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Relationship of Body Image to Breast and Skin-Self Examination Intentions and Behaviors

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Abstract

Breast self-examinations (BSE) and skin self-examinations (SSE) represent cost-effective and time-efficient approaches to cancer detections. Given their utility, it is important to determine who is likely to perform these behaviors regularly and why. Because BSE and SSE require close examination of one's body, women who are less satisfied and less comfortable with their bodies may perform these behaviors less often. This study sought to determine if a relationship exists between body image and BSE and SSE behaviors and intentions. Ninety-three women completed measures assessing body image, past performance of and future intentions to perform BSE and SSE. Results indicated that body image was related to past performance of SSE. Having greater satisfaction with overall appearance and evaluating oneself as more attractive were related to having performed SSE more frequently in the past year. Future research should further examine this relationship utilizing longitudinal designs and more diverse populations.

Detection of cancer in its earlier stages may translate to increased survival (Etzioni et al., 2003; Weinstock et al., 2007). In addition to screening measures performed by a medical professional, there have been efforts to encourage the public to engage in regular self-screening. Two self-examination behaviors potentially effective in detecting cancer early are breast self-exams (BSE) and skin self-exams (SSE).

To perform BSE correctly, women should apply various forms of pressure in circular motions over their breasts while lying down (American Cancer Society, 2007a). In addition, while standing with their hands on their hips, women should examine their breasts in the mirror for any visual changes. Performing BSE regularly allows women to become familiar with their own breasts and can be considered a cost effective, time-efficient method to detect changes in breast tissue (Chouliara, Papadioti-Athanasiou, Power, & Swanson, 2004). Despite these advantages, recent findings indicate that only about one-third of women perform BSE regularly (Elmore, Armstrong, Lehman, & Fletcher, 2005).

To perform SSE correctly, an individual should stand in front of a full-length mirror and carefully inspect all areas of the skin, paying particular attention to all marks (American Cancer Society, 2007b). To help examine hard-to-see regions of the body, experts

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recommend using a hand-held mirror or having a friend or family member check one's skin (American Cancer Society, 2007b). The importance of performing SSE is highlighted by the fact that the most common way in which skin cancer is currently detected is through self-examination (Oliveria et al., 2004). Similar to BSE, SSE is considered to be a cost-effective and time efficient method for detecting skin cancer (Muhn, From, & Glied, 2000). Despite the potential benefits of practicing SSE, research suggests that only about nine percent of the population performs the exam regularly (Weinstock et al., 2007).

Variables consistently found to be related to past practice of BSE and SSE include positive attitudes towards the exams and perceived self-efficacy in performing the exams (Luszczynska & Schwarzer, 2003; Misovich, Martinez, Fisher, Bryan, & Catapano, 2003; Robinson, Fisher, & Turrisi, 2002). Several studies indicate that more positive attitudes and greater self-efficacy also predict stronger future intentions to practice the exams (Calnan & Rutter, 1988; Janda et al., 2004; McCaul, Sandgren, O'Neill, & Hinsz, 1993; Moore, Barling, & Hood, 1998). Another factor that may affect whether BSE and SSE are performed is body image. While no literature exists examining these relationships, previous research has shown that body image is related to other health behaviors. For example, research has shown that women who exercise have lower body satisfaction than those who do not exercise (Davis & Cowles, 1991; Lowery et al., 2005).

Faced with performing self-exams that involve manually and visually scrutinizing one's body and familiarizing oneself with any potential abnormalities, a woman who evaluates her appearance more negatively and is less satisfied with her physical appearance may engage in avoidance and not practice the behavior, thus eliminating the threat to her body image. Additionally, for SSE, it is recommended that she consider having someone else examine hard-to-see regions of the body. If a woman is dissatisfied with her overall appearance, she may also be less likely to want to have someone else view it.

Based on these considerations, the current study tested the hypothesis that a more positive body image would be related to having engaged in BSE and SSE more frequently in the past year and intending to perform the self-exams more frequently in the coming year. It was also hypothesized that greater satisfaction with one's breasts would be related to having performed BSE more frequently in the past year and to intending to perform BSE more frequently in the coming year.

