dealing with what's going on at the time, so dealing with treatment - that needs to be done, and then there's thinking time and that's when many people collapse after treatment, mentally. So it's that kind of time where you're thinking about what's lost, what's gone and how to be now. And so it would fit in well with that moving forward time. (Cheryl, Consultant Nurse)

Materials

The tone of the material was described as 'clinical' and 'academic' by women treated for breast cancer. The way in which the material was written was also described as 'removed'. Julia, one of the health professionals, recommended a lighter tone.

It does feel very clinical and we're very used to 'clinical' throughout the whole process.. I would want it to be very supportive and very open rather than processed, clinically, driven. The other thing.. It feels quite removed, the way it's written: "Women's bodies are not static entities. As a woman grows, her body develops changes in many ways." (Katherine, 48)

In running these things and talking about it, one of the things is it is so serious and it is.. but actually, it can also be quite light-hearted. Keeping it light is important because the more people can slightly laugh at themselves the easier it becomes. (Julia, Clinical Psychologist)

The general recommendation from both the women and health professionals was to make the language more accessible, and to change theoretical terms to more familiar words. Additionally, focus group participants disliked the terms adopted to describe breast

cancer-related information, and recommended the use of different descriptions to increase relatability.

I would say that the language might not be that accessible to people with.. perhaps less than an A-level level of education.. I think the document needs going through and the language simplifying. (Debbie, 49)

“Breast surgery comprises of partial to complete loss of one or both breasts”. I’m not sure people who’ve had a lumpectomy will see that they’ve had a partial loss of a breast. (Liz, 44)

As somebody who writes patient information a lot, it is a very, very complex read.. it would need to be made in a much simpler form. (Cheryl, Consultant Nurse)

There was unanimous agreement that the large quantity of text in the manual, unrelieved by the use of pictures, was off-putting. In terms of the manual design, a small ring-binder was recommended, allowing material to be added.

Too much writing, definitely. You almost need a chunk of information and then maybe a mini thought or activity or a quote.. (Jackie, 44)

I think just having it without not too much writing and mixing it up with diagrams and drawings. (Anna, Clinical Psychologist)

Maybe A5.. maybe booklets that have got holes in so you can put it into a ring-binder for each time. (Pam, 56)

6.3.5 Overall perceptions of the effectiveness of the intervention

Perceptions of women treated for breast cancer

Firstly, women treated for breast cancer described reading the manual and participating in the focus group as a beneficial experience with regard to their own body image.

I enjoyed reading it. (Pauline, 55)

This whole thing’s made me think.. I’m now up and about and doing stuff, it’s not really talked about. It’s like “Well Penny’s back to normal now” and “Oh

*you look really well”, as I said earlier.. I’m definitely not back to normal.
(Penny, 49)*

Importantly, they believed the intervention showed promise in its potential to improve women’s body image following treatment for breast cancer.

Whatever format this goes into this will be amazing, it will work. It will take time to sort.. and you’ll have hiccups with it, but I think it will be one of the best things that could be out there. (Christine, 54)

I would like to come along to a group when it’s finished. (Debbie, 49)

Perceptions of health professionals

Similarly, health professionals unanimously felt that with appropriate amendments, primarily a greater focus on treatment-related issues, the intervention could help women to feel better about their bodies. They believed greater support was needed in this area.

I thought it was an excellent intervention and I think it hits all the right things. I think it’s well overdue - a body image intervention. (Sarah, Consultant Nurse)

There is so little out there for people with appearance issues in this group. I think having a group like this will be a huge source of support to lots and lots of women. (Anna, Clinical Psychologist)

It was also said that women treated for breast cancer were keen to attend groups, which would be favoured given their greater financial viability than individual sessions.

Groups are under-used in the NHS and in the future it’s what we will have to do as psychologists because of funding pressures, and I really feel like people will like it. (Emily, Clinical Psychologist)

6.4 Discussion

Both women treated for breast cancer and health professionals highlighted body dissatisfaction as an issue warranting attention through psychological support. The proposed intervention was considered to be acceptable pending some amendments. Indeed, the women were able to relate to content material and examples, and the

therapeutic strategies were perceived as helpful by both groups of participants. The intervention was believed to show promise concerning its ability to improve women's body image following treatment for breast cancer, but amendments were suggested to improve its potential (see Appendix 24 for a summary). This discussion interprets the most salient findings in the light of current knowledge and theory, and reflects upon their implications for intervention development, while additionally addressing the strengths and limitations of the study.

6.4.1 Relevance of the issue and experience of available interventions

The recognition among both women treated for breast cancer and health professionals alike that body image issues arise during and following treatment reflects previous research on this topic reviewed in Chapter 1 (see also Helms et al., 2008 for a review). Women spoke about the persistence of these concerns for years following recovery, often unnoticed by friends and family members, who assumed they were fine since the cancer diagnosis and treatment were issues of the past. This reflects previous findings suggesting that having to return to everyday life and to meet the expectations of others in order to regain normality can cause distress among women (Knobf, 2007), particularly when concerns regarding treatment-related appearance and bodily changes are still lingering (Falk Dahl et al., 2010; Parker et al., 2007). Additionally, the pressure to return to normality may partly explain why women indicated they avoided addressing their body image concerns until they participated in the study, pushing them to the back of their minds instead. Further research examining the barriers that prevent women from addressing their body image issues following recovery would be beneficial.

Nevertheless, collectively these findings emphasise the importance of the 'National Cancer Survivorship Initiative' (Department of Health et al., 2010) and the 'Living With and Beyond Cancer' programme (Department of Health et al., 2013), which aim to examine and address the residual consequences of cancer diagnosis and treatment (e.g. physical functional consequences such as pain and lymphedema, psychological consequences such as fear of recurrence and body image concerns). These findings have implications for health professionals, which will be discussed later (7.3.1). They also suggest that women's relationships and comfort levels might be improved if family members and friends were made aware that concerns related to body image and other matters associated with diagnosis or treatment can persist following recovery. They

should consequently be careful not to pressurise their loved one to make a complete return to normality, and should be prepared to offer support. Finally, these findings further suggest the importance of developing and disseminating effective evidence-based interventions to address body image concerns after treatment for breast cancer and the importance of the current thesis.

Indeed, participants expressed the view that there is a need for the provision of psychological interventions targeting body dissatisfaction, and thus supported findings from Study Two (Chapter 4). While the women identified practical benefits in currently available interventions which employ camouflage techniques (e.g. ‘Look Good, Feel Better’, ‘HeadStrong’), they felt they were not appropriate for everyone and may actually promote camouflage as opposed to acceptance of appearance. These findings support the limited evaluative research into these behavioural interventions (Pilkington et al., 2014; Taggart et al., 2009), which together suggest that they are unlikely to address the psychosocial needs of all women treated for breast cancer. Alternatively, psychological interventions that facilitate appearance and bodily acceptance, such as ‘Set Your Body Free’, might be more beneficial in the short- and long-term, by emphasising self-worth beyond appearance, and accommodating concerns at different stages of the treatment and recovery trajectory.

6.4.2 Content topics

Turning now to perceptions concerning the proposed intervention itself, the need to expand beyond weight-focussed aspects of body dissatisfaction was stated. Specifically, participants reported the importance of addressing the adverse consequences of treatment and ageing upon physical function and capabilities. Indeed, the women spoke about the change of their identity to that of an ill person, and the distrust felt by them towards their body. These findings mirrored previous research, which found poor body image to be associated with treatment-related bodily changes (e.g. fatigue, pain; Brunet, Sabiston, & Burke, 2013; Fobair et al., 2006) and ageing-related ones (e.g. menopause, reduced mobility; Deeks & McCabe, 2001; Hofmeier et al., 2016). Given the origin of the intervention as an eating disorder and body dissatisfaction prevention programme, the omission of material addressing the influence of ageing or breast cancer treatment on physical function is unsurprising and perhaps justified.

However, Study One's systematic review (Chapter 3) identified two effective interventions which provided information and support to women undergoing breast surgery and within which effects upon function were also addressed (Hsu et al., 2010; Salonen et al., 2009). Unfortunately, these interventions were only effective at post-test or follow-up, and may not be applicable to women who have finished active treatment. Nevertheless, they would be worth consulting when modifying the proposed intervention so as to incorporate the physical functional aspect of body image to and better meet the needs of this group. Further, Breast Cancer Care's 'Moving Forward' course and resource pack, which provide information and support for adjusting to life following treatment, address functional changes such as menopausal symptoms, lymphedema, fatigue, and pain. Findings from a non-controlled evaluative study of the course showed improvements across several domains, including confidence and reassurance (Scanlon, McCoy, & Jupp, 2013). This course therefore warrants examination focussed upon the material that addresses concerns associated with physical functional changes.

