



# Breast size dissatisfaction, but not body dissatisfaction, is associated with breast self-examination frequency and breast change detection in British women



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## ABSTRACT

Studies examining associations between body image and breast self-examination (BSE) have returned mixed findings, but this may be a function of focusing on global body image. Here, we examined the impact of breast size dissatisfaction specifically on BSE and behaviours in relation to breast change detection. A total of 384 British women completed measures of breast size dissatisfaction, body dissatisfaction, BSE frequency, confidence in detecting breast change, and delay in contacting their doctor upon detecting a breast change. Regression analyses indicated that greater breast size dissatisfaction, but not body dissatisfaction, was significantly associated with less frequent BSE and lower confidence in detecting breast change. Both breast size and body dissatisfaction were significantly associated with greater delay in consulting a doctor following breast change, but the former was the stronger predictor. These findings suggest that improving breast size satisfaction may be a useful means of promoting improved breast awareness and self-examination.

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## 1. Introduction

Breast cancer is the most common cancer in women in the United Kingdom (UK) and the second most common cause of cancer death after lung cancer (Office of National Statistics, 2017). Moreover, women with breast cancer in the UK tend to present with more advanced disease and have poorer survival rates than women in other parts of Europe (Berrino et al., 2007). It has been suggested that delays in diagnosis, which is associated with poorer survival rates in breast cancer (Richards, Westcombe, Love, Littlejohns, & Ramirez, 1999), may be responsible for these figures in women in the UK compared with other parts of Europe (Sant et al., 2003). Conversely, regular attendance at mammography screening is one of the most effective ways of detecting breast cancer and reducing the mortality rate from breast cancer (e.g., National Health Service Breast Screening Programme, 2006, 2010). Nevertheless, Greenwald (2001) suggested that most breast cancers are detected

by women through breast self-examination (BSE), which involves regular, mechanistic palpation of the breasts.

A wide range of individual difference factors have been associated with BSE frequency (e.g., perceived self-efficacy; Luszczynska & Schwarzer, 2003), but little research has focused on the role of body image (for a review, see Ridolfi & Crowther, 2013). This is surprising given that BSE requires physical examination and awareness of one's own body and should, therefore, be a *prima facie* candidate for shaping BSE engagement. That is, to the extent that BSE represents a threat to body image (Chait, Thompson, & Jacobsen, 2009), women with more negative body image may avoid performing BSE to reduce that threat. Moreover, BSE could activate negative thoughts about the body, particularly if women are too anxious to feel their breasts in case they should discover an abnormality (Burton, 1995; Kearney, 2006). As Baines (1983, p. 256) wrote, it requires that a woman treat her body with distrust: "These breasts of mine cannot be trusted; I must monitor them constantly to discover if they have betrayed me by becoming cancerous".

The little research that has examined associations between BSE and body image appears to have reached mixed findings. Thus, more negative body image has been associated with lower frequency of BSE in North American community women (Clark et al.,

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2009), Turkish community women (Cam & Gümüş, 2009), and Malaysian university students (Abu Samah & Ahmadian, 2014). On the other hand, two studies have reported no significant associations between negative body image and BSE frequency in community women from the United States (Chait et al., 2009) and Malaysian university women (Ahmadian et al., 2016). There is also limited qualitative data on this topic. One study of British lesbians inferred that body discomfort is an important reason for not practising BSE (Fish & Wilkinson, 2003). In short, the relationship between body image and BSE appears to be equivocal at best, although – as Ridolfi and Crowther (2013) caution – research on this topic remains piecemeal.

In addition to the lack of sustained scholarly attention, previous studies are also hampered by a number of additional limitations. First, as noted by Ridolfi and Crowther (2013), some studies have relied on non-psychometrically sound measures of body image (e.g., the use of single-item measures of uncertain validity). Second, some studies have relied on relatively small samples and/or have recruited college-aged women. Third, all previous studies have focused on indices of global negative body image. However, it stands to reason that breast dissatisfaction may be a more direct predictor of BSE engagement. Indeed, based on interviews with women, Thomas and Usher (2009) inferred that negative feelings about the appearance of one's breasts contributed to "breast conflict" (i.e., a discord between women's feelings about their breasts and how women define themselves in relation to their breasts), which in turn impacted on decision-making *vis-à-vis* mammography screening. Thus, a focus on breast dissatisfaction may help resolve the conflicting findings in previous studies.