Method

Participants

Participants were women enrolled as a non-cancer comparison group in a study of fatigue in breast cancer survivors treated at the Moffitt Cancer Center in Tampa, Florida (Jacobsen et al., 2007). Eligibility criteria were: (1) age ≥ 18 years; (2) no discernable psychiatric or neurological disorder that would interfere with participation; (3) ability to speak and read standard English; (4) no history of cancer or other potentially life-threatening diseases; and (5) no history of a chronic disease or disorder in which fatigue is a prominent symptom.

Participants were 28 to 82 years old ($M = 56.91$; $SD = 9.59$) and had a body mass index (BMI) that ranged from 17.5 to 44.6 ($M = 28.76$; $SD = 6.05$). The majority had completed at least some college (74%), were married (70%), had an annual household income greater than $40,000 (75%), were Caucasian (96%), and were in menopause (69%).

Procedure

To obtain the current sample, the investigators purchased contact lists from Marketing Systems Group, Inc (Fort Washington, PA). These lists were used to contact randomly selected females who were of similar age (i.e., within five years) and who resided within the same zip code as the patient to whom they were matched. Potential participants were mailed an introductory letter providing basic information about the study; a research assistant subsequently contacted them by telephone approximately 10 days after the letter was mailed out. If eligible and interested, an appointment was set up for the participant to come to Moffitt Cancer Center to provide written informed consent and complete an assessment. Prior to the appointment, the participant was mailed a packet of questionnaires that she was asked to complete and bring with her to the in-person assessment. Participants completed other measures not relevant to this report at the in-person assessment. For their participation in the larger study, participants were paid $100. The study procedures were approved by the Institutional Review Boards of the Moffitt Cancer Center and the University of South Florida.

Eight-hundred-forty letters were mailed out to potential participants. Of these individuals, 155 were ineligible and 239 could not be reached. Of the 446 women who were eligible, 31% ($n = 139$) agreed to participate and 21% ($n = 93$) completed the packet of questionnaires. Women who completed the study were significantly younger than women who did not agree to participate or failed to return questionnaire packets ($t = 3.40$, $p < .05$).

Measures

Demographic information—The following variables were assessed using a standard self-report questionnaire: date of birth, race, marital status, income (U.S. dollars), education, height, weight, and menopausal status.

Body image—The Multidimensional Body-Self Relations Questionnaire (MBSRQ; Cash, 1994) is a 69-item self-report measure designed to assess the self-attitudinal aspects of body image. Given that this study was primarily interested in overall body image and site-specific satisfaction, analyses were conducted only on the Appearance Evaluation subscale, Appearance Orientation subscale, and the Body Areas Satisfaction Scale (BASS). The Appearance Evaluation subscale is a measure of one's satisfaction with one's looks, while the Appearance Orientation subscale is a measure of one's investment in her appearance. The BASS assesses overall satisfaction with specific body parts and with one's overall appearance. Because it was hypothesized that satisfaction with one's breasts would be related to BSE behavior and intention, an additional item was added to the BASS assessing satisfaction with breast appearance. As used in this study, the expanded BASS yielded two measures: an item assessing satisfaction with one's breasts and the average scale score. Cronbach alpha coefficients for the current sample were acceptable for the Appearance

Evaluation subscale (α = .86), the Appearance Orientation subscale (α = .85), and the average BASS score (α = .85).

Self-exam behaviors—Participants indicated how often they performed BSE for the detection of breast cancer in the past year using a 4-point scale (0 "never," 1 "less than once a month," 2 "about once a month," 3 "more than once a month"). For SSE, participants were first provided with a definition of SSE as "examining your own skin or asking a friend or family member to help you carefully examine your skin for growths or changes in spots or moles on all of your exposed and unexposed body parts." They then indicated how often they had performed SSE in the past year using the same 4-point rating scale described above. These items are adapted from those used in prior studies of BSE (Chouliara et al., 2004) and SSE (Berwick, Begg, Fine, Roush, & Barnhill, 1996).

