Published in final edited form as:
J Sex Res. 1991 ; 28(3): 457–477. doi:10.1080/00224499109551619.

Body Image for Women: Conceptualization, Assessment, and a Test of its Importance to Sexual Dysfunction and Medical Illness

BARBARA L. ANDERSEN, Ph.D. and
Ohio State University

JOSEPH LeGRAND, M.A.
University of Iowa

Abstract

The content and valence of women's body image attitudes, general and enduring positive or negative feelings about the body, are studied with psychometric analyses of measures and contrasted groups. Data from two frequently used measures (Body Image Scale, Derogatis & Melisaratos, 1979; Body Satisfaction Scale, Berscheid, Walster & Bohrnstedt, 1973) provided an evaluation of the construct and the assessment of body image. Two studies are provided. The construct analyses suggest two contents for body attitude measures: a general factor of body, facial, and sexual (genital and breast) items, and a second factor assessing weight and/or its body correlates—the hips, thighs, and buttocks. Also, a method factor, a response style of negativity, may be important. Body image attitudes are correlated with some conceptually relevant criteria, such as interest in engaging in sexual activity; however, these relationships do not appear sufficiently strong to predict behavior, such as the occurrence or resolution of sexual dysfunction. Generalized body image disturbance as currently conceptualized and assessed may be difficult to document, particularly when item content and response styles are considered.

Early conceptualizations of body image included deviant perceptions, feelings, and beliefs concerning the body. The construct was hypothesized as relevant to psychopathology (i.e., linked to perceptual aberration in schizophrenia; see Chapman, Chapman, & Raulin, 1978; depression; see Noles, Cash, & Winstead, 1985; and, anorexia and bulimia nervosa; see Williamson, Davis, Goreczny, & Blouin, 1989), physical attractiveness (Berscheid, Walster, & Bohrnstedt, 1973), sexual dysfunction (Derogatis & Melisaratos, 1979), and physical illness (Kriss & Kraemer, 1986). Early assessments included indirect strategies, such as figure-drawing (Goodenough, 1928), special scoring systems for the Rorschach (e.g., barrier and penetration scores; Fisher and Cleveland, 1958), perceptual distortion tasks (e.g., waist estimation; body-distorting mirror assessments; Traub, Olson, Orbach, & Cardone, 1967), and, later, questionnaire assessments including measures of body image aberration (Chapman, Chapman, & Raulin, 1978), body size ratings (Williamson et al., 1985), and body attitudes (see Mayer & Eisenberg, 1982, for a review).

Despite empirical efforts and theoretical discussions (e.g., Fisher & Cleveland, 1958), body image remains ill defined. We view women's body images as attitudes—general and enduring positive or negative feelings about the body. We, like others (e.g., Derogatis & Melisaratos, 1979), anticipate that body attitudes should be related to some major life areas, such as sexual functioning, but be conceptually distinct from others (e.g., general psychological adjustment, social functioning, occupational achievement).

Correspondence concerning this article should be sent to Barbara L. Andersen, Department of Psychology, 1885 Neil Avenue, Ohio State University, Columbus, Ohio 43210-1222.

We were interested in examining women's body attitudes and specifying both their content and valence (positive versus negative). Current assessment reviews note two general and independent contents—perceptions of the physical self (or specifically body size estimations) and attitudes toward body parts (Cash, 1989; Gleghorn, Penner, Posers, & Schulman, 1987; Ruff & Barrios, 1986) of body image measures. It is the latter category, body part attitude measures, which the present research examines. Body attitudes of both genders have been assessed by using attitude scales paired to specific body part items (e.g., a Likert-type satisfaction scale used for rating the face, arms, hands, etc.) or statements about the body ("I have attractive legs.").

To specify the content and valence of body image attitudes, we studied two frequently used scales, the Body Image Scale from the Derogatis Sexual Functioning Inventory (Derogatis and Melisaratos, 1979) and the Body Satisfaction Scale of Berscheid, Walster, and Bohrnstedt (1973). Both are similar to measures of other investigators [e.g., Kurtz and Hirt's (1970) scale and the body parts portion of the Secord and Jourard's (1953) measure]. To examine these measures, two classic research approaches were used. First, psychometric study clarified the construct(s) tapped by the measures, including studies of the internal structure, convergent and discriminant validity, change over occasions, and studies of process (Cronbach &Meehl, 1955). Second, we contrasted groups expected to differ in their body attitudes. Women potentially vulnerable to significant body image disruption—women who had gynecologic disease and who underwent medical treatment which removed or altered their internal or external genitals—were studied. For the majority of the latter, significant sexual disruption resulted, and for some, loss of ovarian functioning and premature menopause also occurred. (For a complete report of the latter outcomes, consult Andersen, Anderson, & deProsse, 1989a, and Andersen, Turnquist, LaPolla, and Turner, 1988). For decades, these specific circumstances have been hypothesized as producing body image disruption (see Drellich & Bieber, 1958, for a historical and Derogatis, 1980, for contemporary discussions), not only due to the direct alteration of body structures but because of the specific change to aspects which define the gender or "femaleness" of a woman. Comparison of these clinical groups was made with the responses of normal, healthy women and male sexual partners.

Two studies are reported. For Study 1, the Body Image Scale of the Derogatis Sexual Functioning Inventory (Derogatis & Melisaratos, 1979) was administered in a prospective longitudinal design to two groups: normal healthy women and women to be treated for benign or malignant gynecologic disease (e.g., uterine fibroid or cervical cancer). Prior retrospective research with gynecologic cancer and healthy women suggested significant body image disruption for the women with cancer (Andersen & Jochimsen, 1985). Study II examines the shortened form of the Berscheid, Walster, and Bohrnstedt (1973) measure of body satisfaction. As a conceptual replication of the previous clinical sample, the measure was administered to women who had undergone treatment for premalignant external (rather than internal) genital cancer. Medical treatments produced genital disfigurement or asymmetry (e.g., one of the labia might have been removed). Also, sexual partners of the women provided parallel evaluations of their female partner's body; it has been suggested that the husband's emotional response to body disfigurement following cancer is crucial to the woman's emotional response to the changes which have occurred and the couple's sexual adjustment (e.g., Wellisch, Jamison, & Pasnau, 1978). Assessment of other major life areas was also included in both studies to provide measures of convergent (e.g., sexual functioning) and discriminant (e.g., mood, marital adjustment) validity. In combination, the two studies provide an analysis of body image attitudes with psychometric study of measures and "natural experiments" with clinical samples vulnerable to body image disruption from the medical treatment, sexual dysfunction, or the combination of factors.