An additional topic which was felt in need of greater attention within the intervention was the impact of body dissatisfaction upon relationships and intimacy. Women treated for breast cancer stressed that treatment-related appearance changes, principally in relation to breast changes, had a worse impact than ageing-related appearance changes. Indeed, the women spoke about hiding their bodies from partners and the decreased frequency of sex since diagnosis and treatment. These findings supported previous research which has recognised the adverse effects of breast cancer treatment upon sexual function, sexual interest, and feelings of intimacy, often due to worsening body image, perceived loss of femininity, and difficulty accepting one's body following treatment (Fobair et al., 2006; Pelusi, 2006; Sheppard & Ely, 2008).

Participants also discussed how intimacy was a topic often avoided in conversation with partners, friends, and health professionals, thus mirroring previous findings indicating that health professionals do not raise intimacy issues and emphasising the importance of doing so (Fenlon et al., 2015). Indeed, psychosocial concerns are often not identified by health professionals nor expressed by patients (Bultz & Carlson, 2006), which highlights the importance of psychosocial needs assessments. The use of the Distress Thermometer and Problem List (National Comprehensive Cancer Network, 2012) during consultation may be useful to inform clinicians of intimacy issues, given its inclusion of 'dealing with

partner' and 'intimacy' on the list of potential problems. Patients can consequently indicate these as issues to be addressed without having to bring them up themselves.

The difficulty of disclosing information about their altered appearance was also raised by the women and health professionals, particularly in the case of women who are not in relationships and are anxious about meeting new intimate partners. This mirrored the findings of previous studies which identified apprehension among this subgroup with regard to revealing information concerning their diagnosis and treatment to a potential partner, and embarking upon intimate relationships (Kurowecki & Fergus, 2014; Shaw, Sherman, Fitness, & Australia, 2016). Women have reported anticipating rejection because of their altered bodies, and consequently encounter difficulties relating to when and how to disclose information (Kurowecki & Fergus, 2014; Shaw et al., 2016). An additional fear concerning meeting new partners is the potential impact of treatment on fertility and breastfeeding (Thewes et al., 2004).

Participants also felt it was important for the intervention to address the pressures associated with protecting others from experiencing anxiety because of their altered appearance; for example, by disguising aspects of appearance (e.g. wearing wigs to cover hair loss) in order to make family, friends, and even strangers feel comfortable. Indeed, this resonated with previous research which reported that women treated for breast cancer felt they must "educate" and "psychologically prepare" loved ones before presenting them with the altered aspects of their appearance (Rosman, 2004). Further, women in this study described feeling the need to always wear a wig in front of particular family members (e.g. young children, elderly relatives).

With regard to interventions that have been found to address these issues concerning relationships and intimacy effectively, review articles have described evaluative studies of interventions targeting sexual dysfunction among women treated for breast cancer (Dow & Kennedy, 2015) and for couples coping with breast cancer (Zimmermann, 2015). Additionally, Breast Cancer Care's 'Moving Forward' course and resource pack addresses changes to intimate relationships, including how to communicate with current and future partners. The promising early findings of this course have been highlighted previously (Fenlon et al., 2015). The examination of these interventions would be beneficial for expanding this topic within the proposed intervention, and thus ensuring

that all areas influenced by treatment-related body image concerns are adequately addressed.

The present study has novel findings on the relevance of societal appearance ideals for women treated for breast cancer. Participants recognised the pressure felt by the media to conform to the thin ideal, and acknowledged that despite awareness of the digital manipulation of media images, they still had the power to make them feel bad through appearance comparisons. These qualitative findings support the quantitative findings from Study Two (Chapter 4), which indicated that media pressure imposes both direct and indirect effects on body image, the latter through appearance comparisons. Further, these findings resonate with those of previous cross-sectional studies with women in midlife not treated for breast cancer, which identified correlational relationships between body dissatisfaction and media pressure to lose weight, internalisation of the thin ideal, and appearance comparisons (e.g. Green & Pritchard, 2003; Katz, 2005; Kozar & Damhorst, 2008). These findings therefore emphasise that the subgroup of these women treated for breast cancer are just as vulnerable to media pressure, internalisation of the thin ideal, and appearance comparisons.

Before the study presented in Chapter 4, there were no theoretical models conceptualising body image among women treated for breast cancer which accounted for the influence of these variables. Relatedly, none of the interventions targeting women treated for breast cancer identified in the systematic review (Chapter 3) addressed or targeted these sociocultural and psychological influences. Similarly, psychoeducational self-help material provided by Macmillan and Breast Cancer Care do not address these factors, while Breast Cancer Care's 'Moving Forward' course also does not account for the influence of the media on body image. Nevertheless, the current findings support the use of aspects of interventions developed to target body image more generally (which include media influence, internalisation, and comparisons in their content) among women treated for breast cancer. The implications of these findings for the field more broadly will be considered in the final chapter (Chapter Seven).

Interesting findings arose in relation to targets of comparison and appearance ideals. Firstly, in addition to comparing their appearances 'upwardly' to women in the media who represent the thin ideal, women treated for breast cancer also spoke about engaging in comparisons with others who had received treatment (e.g. through comparison of

scarring). This is a novel finding for the cancer and body image field, and supports the quantitative findings of Study Two (Chapter 4). These findings have implications for intervention development, suggesting that while the concept of upward appearance comparisons taken from “general population” body image interventions are applicable to women treated for breast cancer, targets of comparison are not always women who represent the thin-ideal, but can be others who have also undergone treatment.

Secondly, findings also revealed that the thin ideal may not be applicable to everyone as their beauty ideal. For example, sometimes weight gain may be a goal after treatment, as opposed to weight-loss and thinness which are a common goal in dominant appearance ideals for women. The implications of this finding for theory will be discussed in the final chapter (Chapter 7). Nevertheless, in the context of the proposed intervention, this emphasises the importance of group members discussing their own beauty ideals concerning appearance aspects beyond weight and shape so as to increase their relevance to both women treated for breast cancer, and the individuals themselves.

Finally, the recommendations from participants to include images of women both with, and without, a history of breast cancer, and both in, and out, of the media, may help to emphasise the diversity of appearance and consequently promote a more diverse and positive body image. This strategy has been employed in Breast Cancer Care’s body image campaign, which contains images of women showing their scarring after surgery. Such forms of positive and diverse media imaging are also recommended for mass and social media campaigns more broadly, given that greater diversity of appearance in television programmes, films, and advertisements has been argued to be beneficial to promoting positive body image among women (Diedrichs & Lee, 2010; Halliwell, Dittmar, & Howe, 2005).

6.4.3 Therapeutic strategies

Moving on to findings concerning perceptions of the therapeutic strategies within the intervention, the underlying approach of CBT was considered beneficial by both women treated for breast cancer and health professionals. This is perhaps unsurprising given that the REBT-based (a form of CBT) intervention identified by the systematic review in Study One (Chapter 3) was reported to have effectively improved women’s body image following mastectomy (Fadaei et al., 2011), while the CBT-based intervention which was adapted in the current thesis (‘Set Your Body Free’) was found to be the most effective

among women in midlife (McLean et al., 2011). However, there were interesting findings which have implications for intervention development.

Firstly, encouragement was given for simplification of the concepts and steps of CBT, through the use of lay language, familiar words, clearer explanations and diagrams to illustrate the connection between CBT concepts. This is important, since the effectiveness of patient education materials is enhanced by the use of simpler explanatory words, larger font size, bullet points, diagrams and figures, and simpler design to improve clarity and user-friendliness (Eames, McKenna, Worrall, & Read, 2003; Monsivais & Reynolds, 2003; Sand-Jecklin, 2007).

Additionally, while the strategy of identifying irrational thinking was considered beneficial, the examples used to illustrate such faulty thinking were considered inappropriate, since they were completely rational thoughts. For example, women would rightly feel self-conscious when showering at the gym, whereas feeling self-conscious while wearing a bathing suit with a prosthesis might be considered irrational. This emphasises the importance of using realistic examples that are appropriate for this sample. These findings also demonstrate the importance of interventions validating and respecting treatment-related body image concerns, by explicitly acknowledging the commonality of feeling ‘abnormal’, due to appearance changes which may be extensive (e.g. loss of a breast). Indeed, some women report feeling ‘disfigured’, ‘deformed, or ‘mutilated’ following treatment (Brunet et al., 2013; Coll-Planas & Visa, 2016; Elmir, Jackson, Beale, & Schmied, 2010; Shaw et al., 2016) and it is therefore important to recognise the severity of psychosocial effects and to not dismiss these feelings as ‘irrational’.

Like the examples employed to illustrate faulty thinking, the insinuated negative impacts of treatment on body image were felt by participants to be too severe and unrealistic. It was emphasised that within the context of breast cancer, although body image concerns are significant, they exist in parallel with other anxieties, which may take precedence due to their life-threatening nature (Bloom, Stewart, Chang, & Banks, 2004; Brennan, 2001). Relatedly, the removal or modification of tasks focussed on the future was recommended by participants to avoid anxiety around mortality. This suggests that CBT techniques developed in the eating disorder prevention and broader body image field which are centred on imagining oneself in the distant future are likely to be inappropriate for

women who have a history of breast cancer, and perhaps generally for all populations who are at risk of recurrence for a life-threatening illness.