Self-exam intentions—To determine future intentions, participants indicated how often they planned to perform BSE and SSE in the next year using a 6-point scale (0 "never," 1 "once," 2 " two to five times," 3 "six to eleven times," 4 "once a month," 5 "more than once a month"). These items are adapted from those used in prior studies of BSE (Luszczynska & Schwarzer, 2003) and SSE (Janda et al., 2004).

Results

BSE and SSE Behaviors

Nineteen percent of participants reported not having performed BSE at all in the past year, 40% reported performing BSE less than once a month, 38% reported performing BSE about once per month, and 3% reported performing BSE more than once per month. Nine percent of participants reported no intention to perform BSE, 5% reported an intention to perform BSE once, 14% reported an intention to perform BSE two to five times, 23% reported an intention to perform BSE six to 11 times, 48% reported an intention to perform BSE 12 times (i.e., monthly), and 1% reported an intention to perform BSE more than 12 times.

Thirty-five percent of participants reported not having performed SSE at all in the past year, 40% reported performing SSE less than once per month, 14% reported performing SSE about once per month, and 11% reported performing SSE more than once per month. Ten percent reported no intention to perform SSE, 15% reported an intention to perform SSE once, 22% reported an intention to perform SSE two to five times, 14% reported an intent to perform SSE six to 11 times, 27% reported an intention to perform SSE 12 times (i.e., monthly), and 12% reported an intention to perform SSE more than 12 times.

Relationship of Demographic Characteristics to BSE, SSE and Body Image

Exploratory correlational analyses were conducted to examine the relationship between demographic characteristics and BSE and SSE behaviors and intentions (see Table 1). Age and income were significantly related to SSE intentions, with being younger and having greater income associated with less intention to perform SSE in the future. Exploratory correlational analyses were also conducted to examine the relationship between demographic characteristics and body image. Age and menopausal status were both

significantly related to Appearance Orientation ($p < .05$), with being older and being menopausal related to a greater investment in one's appearance. In addition, BMI was significantly related to Appearance Evaluation and the average BASS score ($p < .05$), with greater BMI related to having more negative ratings of physical appearance and body satisfaction.

Relationship of MBSRQ Subscales to Performance of BSE and SSE

Correlational analyses were conducted to test hypotheses that scores on the Appearance Evaluation and Appearance Orientation subscales would be positively related to past BSE and SSE behavior and future BSE and SSE intentions (see Table 2). Inconsistent with predictions, the Appearance Evaluation and Appearance Orientation subscales were not significantly correlated with BSE behavior or intentions. Likewise, the same subscales did not demonstrate hypothesized relationships with SSE intentions. However, as hypothesized, the Appearance Evaluation subscale was significantly correlated with past SSE behavior. Specifically, having a more positive opinion of one's physical attractiveness was related to having performed SSE more frequently. Inconsistent with predictions, the Appearance Orientation subscale was not significantly related to SSE behavior.

Relationship of BASS Scores to Performance of BSE and SSE

Correlational analyses were conducted to test the hypotheses that the average BASS score and the score on the item assessing satisfaction with one's breasts would be positively related to measures of past BSE behavior and future BSE intentions. Correlational analyses were also conducted to test the hypotheses that the average BASS score would be positively related to measures of past SSE behavior and future SSE intentions (see Table 2). No significant relationships were found between any of the BASS scores and measures of BSE behavior or intentions. However, as predicted, the average BASS score was significantly correlated with past SSE behavior. Specifically, having greater satisfaction with one's overall appearance, as assessed by the overall composite score, was related to having performed SSE more frequently. Inconsistent with predictions, the average BASS score was not significantly correlated with SSE intentions.