STUDY I

Method

Subjects

Gynecologic disease: Sixty-six women diagnosed 1–2 weeks previously with malignant or benign disease participated. For those with cancer (n = 48), all were undergoing tumor workup prior to treatment for early stage (I or 11) cervical, endometrial, or ovarian disease. All were scheduled for radical surgery (e.g., radical hysterectomy), radiotherapy (e.g., external beam plus intracavitary cesium), or combination therapy. For those with benign disease (n = 18), all were undergoing a preoperative evaluation and were scheduled for surgery (e.g., simple hysterectomy). A demographic analysis of the group revealed that the mean age was 41.5 years (range = 22–65), that 73% of the sample was premenopausal, that the length of time with the current sexual partner was 16.1 years (range (range 0–47), and that 100% of the sample was white.

Healthy: Fifty-seven women seeking routine gynecologic examinations served as subjects. A demographic analysis of the group revealed that the mean age was 41.0 years (range = 24–61), that 75% of the sample was premenopausal, and that the length of time with the current sexual partner was 16.3 years (range 1–42), and that 100% of the sample was white.

Measures—The Body Image Scale (BIS) from the Derogatis Sexual Functioning Inventory (DSFI; Derogatis & Melisaratos, 1979) was used. Fifteen items are rated on a 5-point scale, from 0 (not at all) to 4 (extremely), as to how the respondent views her body. Higher scores indicate more a pessimistic/unfavorable body attitude.

To provide further information on the construct and criterion validity of the BIS, data from a structured interview assessing three areas of sexual functioning (i.e., the range and frequency of sexual behavior; sexual response cycle responding, including desire, excitement, orgasm and resolution; and the occurrence of sexual dysfunctions diagnoses), emotional distress, and marital adjustment were included. A factor analysis of the sexual data had supported the reliability and validity of the groupings presented below (see Andersen, Anderson, & deProsse, 1989a). Reliability data are provided. Pearson correlations above .26 are statistically significant (p = .05), and, thus, all the reliabilities for the supplementary measures are significant. The interval for test-retest reliability was four months.

Sexual behavior: Four measures were used: (a–c) Subjects provided the frequencies of sexual intercourse, partner kissing, and sexual fantasy during the previous month. Test-retest reliabilities were .67, .76, and .73, respectively, (d) The Current Sexual Activities Scale from the Derogatis Sexual Functioning Inventory (DSFI; Derogatis & Melisaratos, 1979) provided a measure of the range of sexual activity. The scale includes 21 heterosexual sexual behaviors, and women endorsed each activity that had occurred in the last month. Internal consistency (Kuder-Richardson) was .88 and test-retest .72.

Sexual desire: Three measures were used: (a) Signs: Subjects were asked the presence or absence of five desire signs (e.g., no interest in initiating sexual activity, refusal of intercourse/foreplay) noted by Kaplan (1979) and Masters and Johnson (1966). A total score from 0–5 was used. Internal consistency was .75. (b–c) Subject and clinical evaluator judgments of the presence of a problem: A 5-point rating scale ranging from 0 (no problem) to 4 (always a problem) was used for the subject to rate the frequency of current desire phase difficulty. The same rating scale was used by the evaluator to judge the likelihood and

magnitude of a desire phase difficulty for the subject. The correlation between the two judgments was .87.

Parallel forms of scales (b–c) were also used for ratings of the subject's judgment of the presence of a problem and for the evaluator's judgment of a problem for the excitement, orgasm, and resolution phases (see below).

Sexual excitement: Four measures were used: (a) Signs: Subjects were asked their awareness of six excitement signs (e.g., breast enlargement and/or nipple erection, sex flush, vaginal lubrication) noted by Masters and Johnson (1966) and Hoon and Hoon (1978). A total score from 0 to 6 was used. Internal consistency was .57. (b) Sexual arousal: The Sexual Arousability Inventory (Hoon, Hoon, & Wincze, 1976) was used, and it includes 28 sexual/erotic experiences for which subjects rate each activity from -1 (adverse affect) to 5 (always sexual arousal). The items are summed for a total score. Test-retest reliability was .90 and Kuder-Richardson internal consistency was .93. (c–d) Subject and Evaluator judgments of the presence of a problem: The correlation between the two judgments was .95.

Orgasm: Four measures were used: (a) Signs: Subjects were asked their awareness of five orgasm signs (e.g., awareness of vaginal contractions, change in respiration) as noted by Masters and Johnson (1966) and Newcomb and Bentler (1983). A total score from 0 to 5 was used. Internal consistency was .51. (b) Frequency of orgasm: This was the subject's current estimation in percentage of occasions attempted during intercourse. Test-retest reliability was .76. (c–d) Subject and Evaluator judgments of the presence of a problem: The correlation between the two judgments was .97.

Resolution: Four measures were used: (a) Signs: Subjects were asked their awareness of six resolution signs (e.g., general muscular relaxation, feelings of general release) noted by Masters and Johnson (1966). A total score from 0 to 6 was used. Internal consistency was .60. (b) Global sexual evaluation: A 9-point scale ranging from 0 (could not be worse) to 8 (could not be better) with 4 (adequate) as the midpoint was used for subjects to rate their view of their sexual life during the resolution period following intercourse. Test-retest reliability was .62. (c–d) Subject and Evaluator judgments of the presence of a problem: The correlation between the two judgments was .84.