All of the intervention techniques that fostered self-care and body acceptance, such as scheduling self-care activities, generating nurturing self-statements, and engaging in sensual experiences and relaxation exercises, were considered highly beneficial by both women treated for breast cancer and health professionals. While relaxation was a component of the effective REBT-based intervention identified in the systematic review (Chapter 3; Fadaei et al., 2011), none of the other self-care techniques feature in existing psychosocial interventions targeting the body image of this population. These novel findings suggest that self-care techniques developed within the broader body image field could be applied to women with treatment-related appearance and bodily changes. However, findings also implied that the way in which these techniques should be applied may differ between these populations.

Firstly, the examples employed to illustrate engaging with sensuality were perceived to be excessively appearance-focussed and not sufficiently focussed on embodying sensuality (e.g. wearing lipstick, buying a bra). Alternative examples of connecting with the body and engaging with the different senses (i.e. smell, sound), were consequently recommended. This focussed practice could include a component of mindfulness. This is a therapeutic approach with increasing evidence for its positive psychosocial effects among women treated for breast cancer (Cramer, Lauche, Paul, & Dobos, 2012; Zainal, Booth, & Huppert, 2013). The effects of mindfulness on body image have not yet been explored in this population, but improvements of body image have been identified among adolescents and midlife women in the general population (Albertson, Neff, & Dill-Shackleford, 2015; Atkinson & Wade, 2015). Further, it should be stressed that there were mindful elements in relation to eating in the original intervention, which were removed when adapted for use with women treated for breast cancer. Nevertheless, this highlights the potential benefits of incorporating mindful elements with regard to body image into the amended intervention.

The mirror exposure task was considered an important but anxiety-provoking strategy. Consequently, its earlier introduction and completion of a new stage each week was proposed, with the added suggestion that women should learn to touch their bodies before looking in the mirror. Exposure therapy, and graded exposure in particular,

whereby the individual exposes themselves to the anxiety-provoking situation in a gradual manner, has shown benefits in the treatment of anxiety and specific phobias (Dewis et al., 2001; Parsons & Rizzo, 2008). Further, while participating in mirror exposure can induce high levels of distress among women with poor body image and patients with eating disorders (Servián-Franco, Moreno-Domínguez, & del Paso, 2015; Vocks, Legenbauer, Wächter, Wucherer, & Kosfelder, 2007), this technique has been shown to reduce levels of body dissatisfaction, body checking and avoidance, anxiety, and depression (Delinsky & Wilson, 2006; Jansen et al., 2008; Key et al., 2002).

This highlights that mirror exposure is an important element of the present intervention, but may need to be introduced more slowly for this population. Indeed, looking at their bodies in the mirror has been described as a distressing experience by women treated for breast cancer (Ashing-Giwa et al., 2004; Langellier & Sullivan, 1998). However, this has also been considered a necessary experience which should be integrated into routine nursing practice, with health professionals increasing their sensitivity towards the experience for patients following surgery, and offering them emotional support (Freysteinson, 2010, 2012). These findings therefore have implications for both health professionals and intervention development.

Physical activity was a strategy considered important by participants, which supports the findings of two interventions identified in the systematic review (Chapter 3) which reported beneficial effects on the body image of women treated for breast cancer (Mehnert et al., 2011; Speck, Gross, et al., 2010). Nevertheless, examples in the present intervention were considered too strenuous (e.g. kicking a football around with children for 20 minutes), and more realistic and achievable examples were suggested, since many women will be suffering from treatment-related physical restrictions (e.g. mobility limitations, decreased strength, lymphedema, and following surgery). An additional danger highlighted was the potential for current examples to make women feel bad about their physical incapability to engage in such demanding physical activity.

These findings have implications for intervention development, and suggest that interventions that are either entirely based on, or include components of, physical activity, which have been developed for “general population” groups, may not be appropriate for women treated for breast cancer. Further, these findings indicate that even physical-activity-based interventions developed specifically for this group (e.g. Mehnert

et al., 2011; Speck, Gross, et al., 2010) may not be appropriate for every woman or at every stage of treatment. Finally, given that the level of physical activity expected in the proposed intervention was perceived as too demanding, this further supports the decision to adopt a psychotherapeutic approach as opposed to a completely physical-activity-based approach (see Chapter 5).

6.4.4 Format and materials

Perceptions relating to the format of the intervention add to the findings of Study Two (Chapter 4), which quantitatively examined intervention preferences. Both women treated for breast cancer and health professionals indicated that two group facilitators would be more appropriate than one, thus mirroring the findings of the systematic review in Study One (Chapter 3). They also suggested that the two facilitators could be a psychologist working with a peer. While findings from Study Two indicated a preference for a peer or specialist nurse to run the group ahead of a psychologist, findings from the systematic review recommended the use of psychologists. Additionally, the current study showed that the advanced level of psychological expertise that would be required to deliver the intervention may not be possessed by specialist nurses or peers.

However, it was suggested that a peer might facilitate the group alongside a psychologist. Indeed, using peers as facilitators can be beneficial, since they are able to introduce their own experience with the intervention material and serve as an accessible role model (Lorig & Holman, 2003). The value of peers for group support and peer-led interventions for women undergoing treatment for breast cancer has been previously identified (Ashbury et al., 1998; Dunn et al., 1999). Further, peer facilitators have been used successfully in body image interventions for young adult women (e.g. 'The Body Project'; Becker, Bull, Schaumberg, Cauble, & Franco, 2008; Becker, Smith, & Ciao, 2006)

The most appropriate point to attend the intervention was reported to be at the end of active treatment (i.e. after, surgery, chemotherapy, radiotherapy). This was believed to be the most beneficial stage for receiving support as all expected treatment-related appearance changes would have taken place, and it would thus constitute a good point to start learning to accept these changes. Further, research indicates that body image deteriorates between post-surgery and six months after adjuvant treatment (Moreira & Canavarro, 2010), thus suggesting this is the point at which support for body

dissatisfaction is needed most. While findings from Study Two (Chapter 4) indicated a preference for receiving support for body image throughout the whole treatment journey, the second preferred time point was at the end of treatment, thus supporting preferences from the current study.

Finally, both the women treated for breast cancer and health professionals felt the intervention manual would benefit from the use of more accessible language, smaller amounts of text, a greater number of pictures and diagrams, and a small ring-binder to compile material. The importance of these recommendations is highlighted by research indicating improved effectiveness of patient education materials when these aspects of presentation and design are taken into account (Eames et al., 2003; Monsivais & Reynolds, 2003; Sand-Jecklin, 2007).

6.4.5 Limitations and strengths

There were several limitations associated with the current study which warrant recognition. The possibility of generalising the findings is compromised due to the homogeneity of the sample of women treated for breast cancer. Indeed, the majority were of white ethnicity, married or in a relationship, educated to at least a higher education level, and had completed active treatment. However, as previously highlighted, this reflects the demographics of women with breast cancer in the UK (Cancer Research UK, 2015). Nevertheless, it is important for research to be conducted with more diverse samples.

An additional limitation of the sample is the small number of health professionals who participated in interviews. While the views of five individuals may not be diverse enough to represent those of all psychologists and breast cancer nurses working in the area, all five health professionals possessed at least 10 years' experience in the area, and consequently were considered to hold a high level of expertise. Nevertheless, further research with a larger and more diverse range of health professionals may be useful in the future, particularly because there may be fewer clinician experts in breast cancer and body image to deliver the intervention in practice.

The potential for self-selection bias must be taken into account, given that the group of women treated for breast cancer were self-selected. Indeed, they were recruited both via emails following previous participation in the second study (Chapter 4) and through

advertisements to local support groups. This suggests that they may be motivated to participate in research, and particularly when the topic is of importance to them, and that the opinions of women who are more reluctant or uncomfortable in seeking support for, or talking about, body image, are not being heard. However, it is worth noting that not all 22 women expressed body image concerns. While there were several women who identified themselves as unhappy with their bodies, others were unaware of the extent of their concerns until participating in the study, and some were accepting of their bodies, but could appreciate that others might experience such concerns.

Given the nature of the design, women were unable to share their thoughts anonymously. Consequently, they may have felt reluctant to talk in front of each other, or to criticise the intervention in front of the researcher. This highlights why the findings concerning intervention preferences from the anonymous online survey in Study Two (Chapter 4) were important to integrate with the findings in the current study, as this may have overcome this limitation. Further, the online survey may have captured some women who have been reluctant to attend the group. Nevertheless, research suggests that focus groups can facilitate “safety in numbers”, and the company of participants with similar experiences can in fact ease the discussion of topics of a sensitive nature (Barbour, 2010; Frith, 2000).

An additional concern was that women would find it difficult to share their thoughts regarding the intervention with a younger researcher who possessed no personal history of breast cancer. Nevertheless, upon reflection (see 6.2.8), this did not seem to influence disclosure, and perhaps the company of several similar participants had greater influence than one dissimilar research. Further, the use of a young academic researcher as opposed to a breast cancer nurse specialist may facilitate disclosure, as familiarity can hinder discussion when there is the likelihood of encountering the individual outside the focus group (Cook, Cheshire, Rice, & Nakagawa, 2013).