A fourth issue worth considering is that, done on its own and without proper training, BSE may not provide any clear benefit for early breast cancer detection and mortality reduction (for a review, see Kösters & Göttsche, 2008). In fact, BSE may increase the number of benign lesions identified and lead to increased number of biopsies performed (Nelson et al., 2009). In the UK, healthcare policy no longer advocates systematic BSE and instead promotes "breast awareness", which can aid early breast cancer detection (Harmer, 2011; Mant, 1991; National Health Service, 2015; Royal College of Nursing, 2002). There remains some confusion about how precisely breast awareness should be defined, but in general it involves familiarity with one's breasts and the way the breasts change throughout a woman's life (McCready, Littlewood, & Jenkinson, 2005; Thornton & Pillarisetti, 2008). It involves women gaining an awareness of how their breasts look and feel normally, as well as developing the confidence to notice any change (e.g., changes in size, swelling, pain, lumps or thickening) that might help detect breast cancer early. Given these issues, it is important to focus on the possible associations between body image and broader aspects of breast awareness, as opposed to BSE alone.

Here, we examined the association between breast size dissatisfaction and frequency of BSE, as well as confidence in detecting breast change and delay in seeing a doctor following breast change detection, in British women. Although size represents only one dimension in which women may experience dissatisfaction with their breasts, it is perhaps the most important of these dimensions in terms of women's corporeal experiences (see Swami, Cavelti, Taylor, & Tovée, 2014). To our knowledge, this is the first study to directly examine the association between breast size dissatisfaction and frequency of BSE using a quantitative design. In addition, we also included a measure of body dissatisfaction to examine its predictive utility relative to breast size dissatisfaction. Given evidence of a linear relationship between body mass index (BMI) and less frequent mammogram screening (e.g., Cohen et al., 2008), we also measured participants' self-reported BMI. As a preliminary hypothesis, we expected that greater breast size dissatisfaction, but not body dissatisfaction or BMI, would be significantly associated with

lower frequency of BSE, lower confidence detecting breast change, and greater delay in seeing a doctor following detection of breast change.

## 2. Method

### 2.1. Participants

The sample for this study consisted of 384 women, all of whom were UK citizens. Participants ranged in age from 18 to 76 years ( $M=38.10$ ,  $SD=11.64$ ) and in self-reported BMI from 14.70 to 46.99 kg/m<sup>2</sup> ( $M=27.01$ ,  $SD=5.96$ ). Most participants self-reported their ethnicity as being British White (91.4%), while 2.9% were British Asian, and the remainder were of other ancestry. The majority of participants self-reported their sexual orientation as heterosexual (92.4%), while 5.2% said they were bisexual, 2.1% were lesbians, and 0.3% were unsure. In terms of educational qualifications, 26.5% had completed their General Certificate of Secondary Education (GCSEs), 26.0% had obtained an Advanced-Level (A-Level) certificate, 30.2% had an undergraduate degree, 15.4% had a postgraduate degree, 2.3% were in full-time higher education, and the remainder had some other qualification.

### 2.2. Measures

#### 2.2.1. Breast size dissatisfaction

To measure breast size dissatisfaction, we used the Breast Size Dissatisfaction Scale (BSRS; Swami et al., 2014). This is a figural rating scale consisting of 14 computer-generated images of women with increasing breast size. All images were presented in greyscale and without the appearance of facial features. Participants were asked to rate the image that most closely matched their current breast size and the image they would most like to possess, with responses made on a 14-point scale (1 = Figure with the smallest breast size, 14 = Figure with the largest breast size). A measure of breast size dissatisfaction was computed as the absolute difference between current and ideal breast size ratings, such that higher scores reflect greater breast size dissatisfaction. Scores derived from the BSRS have been shown to have good construct validity, acceptable test-retest reliability up to 3 months, and adequate patterns of convergent validity in British women (Swami et al., 2014).

#### 2.2.2. Body dissatisfaction

We included the 9-item Body Dissatisfaction subscale of the Eating Disorders Inventory-3 (EDI-3-BD; Garner, 2004), which measures dissatisfaction with various body parts (sample item: "I think that my stomach is too big"). Items were rated on a 5-point Likert-type scale, ranging from 1 (*Never*) to 5 (*Always*), and an overall score was computed as the mean of all items. Higher scores indicate greater body dissatisfaction. Scores on this subscale of the EDI-3 have good psychometric properties, including adequate internal consistency and indices of validity, in adult women (Garner, 2004). In this study, Cronbach's  $\alpha$  for the EDI-3-BD was .76.

#### 2.2.3. Breast self-examination frequency

We used the BSE frequency item from the Breast Module of the Cancer Awareness Measure (BCAM; Linsell et al., 2010), a validated, self-reported measure of multiple domains of breast cancer awareness with adequate construct validity and test-retest reliability up to two weeks. The item was: "How often do you check your breast?" with responses made on a 4-point scale (1 = *Rarely or never*, 2 = *At least once every six months*, 3 = *At least once a month*, 4 = *At least once a week*). Although the National Health Service (2015) does not provide firm recommendations on the frequency with which women should self-examine their breasts, Linsell et al. (2010) suggested

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