Diagnosis of sexual dysfunction: The presence/absence of four sexual dysfunctions (DSM-III; American Psychiatric Association, 1980) were noted by the evaluator: Inhibited Sexual Desire, Inhibited Sexual Excitement, Inhibited Orgasm, and Dyspareunia. For a diagnosis, reports of both behavioral disruption and accompanying significant distress from the woman were needed. Intrarater reliabilities were calculated using a tetrachoric correlation model and were: Desire (.75), Excitement (.61), Orgasm (.89), and Dyspareunia (.78).

Emotional distress: The Profile of Mood States (POMS; McNair, Lorr, & Droppleman, 1971) is a 65-item inventory which asks the subject how she has felt in the past week and yields six mood subscales: Anxiety, Depression, Anger, Confusion, Vigor, and Fatigue, and a summary scale of Total Mood Disturbance. Internal consistency for the scales ranged from .83 to .93 with a mean of .90.

Marital adjustment: A modified version (four items assessing sexual interactions omitted) of the 32-item Dyadic Adjustment Scale (Spanier, 1976) was used. Internal consistency reliability was .91.

Procedure—All subjects were outpatients in the Department of Obstetrics-Gynecology at a university hospital during an 18-month period and participants in a clinical research program examining the etiology of sexual dysfunction following physical illness (see Andersen, Anderson, & deProsse, 1989a & b). Women with disease were consecutive referrals for the evaluation and treatment. Healthy women with an age (± 5 years) and menopausal status comparable to women in the disease group were recruited prior to their clinic visit.

All data were obtained in the context of a structured interview conducted by a female evaluator/interviewer in the outpatient clinic. The initial assessment occurred during the tumor/disease workup prior to treatment for the disease patients and within 1 week (usually on the same day) for the healthy group. Reassessments at 4-, 8-, and 12-months post-treatment or post-appointment documented current functioning.

RESULTS AND DISCUSSION

Validity

Content—The strategy used to generate items for the BIS was not described (Derogatis & Melisaratos, 1979); however, the authors note that the scale "consists of 15 items—10 common items plus 5 unique items;" the former (Items 1–10) include "general body attributes" and the latter (Items 11–15) "focus more specifically on satisfaction with genital attributes." Rather than general body and genital domains, the factor analyses described below indicate a statistical grouping of two other contents (i.e., judgments of body "attractiveness" and weight) and a method factor.

Construct—Three analyses were conducted. The first was a factor analysis using all 123 subjects' BIS responses at the initial assessment. The polychoric correlation matrix (Olsson, 1979) was used for a three-factor principle-components analysis; this was then followed with a varimax rotation. The process of choosing the number of factors to extract included the minimum average partial (MAP) correlation procedure, scree test, and eigenvalues greater than unity. In combination, these tests were inconclusive, estimating the number of factors from one to four. Each solution was inspected, and the three-factor solution was selected due to its greatest conceptual clarity. The solution, factor labels, and percentage of variance accounted for are (1) Body attractiveness (38.3%); (2) Reverse scored/Negatively worded items (27.8%); and (3) Weight (21.2%). Three items (Item 3: I enjoy being seen in a bathing suit; Item 5: I would be embarrassed to be seen by a lover; and Item 8: I am too tall) had loadings less than .4 and were omitted from the remaining analyses. Table I displays the item groupings and the factor loadings. The total variance accounted for by the solution was 87%.

To examine the stability of the factor structure, coefficients of congruence (i.e., a measure of the repeatability of the solution; Harmon, 1976) were calculated for the BIS data obtained at the initial and the 4-month assessments. Coefficients can range from −1 to +1, with a value close to zero indicating no similarity between the factors. All factor patterns had three factors extracted from the polychoric correlation matrix for the principal-components procedure, followed by a varimax rotation. The comparisons of interest were those between Groups (Disease vs. Healthy) and Time (initial vs. 4-month assessment for the Disease and Healthy groups). These data are displayed in Table 2. For the Group analysis, the coefficients for Factors 1 and 3 evidenced the greatest stability. For the Time analyses, slightly greater stability could have been expected for the factor solutions for the healthy group than the disease group, yet the opposite pattern was found for Factors 1 and 3. When the three sets of coefficients are examined together, only Factor 1 (Body Attractiveness)

consistently evidenced any stability and, thus, would have the greatest likelihood of replication with other subject samples.

In summary, the factor analytic data for the first construct analysis indicates that the BIS includes two content domains. The first (Factor 1) is women's judgments of attractiveness for the body and specific parts (face, legs, and breasts). These items may be statistically similar, in part, because the word "attractive" was used in four of the five items; however, the specific items have been significantly correlated with judgments of overall attractiveness in other studies (Bohrnstedt, 1977). Secondly, the measure assesses women's judgments of their weight (Factor 3), an aspect which has historically been important to women's judgments of their bodies and their appearance (e.g., Berscheid, Walster, & Bohrnstedt, 1972; Jourard & Secord, 1955). The remaining items (Factor 2) appear to be statistically linked by method factors, i.e., negative item wording and reverse scoring, as there is no content similarity across the items other than a tone of dissatisfaction, contrary to that of Factor 1. Other data indicate that women are inclined to evaluate their body attributes more negatively than men evaluate theirs [see Bohrnstedt (1977) or Franzoi & Herzog (1987) for a discussion]. This suggests an interaction between an individual difference variable and a method factor such that, for women, negatively worded body image items may be subject to greater method variance (and less content relevance) than positively worded items.

The second construct validity effort examined the change in the BIS over occasions. While stability of test scores is relevant to construct validation (see test-retest reliability below), the retest after an intervention condition (such as that studied here) is more powerful (Cronbach & Meehl, 1955). As body image is hypothesized to be adversely affected by disease/illness, BIS scores for the disease group from the initial to the 4-month assessment would be expected to decline, whereas no change would be expected for the healthy group. For each subject, three factor scores for the initial assessment were obtained, with each score comprising the sum of items for that factor. A 2 (Group: Disease vs. Healthy) × 2 (Time: Initial vs. 4-month) multivariate analysis of variance (MANOVA) using the three factors was conducted. The Group × Time interaction was of primary importance, but was found to be not significant ($p = .29$). In view of these results, a one-way MANOVA for the factor of Time (Initial vs. 4-months) for the disease group only was conducted using the BIS factor scores to test if medical treatment, per se, would exert any effect. This MANOVA approached significance, $F(3, 61) = 2.56$, $p = .06$. In the interest of gleaning information, follow-up ANOVA's for each fector were examined and only that for Factor 2 was significant, $F(1, 63) = 4.07$, $p = .05$. Inspection of the mean values indicated they were in the appropriate direction, with the pretreatment (initial) mean of 8.84 and the post-treatment (4-month) mean of 9.83. In view of the above discussion on individual differences and method variance, these data appear to indicate that the only change in body image detected by the BIS was that the experience of gynecologic disease and treatment may have slightly enhanced the women's pessimistic evaluations of their bodies, but only when negative/reverse score item wording was used.