Despite these limitations, the study also possessed a number of strengths. Importantly, the study engaged with geographically diverse stakeholders, and was interested in the opinions of both potential service users and health professionals who might deliver such an intervention. Not only did this reveal potential changes to improve the acceptability of the intervention, particularly with regard to the pre-existing content and therapeutic strategies, but it also provided the opportunity to ask participants about the format of the

intervention, thus allowing comparisons and triangulation with findings from the systematic review (Chapter 3) and survey (Chapter 4) to affirm the preferred format. An additional strength of the study was its compliance with the criteria outlined in two recognised guidelines for the assessment of qualitative methods (Elliott et al., 1999; Yardley, 2000), which suggested the research to be of sound methodological quality.

6.4.6 Implications for intervention development

This study explored the acceptability of an adapted version of the CBT body image intervention ‘Set Your Body Free’ among women treated for breast cancer and health professionals who work with this group. The intervention was originally designed to target the body image and eating concerns of women in midlife without cancer, but was adapted to additionally address appearance concerns in relation to treatment for breast cancer. The underlying hypothesis was that body image issues which are pertinent to women in midlife (e.g. associated with ageing) are likely to be of relevance to the subgroup who undergo treatment. The identification of the same sociocultural influences and psychological processes influencing the body image of both groups of women in the current study and in Study Two supported the adaptation of the existing intervention, identified in Study One, which targets these variables.

Findings from the study indicated that the adapted intervention was a good basis for a holistic psychosocial intervention which targets the body image concerns of women who have undergone treatment by addressing concerns about treatment-related appearance changes, and concerns pertinent to women in midlife in relation to ageing, together. Feedback from the target group and health professionals regarding further adaptations to increase acceptability, relevance and relatability to women treated for breast cancer, and consequently to improve the intervention, were invaluable and will be incorporated before further evaluation.

The steps taken to inform the selection, modification, and evaluation of the acceptability of the intervention were extremely rigorous, simultaneously following both the guidelines of the Intervention Mapping protocol (Eldredge et al., 2011) and the MRC framework for the development and evaluation of interventions (Craig et al., 2008). This study constituted Step 4 of Intervention Mapping, whereby intended participants and implementers are consulted regarding the proposed intervention. It also fulfilled the recommendation of acceptability evaluation within the Feasibility/Piloting stage of the

MRC framework. The next step in the development and evaluation of the intervention will involve making changes based on the findings of the acceptability study, and then evaluating the intervention's feasibility during postdoctoral studies. This will be discussed in greater detail in the next and final chapter.

Chapter 7: General discussion

7.1 Introduction

Survival rates for breast cancer have improved over recent decades due to medical enhancements (Cancer Research UK, 2015). Increasing numbers of women in midlife are consequently having to adjust to the consequences of the disease and its treatment. One major side-effect of treatment is appearance and bodily alterations. These can lead to body image concerns, which are subsequently associated with enduring negative impacts upon psychological and physical health (e.g. Begovic-Juhant et al., 2012; Cousson-Gelie et al., 2007). The importance of developing, evaluating, and disseminating psychosocial interventions to address the residual consequences of the diagnosis and treatment of cancer, including body image concerns, has been stressed by governments, health services, and organisations.

The overall aim of this thesis was to develop and assess the acceptability of an evidence-informed psychosocial intervention targeting body image among women in midlife treated for breast cancer. A mixed-method pragmatic approach was adopted, including the use of the MRC framework for the development and evaluation of complex interventions. A systematic review of existing body image interventions for women in midlife, including those treated for breast cancer, was conducted. An online survey then explored the psychosocial influences on body image among women in midlife, and tested and compared an established sociocultural model of body image between women treated, and not treated, for breast cancer. Based on the findings of these two studies, an existing evidence-based intervention for women in midlife, identified as being among the most effective for improving body image in the systematic review, and targeting the influences identified in the online survey, was adapted specifically for women treated for breast cancer. Finally, the adapted intervention was evaluated for its acceptability among women treated for breast cancer and health professionals involved in the psychosocial care of these women.

This final chapter provides an integrated summary of the findings across the thesis, the implications of these findings for practice, theory, and research, a reflection concerning the adopted methodology, the next stage of evaluation for the intervention, recommendations for future research, and overall conclusions.

7.2 Summary of findings across the thesis

7.2.1 Influences on body image among women in midlife treated for breast cancer

Thesis findings revealed that the body image of women in midlife is influenced by sociocultural and psychological factors proposed within the Tripartite Influence Model (Thompson et al., 1999), but the patterns and nature of these influences differed somewhat between women treated, and not treated, for breast cancer. Specifically, findings from the online survey (Chapter 4) suggested that while both groups of women were susceptible to the influence of media pressure and family pressure, the influence of friends' pressure was only relevant for women not treated for breast cancer. Further, the thesis indicated that the psychological processes proposed within the model only mediate the influence of media pressure among women in midlife, irrespective of whether they have been treated for breast cancer. The subsequent acceptability study (Chapter 6) both confirmed and extended these findings, by revealing that the nature of sociocultural and psychological influences may differ for women treated for breast cancer. For example, targets of upward appearance comparisons were both women in the media who represent unrealistic ideals and others treated for breast cancer. The thesis has therefore identified previously unexplored sociocultural and psychological influences on the body image of this subgroup of women in midlife.

The thesis also provided insight concerning biological, diagnosis-, and treatment- related influences on the body image of women treated for breast cancer. Firstly, the acceptability study (Chapter 6) discovered that changes to physical function and capabilities (e.g. fatigue, reduced mobility, menopause) due to ageing and treatment alike can impose adverse impacts on body image. While reflecting previous empirical research concerning the influence of treatment-induced bodily changes (e.g. Brunet et al., 2013), these findings were the first to identify the additional adverse influence of ageing-related bodily changes on the body image of this group. Secondly, the online survey (Chapter 4) indicated that the body image of women treated for breast cancer was not influenced by the length of time since diagnosis and treatment, the number of surgical procedures received, or the forms and combinations of treatment received. This both supported (e.g. Collins et al., 2011) and contradicted previous findings (e.g. Moreira & Canavarro, 2010).

7.2.2 Interventions for body image among women in midlife treated for breast cancer

The thesis indicated a need for body image interventions targeting women treated for breast cancer. Indeed, while the online survey (Chapter 4) discovered that the vast majority (84%) of this sample felt that support for body image would be beneficial, only a minority (17%) had received such support. Additionally, women in the acceptability study (Chapter 6) felt that body image interventions would be beneficial, but little psychological support was currently available to address concerns. These findings were not surprising, as the systematic review (Chapter 3) found that only a minority of interventions targeting women treated for breast cancer attained improvements in body image at post-test or follow-up. Moreover, most interventions were evaluated in methodologically poor studies, which limited confidence in their findings.

The triangulation of findings from the systematic review (Chapter 3) and the online survey (Chapter 4) informed the adaptation of an existing evidence-based and rigorously evaluated effective intervention, which targeted women in midlife in the general population (McLean et al., 2011), for use with women treated for breast cancer. The adapted intervention was found to be acceptable to both this group and their health professionals. Nevertheless, further adaptation to the strategies employed, influences targeted, and impacts addressed, was requested (Chapter 6).

Finally, findings across the thesis revealed preferences in relation to the facilitators, timing, and target group of both the adapted intervention and body image support more generally for women treated for breast cancer. Findings indicated the use of psychologists, peers, and/or specialist nurses as preferred facilitators. Participants in the acceptability study (Chapter 6) perceived the most appropriate time to receive the adapted intervention was following completion of active treatment. This was the second preferred time point for body image support in the online survey (Chapter 4), following a preference for support throughout the whole journey. In relation to the target group in greater need of body image support, findings from the online survey (Chapter 4) revealed no significant differences between women with respect to diagnosis- and treatment-related factors. This suggests that both the adapted intervention and wider body image support could usefully target all women treated for breast cancer, regardless of their diagnosis and treatment pathway.

7.3 Implications of the findings of the thesis

7.3.1 Implications for policy and practice

These findings stress the need for body image support to be available at every stage of treatment and recovery. For example, while appearance changes may not take place until treatment has commenced, it would be beneficial for patients upon diagnosis to be fully informed of the appearance and bodily alterations associated with their particular treatment options, and for these to be taken into account within the treatment decision-making-process on an individual basis. It is therefore important that avenues for support are in place at this early stage. These may include support groups, where diagnosed women can meet others who have undergone different forms of treatment, and can discuss their impact on their body image (e.g. ‘Keeping Abreast’, a UK-based support group specifically for women considering breast reconstruction).