Multiple Regression Analysis of Past SSE Behavior

Based on results of correlational analyses, stepwise multiple regression analysis was conducted to evaluate the relative contributions of the Appearance Evaluation subscale and the BASS average score to explained variance in SSE behavior. Results indicated that the Appearance Evaluation subscale accounted for 6% ($p < .05$) of the variance in SSE behavior; the BASS average score did not account for additional significant variability.

Based on results of correlational analyses, stepwise multiple regression analysis was also conducted to evaluate the relative contributions of age and income to explained variance in SSE intentions. Results indicated that age accounted for 5% ($p < .05$) of the variance and that income did not account for additional significant variability.

Discussion

The current study examined the relationship of body image to women's past practice of BSE and SSE and their intention to perform these self-exam behaviors in the future. Contrary to what was expected, body image was not significantly related to women's BSE behavior or intentions. Also contrary to expectations, body image was not significantly related to women's intention to perform SSE. However, as hypothesized, women with a more positive body image, as measured by the Appearance Evaluation subscale and the BASS, had performed SSE more frequently in the past year. Regression analysis suggested that these two body image measures overlapped in their ability to explain variance in SSE behavior. After accounting for 6% of the variance in SSE behavior with the Appearance Evaluation subscale, the BASS average score did not account for additional significant variability.

A thorough review of the literature identified no prior studies examining relationships between body image and BSE or SSE behavior and intentions. Thus, the current study appears to be the first to examine these relationships.

Findings from the present study showing that body image was related to performance of SSE but not BSE suggest there is something different about SSE that allows it be influenced by body image. One possible explanation is that SSE requires a woman to visually examine her entire body while standing in front of a full-length mirror. Additionally, it is recommended that a person have a partner or spouse inspect her hard-to-see regions of the body (American Cancer Society, 2007b). In contrast, BSE requires examination of only a small region of the body and is conducted mostly through tactile examination rather than visual inspection; it is also important to note that a BSE does not require someone else to examine one's body.

Several limitations of the current study should be noted. First, the use of a cross-sectional design precludes the ability to model temporal or causal relationships between body image and self-exam behaviors. Second, the accuracy of the retrospective reports we obtained of past self-examination behaviors is unknown. Third, there was a low response rate, thereby introducing a possible bias into the findings. Fourth, older women were less likely to participate in the study which may also introduce a bias into the findings. Fifth, the study was conducted with women who were predominantly older, non-Hispanic, and Caucasian; this limits the generalizability of the findings.

The current findings raise the possibility that an intervention to increase body satisfaction in women may successfully increase the rates at which they perform SSE. Several studies have identified interventions that increase women's body image and overall satisfaction. For example, research has demonstrated the success of a cognitive dissonance induction strategy in decreasing body dissatisfaction (Roehrig, Thompson, Brannick, & van den Berg, 2006; Stice, Chase, Stormer & Appel, 2001); this type of intervention involves the use of psycho-educational components and a counter-attitudinal advocacy strategy in which the participant learns to argue against the thin-ideal. Future research should investigate the use of similar interventions as a way of increasing women's body satisfaction, thereby increasing their willingness to perform SSE.

Acknowledgments

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Table 1

Correlational Analyses of Demographic Variables with BSE and SSE Behaviors and Intentions

	BSE past behavior	BSE intentions	SSE past behavior	SSE intentions
Age	.09	.07	.09	.23[*]
Education	-.18	-.12	.18	.10
Marital Status	.11	.15	-.10	-.13
Menopausal status	.05	.07	-.13	.04
Income	-.12	-.07	-.06	-.21[*]
Body Mass Index	.10	.15	-.10	.02
Race	-.07	-.08	.00	.06

[*]
p < .05

Table 2

Correlational Analyses of MBSRQ Subscales with Self-Screening Behaviors

	Appearance Evaluation	Appearance Orientation	BASS: Breasts	BASS: Overall Appearance	BASS: Average Score
BSE in past year	.08	.06	.03	.12	.05
BSE intention	-.10	.05	.00	-.08	-.01
SSE in past year	.25*	.03	N/A	.15	.22*
SSE intention	.15	.13	N/A	.05	.13

*
p < .05