The third construct validity effort tested convergent and discriminant validity by examining the correlation of the BIS with conceptually related (e.g., sexual functioning measures) and unrelated (i.e., mood, marital adjustment) measures. Pearson product moment correlations between variables for all subjects at the initial assessment were calculated. These correlations were then corrected for attenuation (i.e., reliability estimates of each variable adjusted the correlation to correct for random measurement error) using internal consistency correlations or, if necessary, test-retest correlations. For the sexual behavior variables, the total BIS score was in the correct direction and significantly correlated with measure of the range of sexual activities and the frequency of sexual fantasy, −.25 and −.38, respectively, such that women with more negative image scores reported engaging in fewer sexual

activities and fantasizing about sexual activity less frequently. Correlations with the remaining variables, frequency of intercourse and kissing, were not significant. For the sexual response cycle variables, the correlations were in the correct direction and significant for each of the measures of sexual desire (e.g., desire symptoms, .41; woman's judgment of difficulty, .38), excitement (e.g., sexual arousability index, −.26; evaluator's judgment of difficulty, .49), and resolution (e.g., woman's judgment of difficulty, .49; global evaluation, −.36) phases was significant. There was no relationship to the orgasm phase variables (e.g., frequency of orgasm, .05; women's judgment, .03). As Factor 3 appeared to tap a dimension of "weight," separate correlations with the subject's actual weight and body mass were made and were in the expected direction, significant, and of larger magnitude (−.57 and .54, respectively) than the sexual measures. For conceptually unrelated measures, correlations with the POMS (.27) and the marital adjustment (−.26) measures were, contrary to prediction, significant. Taken together, these analyses reveal weaknesses and potential strengths of the BIS. The sexual data suggest that women with unfavorable evaluations of their bodies reported that they engaged in a restricted range of sexual activities (although similar frequencies of intercourse) and reported fewer satisfactory responses and more problems for the phases of sexual desire, excitement, and resolution than women who reported more favorable evaluations of their body. This is consistent with hypothesized relationships between body image and sexual functioning, as indicated by Derogatis and Melisaratos' (1979) inclusion of the BIS on the Sexual Functioning Inventory. However, an unfavorable body image is not necessarily consistent with transient emotional distress (as assessed here with the POMS) or overall marital dissatisfaction. Finally, the correlations of greatest magnitude were those of satisfaction with weight and actual weight.

Criterion—The significant correlations with the measures of sexual behavior and responsiveness described above provide suggestive evidence that body image may function as a moderator for sexual dysfunction. To examine this criterion question, two analyses were conducted. For the first, BIS scores of women who were diagnosed with at least one DSM-III sexual dysfunction at the 4-month assessment (37% of the entire sample) were contrasted with BIS scores of women who had no diagnoses at 4-months. There was no overall dysfunction effect ($p = .48$), indicating that women with initially low BIS scores were not more vulnerable to the subsequent occurrence of sexual dysfunction. For the second analysis, we tested BIS scores predicting the resolution of sexual dysfunction. For this analysis, only women with a dysfunction diagnosis at 4-months were considered. BIS scores of women for whom the dysfunction resolved (i.e., no dysfunction diagnosis at 8- or 12-months; 58% of the dysfunctional sample) were contrasted with BIS scores of the women who remained dysfunctional from 4-months to 8-or 12-months. Again, the t-test was not significant ($p = .85$). Thus, despite the correlations noted above, prospective BIS scores did not relate to the occurrence or resolution of sexual dysfunction.

Reliability

For an internal consistency analysis, the Kuder-Richardson (K-R) reliability estimate was used and found similar across comparisons: .74 for all groups at the initial assessment and .71 for the disease group and .73 for the healthy group at the 4-month assessment. These data indicate a moderate degree of homogeneity and are higher than the value (.58) reported by the test developers (Derogatis & Melisaratos, 1979). The longitudinal design provided for an analysis of stability. Lower correlations would be expected of the disease group from the initial to the post-treatment assessments than would be expected for the healthy group for the same periods. This pattern was not found, as the correlations with the initial and the 4-, 8-, and 12-month assessments for the disease group were .66, .66, and .68, respectively, and those for the healthy group were .67, .83, and .71, respectively. The data for the healthy group also illustrated that, with repeated administrations, there was some improvement in

the consistency of responding on the BIS (i.e., from .67 to .78 to .86) for successive 4-month assessments.

STUDY II

Method

Subjects

Gynecologic disease: One hundred thirty-four women who had been diagnosed, treated, and followed for in situ vulvar disease, a non-invasive premalignant condition, participated. Treatment had occurred from 1–10 years previously, and all women were currently disease free. Treatments had included laser (N = 17), wide excision of the lesion (N = 63), vulvectomy, which included removal of both labia and underlying fatty tissue (N = 28), or combination therapy (i.e., wide local excision and laser) (N = 26). Because of the high recurrence rate of this disease, sixty-three percent of the sample had only received treatment once, whereas recurrences and re-treatments occurred for the remainder. For the latter women, 19% of the total sample had one recurrence/treatment episode, 9% two, 4% three, 1% four, 2% five, and 1% nine. Subsequent treatments typically result in additional disfigurement. A demographic analysis revealed that the mean age was 45 years (range = 21–75), 64% of the sample was premenopausal, 65% of the sample was sexually active (i.e., intercourse or an equivalent activity had occurred at least once per month for the preceding six months), and 87% of the sample was white.