Similarly, it is also important that women can be directed towards appropriate forms of body image support upon completion of active treatment and beyond. This may be the point when women will require the most support to facilitate acceptance of appearance and bodily changes, and findings from the thesis indicate that the proposed CBT intervention is a promising avenue at this stage. Indeed, while further evaluation is required (see 7.5.1), the rigorously developed and evidence-informed psychotherapeutic intervention in this thesis was considered acceptable to both the target group and their health professionals. This body image intervention could therefore be made available to women treated for breast cancer, if found to be effective in future trials.

However, it cannot be assumed that the present intervention, or a CBT approach more generally, will be appropriate for all women who are experiencing body image concerns following treatment for breast cancer. The sample of participants employed in both the online survey (Chapter 4) and acceptability study (Chapter 6) was limited with regard to both ethnicity and socio-economic status. The majority of participants in both studies were of White ethnicity, and were educated to at least undergraduate level, thus indicating a higher socio-economic status. It is therefore difficult to generalise the findings in relation to the acceptability of the intervention to women of other ethnicities and lower socio-economic status. This emphasises the importance of using a more diverse sample in future evaluative studies of the present intervention, to determine

whether the CBT-based intervention is appropriate for women of varied socio-economic status and ethnicities.

Further, it is important to consider the use of alternative therapeutic approaches to address body image concerns among women treated for breast cancer. When the systematic review of interventions (Chapter 3) was conducted, very few evaluative studies had considered the use of third wave therapeutic approaches. However, one study reported an Acceptance and Commitment Therapy (ACT)-based intervention to have maintained improvements on the body image of women in midlife who had not undergone treatment for breast cancer (Pearson et al., 2012), thus indicating promise for this approach. Additionally, two clinical psychologists from the acceptability study (Chapter 6) noted their preference for employing third wave therapeutic approaches in practice. Therefore, whilst CBT currently has the stronger evidence base for addressing body image concerns, support is growing for the use of third wave therapeutic approaches such as ACT, and is consequently in need of greater evaluation among women who have undergone treatment for breast cancer.

Finally, it should also be recognised that support tied to a specific therapeutic model may not be appropriate for all women who are suffering with body image concerns following treatment for breast cancer. Indeed, some women in the acceptability study (Chapter 6) felt intimidated by the word “therapy”, and considered the therapeutic techniques quite complicated to understand. This suggests that alternative non-therapeutic approaches, such as general support, self-help groups or self-help material, may suffice. Indeed, general support offered via telephone was found to improve body image among women treated for breast cancer (Salonen et al., 2009) in the systematic review of interventions (Chapter 3), thus indicating promise for non-therapeutic approaches. This highlights the importance of health professionals signposting patients to the most appropriate approach for that individual and their needs.

Nevertheless, in order for women to be directed towards appropriate evidence-based support at any point along the treatment journey, it is essential that health professionals who work with this patient group are able to identify signs of body image distress. Further, as indicated by findings in the online survey (Chapter 4), health professionals should not assume that women who undergo a particular form or combination of treatment (e.g. bilateral mastectomy without reconstruction, plus chemotherapy and

radiotherapy) will need more or less support in coming to terms with appearance and bodily changes than others. However, it is appreciated that financial and human resources are limited, and it is therefore crucial that resources are dedicated to interventions that are demonstrated to be most effective and acceptable to women treated for breast cancer in rigorous research.

Additionally, it is understood that health professionals may not feel equipped or comfortable addressing concerns relating to treatment-induced appearance and bodily changes. It is therefore important that they possess at least a basic level of knowledge and understanding of body image issues among women treated for breast cancer, so they are aware and able to signpost patients towards body image-specific forms of support. It might also be worthwhile for future research to investigate the possibility of task-shifting the delivery of support to nurse specialists, peers, or outside agencies. Task-shifting has been found to increase the scalability of body image interventions usefully in other contexts (Becker et al., 2016). Further, 'Changing Faces', a UK-based charity which provides support for individuals with an altered appearance or visible difference, has developed training resources for health professionals working with patients with burns, in order to improve their understanding of the psychosocial needs of this group (Changing Faces, 2016). A similar training resource developed for health professionals working with patients treated for breast cancer could be beneficial.

The proposed intervention requires further evaluation before it can be made available for use. Nevertheless, the studies informing its development have useful implications for current practice. Specifically, findings from the thesis provide new knowledge concerning the influences, nature, and impacts of body image concerns among women treated for breast cancer, which can be applied by specialist health professionals (e.g. clinical psychologists, breast cancer nurse specialists) who are likely to deliver body image-specific support to this group.

Firstly, clinical psychologists and breast cancer nurse specialists should be made aware of the sociocultural and psychological variables which were identified as influences on the body image of women treated for breast cancer. Secondly, the findings highlight the importance of clinical psychologists and nurse specialists addressing the body image concerns of this group holistically, by taking into account distress associated with both ageing- and treatment- related appearance and bodily changes. These should not be

separated or ignored, since they are likely to have a combined adverse impact on psychological and physical health. Finally, the adverse impact of treatment-related appearance and bodily concerns upon relationships and intimacy was also highlighted in the thesis, and reinforces the importance of clinical psychologists and breast cancer nurse specialists ensuring that this potential consequence is addressed.

For these findings to be translated into clinical practice, several avenues should be pursued. Findings could be incorporated into a training package for health professionals working with women treated for breast cancer (as suggested above), whereby different levels of detail are provided depending on the extent of the body image-specific support which would be delivered by the particular health professional. For example, while less specialised staff (e.g. general practitioners) could be educated concerning the nature and impacts of concerns, so as to identify and signpost individuals who might be struggling, more specialised staff (e.g. clinical psychologists) could be trained more comprehensively concerning the influences on body image that constitute targets for intervention.

Secondly, if the present research is to make an impact, its findings should be used by cancer organisations, such as Breast Cancer Care, to lobby government and policy makers concerning the need for support to alleviate body image concerns among women treated for breast cancer. The findings of the individual studies have been shared with cancer organisations, including Breast Cancer Care, Maggie's, and Haven, and it is hoped that they will improve their understanding of the body image concerns of their target group. Finally, academic and clinician conferences provide a good opportunity to raise awareness of research, and the individual studies within the thesis have therefore been disseminated at a variety of international conferences (Appendix 25).

7.3.2 Implications for theory

The Tripartite Influence Model (Thompson et al., 1999) has undergone substantial evaluation among adolescent and young adult women. This thesis was the first to test the originally proposed model in relation to body dissatisfaction among women in midlife. The novel findings have implications for theory, particularly in relation to the extent to which the model is able to accurately and comprehensively conceptualise the body image of women in this age group. Indeed, while the findings indicated that internalisation of the thin ideal and upward appearance comparisons mediate the influence of media on

body image, they also suggested that these psychological processes are less relevant with regard to the influence of friends and family on body image in midlife. Other mediators (e.g. importance of appearance, ageing anxiety) may be more relevant for this age group. The implications of these findings for research will be considered later (7.3.3).

These novel findings have additional implications for body image theory among women treated for breast cancer. The identification of sociocultural and psychological influences on their body image extends previous medically- focussed theoretical models (Fingeret, 2010; Fingeret et al., 2013; White, 2000), which are heavily focussed on the influence of non-modifiable diagnosis- and treatment- related factors (e.g. tumour characteristics, modality of treatment). Modifiable psychological influences (e.g. depression, anxiety) have been proposed in cancer-specific theoretical models, but these have received limited empirical support (e.g. Figueiredo et al., 2004) and are likely to be too distal to inform targeted intervention strategies for body image. Previous research indicates that targeting risk factors specific to body image is more effective than targeting general stress-vulnerability factors (Diedrichs & Halliwell, 2012). For example, the influence of upward appearance comparison is very specific to body image. The present findings have therefore extended our understanding of body image among women treated for breast cancer, and have identified new modifiable appearance-focussed sociocultural and psychological influences which can serve as targets for intervention and inform intervention strategies.

It is also important to consider potential implications in relation to other cancers, and other groups with an altered appearance or visible difference. As highlighted in Chapter 1, a biomedical, illness-focussed perspective has tended to dominate research and theoretical models of body image among women treated breast cancer. This thesis has demonstrated the helpful application of a body image theory developed without a condition-specific focus for use with this group. A medicalised and pathology-focussed approach to body image has also been adopted with other groups with an altered appearance or visible difference (e.g. cleft lip and palate, head and neck cancer, burns), whereby attention has been directed towards exploring the influence of the cause, type, size, severity, location, and visibility, of the feature considered to be different (e.g. Lawrence, Fauerbach, Heinberg, & Doctor, 2004; Ong et al., 2007; The Appearance Research Collaboration, 2009). Nevertheless, the present thesis and previous research with other types of altered appearance or visible difference have failed to support a

correlation between these factors and associated levels of body image concerns and distress (e.g. Partridge & Rumsey, 2003; Wallis et al., 2006).