Sexual partners: One male sexual partner for 16 of the 64 sexually active subjects participated. A demographic analysis revealed that the mean age was 48 years (range = 34–77) and 95% of the sample was white.

Measures—A shortened form of the 25-item Body Satisfaction Scale (BSS; Berscheid, Walster, & Bohrnstedt, 1973) was used. An unpublished factor analysis of the measure (Bohrnstedt, 1977) had revealed five factors: face, extremities, mid-torso, breast, and genitals. Two items with the highest loadings were selected from the factors. Each item was rated on a 6-point scale ranging from 1 (extremely satisfied) to 6 (extremely dissatisfied). Women rated satisfaction with their own body and sexual partners rated satisfaction with the female partner's body. In each case, higher scores indicate greater body image dissatisfaction.

The sexual, emotional distress, and marital adjustment assessment described above was used, with the only modifications being that short forms of the Current Sexual Activities Scale (Andersen & Broffitt, 1988) and the Sexual Arousability Index (Andersen, Broffitt, Karlsson, & Turnquist, 1989) were used. Also, the extent of surgical disruption to the genitals from treatment was quantified. Using medical chart data describing the extent of disease and treatment, sixteen areas of the external genitalia were rated by the research staff for the presence/absence of disruption, and a total score of 1–16 was used (see Andersen, Turnquist, LaPolla, & Turner, 1988, for a complete description).

Procedure—All women were participants in a collaborative study of sexual functioning following in situ vulvar cancer (Andersen, Turnquist, LaPolla, & Turner, 1988; Andersen et al., in press), and they had been treated and followed at one of eight university/city hospitals (Universities of California-Los Angeles, Iowa, Michigan, Pittsburgh or South Florida; Indiana or Ohio State University; or Kaiser Permanente-Los Angeles).[1] Women were contacted by their physician and individually interviewed by the same female evaluator following the general procedures indicated for Study I. Participation of the sexual partners was obtained by requesting each sexually active woman with a regular partner for consent

for the investigators to contact the partner. A parallel form of the interview was used; the data relevant for this analysis are the men's reports of satisfaction with their partner's body.

RESULTS AND DISCUSSION

Validity

Content and Construct—Three analyses were conducted. The first was a factor analysis in which all subjects' responses (N = 134) on the BSS were used. The polychoric correlation matrix (Olsson, 1979) was used for a two-factor principle-components analysis and followed with a varimax rotation. Again, several procedures were used to choose the number of factors to extract; however, the tests were inconclusive and estimated the number of factors to be one, two, or three. Each solution was inspected, and the two-factor solution was selected as potentially representing the greatest conceptual clarity. The solution and percentage of variance accounted for are (1) Facial and sexual (Body) satisfaction (44.3%) and (2) Lower torso (Weight) satisfaction (41.3%). As Table 3 indicates, all items loaded above .50 and, therefore, none were eliminated.

In a prior factor analysis of the entire scale (Bohrnstedt, 1977), facial items emerged as the first factor, whereas genital and breast items accounted for proportionately smaller percentages of variance. However, this statistical grouping of items on Factor 1 suggests an interpretation of a general "body" factor, one which taps central aspects of appearance (i.e., facial attractiveness) as well as defining sexual features (i.e., the breasts and genitals) for women. Regarding Factor 2, women may have evaluated the weight and lower torso items similarly because of their empirical relationship to a gender difference in a salient body aspect, weight. This cluster of items parallels the factor structure of other body measures (Franzoi & Shields, 1984) and data on gender differences in fat distribution (Bjorntorp, 1985): men tend to store their fat in the upper body, whereas women distribute fat on the lower, including the thighs, hips, and buttocks.

The second analyses examined the relationship of body satisfaction to related and unrelated constructs. Correlations were again corrected for attenuation. Sexual behavior and responsiveness variables were examined. There was no relationship to the measures of sexual behavior (i.e., the frequency of intercourse, −.03, and range of sexual activities, −.09), or the measures for sexual excitement (e.g., sexual arousability index, −.14) or orgasm (e.g., frequency of orgasm, −.18). However, the BSS was significantly correlated with the measures of sexual desire (e.g., symptoms of desire, .34, and frequency of sexual fantasy, −.36) and resolution (e.g., symptoms of resolution, −.41, and women's judgment of difficulty, .65). For Factor 2, lower torso satisfaction was significantly correlated with the women's actual weight (−.29), and as expected, there was no relationship to the total BSS score (.09). Correlations with unrelated constructs, mood and marital adjustment, were significant, .38 for the POMS and −.27 for marital adjustment, contrary to prediction. The third analyses examined the correspondence between BSS scores for women and their sexual partners. There was a significant difference between the members of the dyad for the total BSS score, t = 4.58, df = 15, (p = .001), and for each of the 10 items. In addition, across

[1]Because of the low incidence of this disease, a national sample was necessary. Charts of all women treated for the disease between 1977 and 1987 were screened and alive, available women contacted. Analyses between the interviewed and not interviewed samples were conducted on available demographic and medical variables. Analyses indicated that the interviewed sample was significantly younger (M = 46.5) than the women not interviewed (M = 50.9 years), t (305) = 3.03, p <.01, and were more likely to have received lesser surgical treatment (consistent with a younger age at original diagnosis) for their initial treatment course. Neither of these differences is, however, of sufficient magnitude to suggest this sample is from a demographic or disease/treatment standpoint atypical of the population of women treated for in situ disease. Parallel analyses were conducted between women with partners who participated and women with partners not participating. No significant body image, sexual, emotional distress, or marital adjustment bias was detected.

items, the effect was the same, with women reporting less satisfaction for each aspect of their body than did their sexual partners (e.g., 4.3 for women and 2.9 for men for "abdomen" or 2.8 for women and 1.4 for men for "genitals"). Previous data from men and women rating their own bodies (e.g., Berscheid, Walster, & Bohrnstedt, 1977; Franzoi & Herzog, 1987) and the above data for the Derogatis scale suggest a generalized negativity by women in their body evaluations. These data from a dyad are significant in the implication that women's negative evaluations may occur *in spite* of sexual partner evaluations to the contrary.

Criterion—Two analyses were conducted. The first examined the extent of genital disruption and body image, as it has been hypothesized that women with greater body disfigurement may be more vulnerable to greater body image dissatisfaction. Comparison was made between women who received limited (i.e., biopsy or wide excision) vs. extended (i.e., vulvectomy) treatment. The T-test for the total BSS score was not significant. However, an analysis using the genital item only was significant, $t = 2.09$, $df = 64$, ($p = .05$), with values of 2.39 ("moderately satisfied") for the limited surgery and 3.14 ("somewhat satisfied") for the extended surgery groups. Correlations were also calculated between the extent of laser or surgical treatment and the total score and the genital item score. Values for the total surgery score were not significant; however, the correlation between extent of laser treatment and the genital dissatisfaction was in the appropriate direction and significant ($r = .42$). Taken together, these data provide weak evidence that the magnitude of external genital disruption may be correlated with greater body image disruption. Any effect may be restricted to the particular body part undergoing change, such as greater dissatisfaction with the genitals, per se.

The second criterion analyses examined relationship of body image and clinically significant sexual difficulty, i.e., the diagnosis of sexual dysfunction. A median split procedure was used to divide the sexually active sample into two groups, women with "satisfied" (BSS scores ≤ 30) vs. "dissatisfied" body image (BSS scores 31–60). There was no overall dysfunction effect ($p = .33$) using a Fisher's exact test, indicating that women with dissatisfied body images were not disproportionately diagnosed with sexual dysfunctions. A parallel analysis was conducted using the genital item score to subdivide the sample, scores 1–2 vs. scores 3–6, and again, there was no dysfunction effect ($p = .16$).[2]

Reliability

Internal consistency reliability for the scale was. 79, and. 76 for Factor 1 and .83 for Factor 2.

General Discussion

Classic psychometric and contrasted group strategies were used to examine the content and valence of women's body image attitudes. Regarding content, the construct validity analyses for both measures suggest that when women evaluate their body parts, a common first factor emerges. This factor is composed of general "body" items and items central to appearance evaluations (i.e., the face and facial characteristics; see Berscheid, Walster, & Bohrnstedt, 1972) as well as sexual body parts (e.g., breasts, genitals). Of the three factors for the Derogatis measure, the coefficients of congruence suggest stability (replicability) for only this factor. With the exception of items which cluster with weight (see discussion below),

[2]Logistic regression is a potentially more sensitive analysis for this question as all BSS data would be used rather than the "satisfied" vs. "dissatisfied" classification. However, regression analyses for the total BSS score and the genital item were nonsignificant, as well ($p = .99$ and $p = .11$, respectively).

evaluation of other body parts (e.g., shoulders, hands, arms, feet) may be less central to women's total body views.

The construct analyses also indicate that weight and its distribution on the female body exert a powerful effect on women's evaluations of their bodies. This effect is found not only in evaluations of specific body parts, but may also be the primary reason why the valence of women's feelings about their bodies is usually negative. Specifically, these data indicate that evaluations of the hips, buttocks, thighs, etc., are directly affected by a woman's actual weight and satisfaction with her weight, whereas this is not the case for other items, such as those on Factor 1. The loading of the lower torso items on a "weight" factor has been noted by other investigators (Franzoi & Shields, 1984). Since the majority of women (e.g., 69% in Berscheid, Walster, & Bohrnstedt, 1972; 55% in Cash, Winstead, & Janda, 1986)—young and old alike (Moore, 1988; Williamson, Davis, Goreczny, & Blouin, 1989—are dissatisfied with their weight, items assessing weight and its body correlates may be one of the contributors to consistently negative body image reports by women (Franzoi & Herzog, 1987; see Berscheid, Walster, & Bohrnstedt, 1972, or Cash, Winstead, & Janda, 1986, for survey data).

An additional contributor to the negative valence of women's body image attitudes appears to be an individual (gender) difference of a negative response style. Considering the present analyses, three lines of data build the case for response style in women. First, the factor analytic data for the Derogatis measure could be interpreted as indicating that the women responded to the items on Factor 2 and, possibly, Factor 1 on the basis of item wording (i.e., negative and positive, respectively) rather than content. Second, on the Berscheid measure, examination of the item differences for the dyad revealed that women gave significantly lower scores for *every* item in contrast to their male partners, suggesting a lack of specificity in their negative evaluations.[3] Third, on the Derogatis measure, the only effect from pre- to post-treatment was that women responded *more negatively* on *negatively worded* items, again suggesting a lack of content-driven responding. These data do not suggest that measures of this sort are content-free, only that the case is strong for a response style of negativity.

The interpretation of a negative response style has two obvious implications for future research on women's body attitudes. One is the need for attention in test construction, particularly item generation, wording, and scoring. Secondly, users of the current measures need to attend to the content domain of the measure (particularly weight), the possibility of response styles (negativity), and the interaction of content and method factors. For example, research designs which describe a single clinical group (Sewell & Edwards, 1980) or contrast existing groups (e.g., women with anorexia with normals) will, typically, find low (negative) body image scores for the clinical sample(s), which may be due in part to a subject's tendency to respond to items in a negative direction. For samples in which "negativity" is relevant (e.g., depressed samples), it would not be surprising to find more "body image disturbance" (i.e., higher total scores), since the data for both the BIS and the BSS indicate a significant correlation between the body image scores and mood. This suggests that body image disturbance among depressed women, for example, may be due in part to the women responding to the items in a more negative direction *because they are depressed*, rather than because they have a disturbed body image, as might be interpreted (see Noles, Cash, & Winstead, 1985, for an example). Similarly, for female clinical samples in which weight is relevant (e.g., eating disorders), "body image disturbance" may be result

[3]Also, this effect is not due to a general discordance between partners, as there were no significant differences between the partners in the sexual behavior, sexual responsiveness, marital adjustment, or general functioning (e.g., time spent at home with the family) measures. Thus, the dyad's scores for the female's body image represent an atypical disagreement.

of *more* negative responding on the weight or weight-relevant items (e.g., items assessing body silhouettes or lower torso items) rather than any generalized body disturbance (see Williamson, Davis, Goreczny, & Blouin, 1989, for an example). Also, to the extent that body image measures oversample this content domain (or, in general, do not determine the relationship between actual weight and the items), measures of body image could be constructed which are little more than measures of satisfaction with weight. Such findings could be interpreted as "body image dissatisfaction" when the dissatisfaction is, more accurately, weight dissatisfaction (see Moore, 1988, for an example).