The criticisms associated with a narrow illness-focussed approach adopted in relation to individuals with an altered appearance or visible difference are twofold. Firstly, it fails to consider the influence of broader sociocultural and psychological variables on body image. The findings of the present thesis suggest that women treated for breast cancer are just as vulnerable to these influences as women in midlife not treated for breast cancer, and other younger “general population” groups (e.g. Rodgers et al., 2011). Further, women treated for breast cancer were found to be most vulnerable to perceived pressure from the media to alter appearance, compared with pressure from the other sociocultural sources (friends, family). This was interpreted in the light of the treatment-related appearance changes among this group, which were likely to have distanced them further from the appearance ideals portrayed in the media than their ageing-related appearance changes alone. It is therefore reasonable to hypothesize that other groups with an altered appearance or visible difference may also be vulnerable to the bombardment of unrealistic appearance ideals from the media, given that they too are likely to experience incongruence between their own appearance and that of beauty ideals. If this is discovered to be the case, these sociocultural and psychological variables may form worthwhile targets of intervention for other groups.

A second issue relates to previous models’ primary focus on the aspect of appearance that has been altered or is different (e.g. the chest following treatment for breast cancer, the nose and mouth in people with cleft lip and palate). This restricted approach does not account for body image concerns about other aspects of appearance, despite findings from the present thesis and previous research (The Appearance Research Collaboration, 2009) indicating that individuals with an altered appearance or visible difference can be dissatisfied with other features, such as their weight, shape, and the effects of ageing. Further, a narrow focus may inadvertently reinforce the feelings of these individuals that they are “different” and unlike like everyone else. This could be detrimental, by drawing attention towards the specific feature and triggering associated-appearance concerns, and consequently defeating the objective of facilitating psychosocial adjustment.

A more holistic approach concerning body image is therefore necessary in the area of breast cancer, other groups with an altered appearance or visible difference, and the

broader body image field as a whole. A helpful way of conceptualising the mutual existence of concerns in relation to, and beyond, the aspects of appearance that look different, would be through the use of a continuum, similar to that proposed by Fingeret (2010) for women treated for breast cancer (see 1.6.2). The continuum would represent the degree of body image concerns for all individuals in the population, irrespective of their appearance and whether concerns are specific to an aspect of appearance. Considering body image concerns on a continuum rather than only focussing on condition-specific factors could ameliorate the current segregation observed between the fields of body image and altered appearance or visible difference research (Rumsey & Harcourt, 2012). This would make it easier for researchers to learn from one another and more strategically advance research and practice through a coordinated approach.

However, it is important for the broader body image field to consider body image concerns related to isolated aspects of appearance, as well as those related to weight, size, and overall appearance. For example, whilst the current thesis has considered body image concerns relating to the breast in light of treatment-related changes for women who have had breast cancer, it should be highlighted that women can feel dissatisfied with their breasts in midlife, regardless of having received a diagnosis of, and treatment for, breast cancer. Indeed, Western societies consider the breast central to women's attractiveness, disability, and sexuality (Baucom et al., 2005), and women in midlife report feeling less attractive due to "sagging breasts" (Fahs, 2017), whilst a greater degree of dissatisfaction with one's breasts has also been associated with a lower degree of sexual satisfaction among this group (Pujols, Meston, & Seal, 2010). Further, the breast is seen to signify femininity, motherhood, and nurturance (Khan et al., 2000), and research indicates that body image concerns relating to the breast can influence the taking up and duration of breast feeding among women in midlife (Hauff and Demerath, 2012; Keely, Lawton, Swanson, & Denison, 2015). This highlights the importance of breasts for women in midlife, even before receiving a diagnosis of breast cancer, and their isolated influence upon body image should therefore not be ignored.

Findings also have implications for the conceptualisation of body image. A wide array of definitions has been employed by researchers to operationalise body image, but the majority have adopted a narrow focus on the aesthetics. For example, body image has been described as an individual's perceptions, thoughts, feelings, and behaviours related to their physical appearance (Cash, 2004); an individual's subjective evaluation of their

own appearance (Thompson et al., 1999); and the picture an individual has in their mind of the size, shape, and form of their body (Slade, 1988). These appearance-focussed definitions are unsurprising given that the body image field at present has largely evolved from the study of eating disorders, which has a focus on weight and shape (Cash, 2004). However, the thesis revealed that women treated for breast cancer identified additional body image concerns in relation to the body's physical functionality and capabilities. It is important to address these, as while aesthetic changes do not affect one's physical capabilities, the functional changes associated with ageing may cause limitations on daily activities and impose adverse effects on quality of life.

It is therefore important for the body image field as a whole to broaden narrow definitions in order to accommodate the functional and physical components of body image. A more holistic and embodied description of body image has been proposed as a multidimensional construct extending beyond the evaluation of an individual's appearance, and encompassing perceptions, thoughts, feelings, and behaviours, in relation to the body's functions and capabilities (Pruzinsky & Cash, 2002). Further, the area of 'positive' body image focusses on embodiment, body acceptance, and attending to the body's needs (Avalos et al., 2005). The findings of this thesis therefore reinforce the importance of conceptualising body image as a multidimensional construct.

Finally, the present findings have important implications for the conceptualisation of appearance ideals. While women treated for breast cancer could relate to the concept and role of appearance ideals, the 'thin ideal' was not necessarily the dominant appearance ideal for everyone. Indeed, it was highlighted that women can either gain or lose weight during treatment for breast cancer, and that the latter can also have adverse effects on body image. This consequence can leave women wishing to be curvier, and therefore diminish their ability to relate to the 'thin ideal', instead relating more to a 'curvy ideal'. While the 'thin ideal' is a shortcut term used to describe an appearance ideal consisting of multiple attributes (e.g. long hair, symmetrical breasts, straight white teeth, youthful looking skin; Diedrichs, 2016) within which thinness is emphasised, these findings suggest that the term 'thin ideal' would benefit from being reframed as 'appearance ideals'. This would encapsulate the ideals of different women, and increase its applicability to populations with an altered appearance or visible difference.

7.3.3 Implications for research

The application of a well-supported theoretical model (i.e. the Tripartite Influence Model; Thompson et al., 1999) from the wider body image field to women treated for breast cancer specifically provides a promising start for investigating broader sociocultural and psychological variables among groups with an altered appearance or visible difference. However, findings from the thesis (Chapter 6) suggested that additional mediators may be of greater relevance for women in midlife (irrespective of whether they have been treated for breast cancer). Further, only half the variance of body image (53% for women not treated for breast cancer; 50% for women treated for breast cancer) was accounted for by the sociocultural and psychological variables alone, indicating that other unknown variables are likely to influence body image among this group and are worth pursuing.

Other psychosocial variables have been found to influence the body image of women in midlife, and therefore warrant consideration in an extended model, including appearance investment, ageing anxiety, cognitive reappraisal, and self-care (McKinley & Lyon, 2008; McLean et al., 2010; Webster & Tiggemann, 2003). The measures for these variables were administered in the online survey (Chapter 4), and will therefore undergo examination in post-doctoral studies, as this was beyond the scope of the present thesis. Indeed, researchers found that an extension of the Tripartite Influence Model, which included biological, psychological, and social influences, accounted for a large proportion of the explained variance in body image (86%) among adolescent girls (Rodgers et al., 2014). This indicates the usefulness of testing an extended version of the model to account for body image among women in midlife. Once again, it would be beneficial to compare this model between midlife women who have been treated for breast cancer and those who have not. If findings were to reveal similarities between groups, this would support the use of other interventions in the broader body image field which target these influences, with women treated for breast cancer.

In addition to appearance-related influences (e.g. appearance investment, ageing anxiety), it is also important to consider other individualistic factors which may influence body image among women treated for breast cancer and consequently warrant targeting in a psychosocial intervention. Indeed, depressive symptoms (Begovic-Hunt et al., 2012; Zimmerman et al., 2010; Falk-Dahl et al., 2010), anxiety symptoms (Falk Dahl et al.,

2010), and lower self-esteem (Fobair et al., 2006) have all been associated with poorer body image among this group. Further, the supported extension of the Tripartite Influence Model of body image among adolescent girls included both depressive symptoms and self-esteem (Rodgers et al., 2014), thus warranting their examination in an extended model among women treated for breast cancer. Indeed, these individualistic factors could constitute further targets for intervention.

The thesis's examination of theory and research in the broader body image and cancer-specific fields revealed a prominent methodological issue across them both. Specifically, the use of different measures to assess the same constructs limits comparisons between findings and consequently the ability to draw inferences. For example, while previous research has revealed an association between importance of appearance and body dissatisfaction among both women in midlife treated (Moreira & Canavarro, 2010), and not treated (McLean et al., 2010), for breast cancer, different measures were used across the studies to assess this construct. For example, the Appearance Schema Inventory (Revised; Cash et al., 2004) was employed with women treated for breast cancer. This assesses efforts to look or feel attractive and the extent to which appearance influences self-worth. In contrast, a modified version of the Self-Objectification Questionnaire (Noll & Fredrickson, 1998) was employed with women not treated for breast cancer. This assesses the importance of both appearance and function for an individual's self-concept. These two measures both aim to capture the importance of appearance to self. However, while the Appearance Schema Inventory assesses appearance in general, the modified version of the Self-Objectification Questionnaire assesses isolated aspects of both appearance (e.g. weight) and function (e.g. stamina). Consequently, it is important that body image researchers, both within a particular area of study and those researching the field more broadly, collaborate to establish a consensus approach to measurement.

Relatedly, the comparison of theoretical models and constructs used in the body image and visible difference field may help to coordinate research and efforts. This would highlight whether currently segregated theoretical models are perhaps referring to the same constructs under different labels. For example, components from White's (2000) cognitive behavioural model of body image in cancer patients (Chapter 1) might be compared with constructs employed within the broader body image field. Indeed, the component 'body image schema' (e.g. "looks are everything") might be compared with 'appearance investment', a significant construct in the broader body image field.

Similarly, the component ‘ideal-self discrepancy’ might be compared with the construct ‘perceptual disturbance’ in the broader body image field.

Constructs could undergo comparison through exploratory factor analysis, whereby measures believed to capture the respective constructs are analysed in relation to their convergent validity. This would determine the extent to which different measures are assessing the same underlying construct, and therefore provide insight regarding whether constructs with different labels across the field are actually the same. Such comparisons of constructs and measures would help streamline measures, and enable the field of body image to progress as a whole, because if similarities were found to exist, researchers working in different areas could learn from one another. Indeed, this would make it possible to apply what has already been learnt in research conducted with “general population” groups to populations with an altered appearance or visible difference, and vice versa.

Thesis findings also have implications for the assessment of body image concerns among women treated for breast cancer. Firstly, the systematic review (Chapter 3) indicated that the majority of evaluative studies among this group assessed body image using either the Body Image Scale (Hopwood et al., 2001) or the Body Image Subscale from the QLQ-BR23 (Sprangers et al., 1996). Both measures assess the individual’s evaluation of their own appearance in relation to treatment-related appearance changes, and are commonly employed in this field. However, findings from the acceptability study (Chapter 6) revealed that the nature of body image concerns among this population is not isolated to treatment-related appearance changes. Rather, it is also related to ageing-related appearance changes and changes to bodily function and capabilities. Further, all body image measures employed in the online survey (Chapter 4) were originally developed in the wider body image field, but they still demonstrated good internal validity ($\alpha > 0.80$) among women treated for breast cancer.

These findings collectively emphasise the benefits of employing measures that holistically assess multiple dimensions of body image among women treated for breast cancer, rather than relying on the isolated use of breast-cancer specific scales. The employment of validated measures developed in the broader body image field, in addition to breast-cancer specific measures, is therefore advisable. This will capture both concerns which are unique to this specific group (i.e. treatment-related concerns) and

concerns which are common to women in midlife (i.e. ageing-related concerns). This multifaceted assessment will consequently provide practical implications, whereby women can be directed to the most suitable body image intervention. For example, a woman who indicates greater concern in relation to ageing-related appearance changes than treatment-related appearance changes can be directed towards a body image intervention which focusses on changes in midlife rather than changes associated with treatment. It is therefore recommended that scales are employed which assess satisfaction with overall appearance (e.g. the Appearance Evaluation subscale of the MBSRQ; Cash, 2000), satisfaction with bodily function and capabilities (e.g. the Fitness Evaluation and Health Evaluation subscales of the MBSRQ; Cash, 2000), feelings of embodiment and body appreciation (e.g. the Body Appreciation Scale; Avalos et al., 2005), and anxiety concerning ageing-related appearance concerns (e.g. the Physical Appearance subscale of the Anxiety about ageing Scale; Lasher & Faulkender, 1993).

Findings from the present thesis emphasise the importance of adopting a prospective design in the study of body image concerns, their associated influences, and their impacts among women treated for breast cancer. A preference for body image support throughout the whole treatment journey was indicated in the online survey (Chapter 4). A prospective research design would therefore inform the nature of concerns, and thus the required focus of body image support, at different time points along the trajectory. Additionally, this design would enable a comprehensive investigation of psychosocial factors (e.g. anxiety, depression) which have been previously proposed as influences on body image within cancer-specific theoretical models, but have received little empirical support. A prospective design would also serve to strengthen confidence in the role of sociocultural and psychological influences identified in the thesis as risk factors for body dissatisfaction among this group. These influences require examination over time, given that cross-sectional theoretical models require temporal confirmation of proposed directions of causality. Finally, this design is recommended to identify potential adverse consequences of poor body image which require attention. For example, findings from the thesis highlighted disruptions to relationships and intimacy caused by treatment-related body image concerns (Chapter 6), thus emphasising the importance of assessing this in the long term and intervening appropriately.

Finally, the thesis findings have implications for the methodology of future studies which evaluate interventions targeting the body image of women treated for breast cancer. Only

half such studies identified in the systematic review (Chapter 3) conducted a follow-up evaluation of the intervention, and thus precluded knowledge relating to whether it produced maintained or delayed effects on body image. It is therefore recommended that future evaluative studies conduct a follow-up assessment of at least six months, which satisfies the Society of Prevention Research criteria for efficacy (Flay et al., 2005). This would enable both comparisons of sustained effects between evaluative studies and an assessment of the resources needed for intervention delivery in relation to the outcomes achieved.

In order to improve the methodological rigour of evaluative studies, the employment of randomisation and allocation concealment is recommended. However, researchers should be aware of the ethical and practical issues associated with randomising women to both passive and waitlist control conditions (Bottomley, 1997). Women may desperately require support at that point in time, thus suggesting that it is potentially unethical to make them wait for a long period, particularly when follow-up assessment points are taken into account. These women may consequently elect to access other available forms of support in the meantime, rather than waiting to receive the evaluated intervention. The adoption of an active control group may therefore be considered.

Additionally, while the challenges associated with blinding staff and participants to condition allocation in psychosocial interventions is recognised, efforts should be made to ensure the use of external facilitators and outcome assessors, in addition to the employment of centralised randomisation procedures. Finally, currently existing psychosocial interventions are in need of rigorous evaluation. For example, although a pre-post comparison has indicated early signs of promise for Breast Cancer Care's 'Moving forward' group programme (Scanlon et al., 2013), a randomised controlled evaluation is recommended to increase confidence in its benefits.

7.4 Reflections on methodology

The strengths and limitations of the methodology implemented in each individual study have already been appraised in their respective chapter. This section therefore reflects upon the overarching employment of a mixed-methods approach in the thesis.

The findings of the present thesis have contributed to the continuing debate concerning the use of mixed methods (e.g. Creswell, 2013; Tashakkori & Teddlie, 2003) in

numerous ways. Firstly, this thesis has demonstrated that the employment of mixed methods while adopting a pragmatic epistemological approach can be used to develop and evaluate health interventions. The importance of integrating quantitative and qualitative methods during the progression from intervention development to evaluation has been highlighted previously, given that health interventions which often include psychological, behavioural, or social processes, can be difficult to develop and examine using either approach on its own (Campbell et al., 2000; see sections 2.3.1 and 2.3.2). Further, a high level of confidence in the proposed intervention can be claimed on the basis of the mixed methods employed to triangulate the multiple sources and the rigorous evidence-based steps pursued in its development. Indeed, the mixed-methods approach enabled the integration of frameworks, existing knowledge, theory, and the opinions of service users and health professionals, all of which informed the development of the intervention.

Researchers have debated the value of mixing research methods, and have made calls to establish ways in which this practice can lead to better findings than the adoption of quantitative or qualitative methods alone (Tashakkori & Creswell, 2007). In view of this, the present thesis has demonstrated the benefit of combining complementary strengths from both quantitative and qualitative approaches to uncover new knowledge. As highlighted in Chapter 2 (see Table 2.1), quantitative research can be employed to test previously proposed theories, whereas qualitative research can be employed to describe complex phenomena in rich detail and to explore the interpretation of constructs (Johnson & Onwuegbuzie, 2004). Accordingly, testing the Tripartite Influence Model (Thompson et al., 1999) in the online survey (Chapter 3) identified sociocultural and psychological influences on the body image of women treated for breast cancer, but this quantitative study was unable to reveal information concerning the specific means by which these variables influence body image, and both the nature and impacts of body image concerns.

These limitations were overcome in the acceptability study (Chapter 6), within which women treated for breast cancer both confirmed and described in rich detail the specific ways in which the identified sociocultural and psychological variables influence their body image (e.g. engaging in upward appearance comparisons with others treated for breast cancer), the nature of their body image concerns (i.e. treatment- and ageing-related appearance and bodily changes), and the impacts of these concerns (e.g.

disruption to relationships and intimacy). The integration of quantitative and qualitative methods has consequently enhanced knowledge concerning the body image of this group through ‘triangulation’ (studying the same phenomenon through the combination of different methods) and ‘complementarity’ (elaborating and clarifying the findings of different methods to produce complementary insights and enhance understanding), which are two justifications for the adoption of mixed methods (Greene, Caracelli, & Graham, 1989). Further, these findings support the ‘fundamental principle of mixed research’ (Johnson & Turner, 2003), whereby the consequences of mixing methods are argued to be superior to those resulting from the employment of quantitative or qualitative methods alone (Johnson & Onwuegbuzie, 2004).