In view of the negative valence of women's evaluations and the contents of body (including facial) attractiveness and weight, does the body image construct relate to other relevant criteria? The data for both measures suggest that experiences historically hypothesized as producing a negative image (e.g., hysterectomy, sexual dysfunction, genital disfigurement, disease in general; see Derogatis, 1980; Fisher & Cleveland, 1958; or Sewell & Edwards, 1980) exert small direct effects. In one of the few prospective tests of body image, Study 1 found that body attitudes remained stable following the diagnosis and treatment of a physical disease, the occurrence of significant sexual dysfunction, and following any circumstances due to the interaction of these two stressors. While significant correlations were found between the body image scales and aspects of sexual functioning (particularly responses prior to, i.e., desire, and following, i.e., resolution, sexual activity), these relationships do not appear to be sufficiently strong to exert or predict the occurrence or resolution of sexual dysfunction. Study 2 provided a conceptual replication of these findings. Women undergoing greater visible disruption to the genitals provided lower ratings for the genital item, but the effect was limited and did not result in generalized body disturbance, such as might be evidenced by changes on Factor 1. Kriss and Kraemer (1986) provide parallel data for mastectomy vs. healthy women with mastectomy patients rating breast items lower but revealing no lower scores on other body items.

In conclusion, we viewed women's body images as attitudes—general and enduring positive or negative feelings about the body. These data suggest that for body part attitude measures, contents include a general judgment, with attitudes toward the whole body and facial and sexual aspects important. Contents assessing weight and its body part correlates are also central to women's evaluations. The latter factor is important as a major content, but it may also contribute to the predominantly negative valence of women's body image attitudes. In fact, the negative valence is so reliable that it may be regarded, in part, as a negative response style. When operationalized in this manner, body image is correlated with conceptually relevant constructs such as sexual behavior and functioning, although the linkages are too weak to predict behavior. Expected relationships between body image and significant body change (such as severe genital change/disfigurement or sexual disruption) or significant "weakening" of the body (such as may occur with the diagnosis and treatment of a life-threatening disease such as cancer) that can be found with limited assessments (e.g., Andersen & Jochimsen, 1986) are absent in prospective analyses. If the body image construct is to play a role in the understanding of phenomena in psychopathology, physical attractiveness, sexual dysfunction, or physical illness, further theoretical and psychometric development is necessary.

Acknowledgments

This research was supported by National Cancer Institute Grant NIRA 1 R23 CA35702-01A1 and Grant PRB-27 from the American Cancer Society. The authors would like to acknowledge the individuals who assisted in the research. Greatest appreciation is extended to the participating women and men. In addition, we thank the following professionals: research assistants Jennifer Karlsson, Julie Henderson, Ellen Robinson, and Gretchen Schmuch; biostatistician Barbara Broffitt; and physicians Barrie Anderson, Jonathan Berek, the late Herbert Buchsbaum,

Larry Copeland, Charles deProsse, James LaPolla, James Roberts, Frederick Stehman, Deborah Turner, and Watson Watring.

References

American Psychiatric Association. Diagnostic and statistical manual of mental disorders. 3. Washington, DC: Author; 1980.

Andersen BL, Anderson B, DeProsse C. Controlled prospective longitudinal study of women with cancer: I. Sexual functioning outcomes. Journal of Consulting and Clinical Psychology. 1989a; 57:683–691. [PubMed: 2600238]

Andersen BL, Anderson B, DeProsse C. Controlled prospective longitudinal study of women with cancer: II. Psychological outcomes. Journal of Consulting and Clinical Psychology. 1989b; 57:692–697. [PubMed: 2600239]

Andersen BL, Broffitt B. Is there a reliable and valid self report measure of sexual behavior? Archives of Sexual Behavior. 1988; 17:509–528. [PubMed: 3223812]

Andersen BL, Broffitt B, Karlsson JA, Turnquist DC. A psychometric analysis of the Sexual Arousability Index. Journal of Consulting and Clinical Psychology. 1989; 57:123–130. [PubMed: 2925963]

Andersen BL, Jochimsen PR. Sexual adjustment among breast cancer, gynecologic cancer, and healthy women. Journal of Consulting and Clinical Psychology. 1985; 53:25–32. [PubMed: 3980825]

Andersen BL, Schmuch G, Watring W, Turner D, Roberts J, Copeland L, LaPolla J, Stehman FB, Berek JS, Buchsbaum H. Collaborative study of women treated for in situ vulvar cancer: I. Sexual functioning outcomes. Obstetrics and Gynecology. in press.

Andersen BL, Turnquist DC, LaPolla J, Turner D. Sexual functioning after treatment of in situ vulvar cancer: Preliminary report. Obstetrics and Gynecology. 1988; 71:15–19. [PubMed: 3336539]

Berscheid E, Walster E, Bohrnstedt G. The happy American body: A survey report. Psychology Today. 1973; 7:119–131.

Bjorntorp, P. Fat cells and obesity. A set point theory of obesity. In: Keesey, RE.; Brownell, KD.; Foreyt, JP., editors. The physiology, psychology, and treatment of eating disorders. New York: Basic Books; 1985.

Bohrnstedt, GW. On measuring body satisfaction. Institute of Social Research, Indiana University; 1977. Unpublished manuscript

Cash TF. Body-image affect: Gestalt versus summing the parts. Perceptual and Motor Skills. 1989; 69:17–18.

Cash TF, Winstead BA, Janda LH. The great American shape-up. Psychology Today. April.1986 :30–37.