This thesis has also made a contribution to the mixed-methods literature, within which researchers have called for differentiation between mixing methods within a single phase and combining methods across phases (Creswell, 2013; Tashakkori & Teddlie, 2003). The present thesis adopted a mixed-methods multi-phase design, whereby both concurrent components (qualitative and quantitative studies occur at the same time or close in time, but are not integrated until the main interpretation of findings) and sequential components (one approach is conducted first, and its findings inform the next study employing the other approach) were combined (Creswell & Plano Clark, 2011).

Indeed, the systematic review (Chapter 3) and the online survey (Chapter 4) were conducted as separate studies. However, their findings were concurrently integrated and sequentially informed the adaptation of an existing body image intervention (Chapter 5) and its acceptability study (Chapter 6) through ‘development’ (findings from one method inform the other method), which is a third justification for the adoption of mixed methods (Greene et al., 1989). This mixed methods multi-phase design also enabled the triangulation and complementarity of findings, as discussed above. This thesis has therefore highlighted the benefits of combining concurrent and sequential components in a multi-phase research programme, through the demonstration of the adaptation of an existing intervention, and the evaluation of its acceptability.

Further, it is important to consider my experience of the research methodology adopted in this thesis. While I had previously conducted both quantitative and qualitative research, I had not conducted a systematic review (Chapter 3) prior to carrying out the present research. I consequently felt less confident about searching, identifying,

appraising, and synthesising papers using strict pre-determined criteria and tools. The publication of the findings of my systematic review (Appendix 25) was reassuring. Further, learning this rigorous approach for reviewing literature has taught me the importance of employing a non-subjective approach when appraising existing evidence. Further, it should also be stressed that the online survey (Chapter 4) was the first occasion on which I had employed SEM techniques for data analysis, while the acceptability study (Chapter 6) was the first time I had employed directed content analysis for data analysis. I am therefore fortunate to have taught myself new analytical methods for both quantitative and qualitative data. The adoption of a mixed-methods approach in the thesis has taught me valuable research methods, while also highlighting the benefits of integrating multiple methods in health research.

Finally, it is important to reflect on the use of PPI throughout the research programme. Whilst PPI was employed at different stages, it was not used in every study, and the whole research programme would have benefited from its greater exploitation. Upon reflection, PPI would have been established from the very beginning, whereby a group of women who had undergone treatment for breast cancer could have shared their opinions and insights on the research programme as a whole, to ensure that the topic was of relevance. They would also have been asked to review and refine the design of all studies, by offering guidance concerning research methods, reviewing research materials and instruments (e.g. participant information sheets, interview schedules), and by checking the interpretation of the findings (e.g. from the content analysis). This would have been particularly beneficial when adapting the original body image programme for use with women who have undergone treatment for breast cancer (Chapter 5), as whilst the target group provided detailed feedback on the adapted programme, they could have been involved in the prior process of the adaptation itself. This would have increased the likelihood that the resulting adapted intervention was acceptable and appropriate in its original state.

Nonetheless, PPI is being sought in the current post-doctoral study examining the feasibility of the adapted intervention. Women who have received treatment for breast cancer are reviewing participant information sheets, consent forms, the programme material, and the measures employed in the study. It will also be ensured that PPI is sought in future studies evaluating the intervention.

Women are offering their opinions on the participant information sheet, intervention material and measures. This shall continue to be adopted in future studies evaluating the intervention.

7.5 Future directions

7.5.1 The proposed intervention

The proposed intervention was considered acceptable to both women treated for breast cancer and health professionals who work clinically with this group. However, further evaluation is needed, in order to increase its evidence base and establish its effectiveness, before making it available in practice. Funding has been received to conduct a follow-on post-doctoral study assessing the feasibility of the proposed intervention. This will involve finalising the intervention manual based on the recommendations of women treated for breast cancer and health professionals in the acceptability study (Chapter 6). As programme facilitators, a clinical psychologist and a peer will undergo training in the delivery of the intervention. Two groups of women treated for breast cancer will subsequently participate in the 7-week programme and complete outcome measures pre- and post- intervention, and one month later. Feasibility data will also be collected in relation to recruitment, intervention delivery, attrition, and outcome measure completion rates. Finally, telephone interviews will be conducted with participants, the clinical psychologist and the peer, to explore their experience of the intervention and participation in the study.

This will satisfy the criteria stipulated in the Feasibility/Piloting phase of the MRC framework (Craig et al., 2008), and the tasks outlined in Step 5 of the Intervention Mapping protocol (Eldridge et al., 2004), in accordance with rigorous guidelines for the development and evaluation of interventions. If the intervention is shown to be feasible, an application will be submitted for funding to conduct a pilot trial, followed by a full scale trial to evaluate both the efficacy and cost-effectiveness of the intervention. The findings resulting from these stages of evaluation will determine the potential for the programme to be introduced into clinical practice and made available to women treated for breast cancer who are experiencing body image concerns.

7.5.2 Body image research

This thesis has successfully bridged two fields of parallel research to forge new knowledge, which has implications for the wider body image field as a whole. Indeed, it has demonstrated the useful application of a well-supported theoretical model developed for “general population” groups to conceptualise the body image of a group with an altered appearance, in this case, women treated for breast cancer. This informed the adaptation of an existing intervention which was considered largely acceptable to both this group and their health professionals. These findings emphasise the need for research conducted with groups with an altered appearance or visible difference to move beyond considering only illness- and condition-specific theoretical models, measures, and interventions. Considering the novel findings of this thesis, empirical investigation should examine the applicability of theory, measures, and interventions developed within the broader body image field for use with other cancer groups recognised to report appearance-related concerns (e.g. head and neck cancer; Fingeret et al., 2012), and other groups with an altered appearance or visible difference, including both congenital (e.g. cleft lip and palate, craniofacial disorders) and acquired conditions (e.g. burns, amputation).

However, given that the state of knowledge differs for each of these groups, a programme of research similar to that conducted in the present thesis would need to be repeated with each group individually. This is particularly important considering that, while there are overarching constructs, such as fear of negative evaluation, which are likely to be common to all groups with an altered appearance or visible difference (see Appearance Research Collaboration (ARC), 2014), there are also likely to be condition-specific issues. For example, the acceptability study (Chapter 6) found that single women treated for breast cancer expressed anxiety about disclosing information concerning their breasts to new partners, while partnered women spoke about the adverse impacts of surgery on intimacy. These issues may be particularly pertinent to this group, as the altered aspect of appearance, the breast, is central to femininity, attractiveness, and sexuality (Baucom et al., 2005; Lamb, 1995), and is usually concealed in everyday interactions.

This illustrates the need for future research to also account for psychological processes which are relevant for groups with an altered appearance or visible difference and may

not be included in body image theories developed for “general population” groups. Further, the identification of such issues would suggest that while intervention strategies developed in the wider body image field may be beneficial, there is still a role for strategies employed in interventions for individuals with an altered appearance or visible difference. This was highlighted in Chapter 6, where women recommended the inclusion of greater guidance concerning communication and disclosure in the proposed intervention. This suggests that social skills training, which has been found to be beneficial among individuals with an altered appearance or visible difference (Robinson, Ramsey, & Partridge, 1996) and is central to interventions for these groups (Clarke, Thompson, Jenkinson, Rumsey, & Newell, 2013), may be a fruitful avenue.

Further, while the present thesis has focussed on applying theory developed within the wider body image field to a group with an altered appearance, it would also be beneficial for researchers working with “general population” groups to consider both theories (e.g. the ARC framework, 2014) and intervention strategies (e.g. social skills training) developed for individuals with an altered appearance or visible difference. Finally, it should not be assumed that research and interventions conducted with “general population” groups will not include people with an altered appearance or visible difference. It is therefore worthwhile asking individuals who are participating in general body image studies whether they consider themselves to have an altered appearance or visible difference, or whether they experience concern in relation to a specific aspect of appearance (i.e. beyond weight and shape). This is important, as individuals may require support to specifically address this particular concern, rather than (or in addition to) support for more general appearance-related concerns (e.g. weight and shape) which are common to the wider population.

7.6 Conclusions

The studies undertaken in this thesis have enriched our understanding of body image concerns among women treated for breast cancer, and have led to the adaptation and acceptability testing of an intervention that addresses these concerns. The findings indicate that in addition to disease- and treatment- specific factors, broader sociocultural and psychological factors are important influences on body image among this group. They also indicate that an adapted evidence-based body image intervention for women in

midlife is largely acceptable to women treated for breast cancer and health professionals who work with this group.

The intervention will require further refinement and evaluation before its effectiveness can be determined and prior to dissemination. Nevertheless, this thesis has addressed calls from the government (e.g. Department of Health et al., 2010), support organisations (e.g. Breast Cancer Care, 2014), and health care providers to examine and manage the psychosocial needs of cancer survivors. It is hoped that this research will help to better support, and improve the quality of life of, women treated for breast cancer.

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