Chapman LJ, Chapman JP, Raulin MI. Body-image aberration in schizophrenia. Journal of Abnormal Psychology. 1978; 87:399–407. [PubMed: 681612]

Cronbach LJ, Meehl PE. Construct validity in psychological tests. Psychological Bulletin. 1955; 52:281–302. [PubMed: 13245896]

Drellich MG, Bieber I. The psychologic importance of the uterus and its functions. Journal of Nervous and Mental Disorders. 1958; 126:322–336.

Derogatis, LR. Breast and gynecologic cancers: Their unique impact on body image and sexual identity in women. In: Vaeth, JM., editor. Frontiers of radiation therapy and oncology. Vol. 14. Basel, Switzerland: S. Karger AG, Basel; 1980. p. 1-11.

Derogatis LR, Melisaratos N. The DSFI: A multidimensional measure of sexual functioning. Journal of Sex and Marital Therapy. 1979; 5:244–281. [PubMed: 513144]

Fisher, S.; Cleveland, SE. Body image and personality. Princeton, N.J.: Van Nostrand; 1958.

Franzoi SL, Herzog ME. Judging physical attractiveness: What body aspects do we use? Personality and Social Psychology Bulletin. 1987; 13:19–33.

Franzoi SL, Schields SA. The Body Esteem Scale: Multidimensional structure and sex differences in a college population. Journal of Personality Assessment. 1984; 48:173–178. [PubMed: 6726603]

Glegnorn AA, Penner LA, Powers PS, Schulman R. The psychometric properties of several measures of body image. Journal of Psychopathology and Behavioral Assessment. 1987; 9:203–218.

Goodenough FL. Studies in the psychology of children's drawings. Psychological Bulletin. 1928; 25:272–279.

Harmon, HA. Modern factor analysis. Chicago: University of Chicago Press; 1976.

Hoon EF, Hoon PW. Styles of sexual expression in women: Clinical implications of multivariate analyses. Archives of Sexual Behavior. 1978; 7:105–116. [PubMed: 666563]

Hoon EF, Hoon PW, Wincze JP. An inventory for the measurement of female sexual arousability: The SAI. Archives of Sexual Behavior. 1976; 5:291–300.

Kaplan, HS. Disorders of sexual desire. New York: Brunner/Mazel; 1979.

Kriss RT, Kraemer HC. Efficacy of group therapy for problems with postmastectomy self-perception, body image, and sexuality. The Journal of Sex Research. 1986; 22:438–451.

Kurtz R, Hirt M. Body attitude and physical health. Journal of Clinical Psychology. 1970; 26:149–151. [PubMed: 5418123]

Loevinger J. Objective tests as instruments of psychological theory. Psychological Reports. 1957; 3:635–694.

Masters, WH.; Johnson, VE. Human sexual response. Boston: Little, Brown; 1966.

Mayer JD, Eisenberg MG. Body concept: A conceptualization and review of paper-and-pencil measures. Rehabilitation Psychology. 1982; 27:97–106.

Moore DC. Body image and eating behavior in adolescent girls. American Journal of Diseases of Children. 1988; 142:1114–1118. [PubMed: 3177310]

McNair, DM.; Lorr, M.; Droppleman, LF. Profile of Mood States. San Diego, CA: Educational and Industrial Testing Service; 1971.

Newcomb MD, Bentler PM. Dimensions of subjective female orgasmic responsiveness. Journal of Personality and Social Psychology. 1983; 44:862–873. [PubMed: 6842369]

Noles SW, Cash TF, Winstead BA. Body image, physical attractiveness, and depression. Journal of Consulting and Clinical Psychology. 1985; 53:88–94. [PubMed: 3980834]

Olsson U. Maximum likelihood estimation of the polychoric correlation coefficient. Psychometrika. 1979; 44:443–460.

Ruff GA, Barrios BA. Realistic assessment of body image. Behavioral Assessment. 1986; 8:237–251.

Secord PF, Jourard SM. The appraisal of body-cathexis: Body-cathexis and the self. Journal of Consulting Psychology. 1953; 15:343–347. [PubMed: 13109086]

Sewell, HH.; Edwards, DW. Pelvic genital cancer: Body image and sexuality. In: Vaeth, JM., editor. Frontiers of radiation oncology. Vol. 14. Paris: Barber, Vasel; 1980. p. 35-41.

Spanier GB. Measuring dyadic adjustment: New scales for assessing the quality of marriage and similar dyads. Journal of Marriage and the Family. 1976; 38:15–28.

Traub AC, Olson R, Orbach J, Cardone SC. Psychophysical studies of body image: III. Initial studies of disturbance in a chronic schizophrenic group. Archives of General Psychiatry. 1967; 17:664–670. [PubMed: 6059223]

Wellisch DK, Jamison KR, Pasnau RO. Psychosocial aspects of mastectomy: II. The man's perspective. American Journal of Psychiatry. 1978; 135:543–546. [PubMed: 645946]

Williamson DA, Davis CJ, Goreczny AJ, Blouin DC. Body-image disturbances in bulimia nervosa: Influences of actual body size. Journal of Abnormal Psychology. 1989; 98:97–99. [PubMed: 2708650]

Williamson DA, Kelley ML, Davis CJ, Ruggeiro L, Blouin D. Psychopathology of eating: A controlled comparison of bulimic, obese, and normal subjects. Journal of Consulting and Clinical Psychology. 1985; 53:161–166. [PubMed: 3858295]

Table 1

Derogatis Body Image Scale Factors and Item Loadings

Factor loading	Item number	Item
		Factor 1: Body attractiveness
.83	13	Men would find my body attractive
.74	11	I have a shapely and well-proportioned body
.55	14	I have attractive legs
.52	12	I have attractive breasts
.46	10	My face is attractive
		Factor 2: Negatively worded / reverse scored items
.55	1	I am less attractive than I would like to be
.55	9	I have too much body hair
.50	6	I am too short
.47	7	There are parts of my body I don't like at all
−.46	15	I am pleased with the way my pelvis and genitals look
		Factor 3: Weight
.78	4	I am too thin
−.69	2	I am too fat

Table 2

Coefficients of Congruence for the Three-Factor Solution of the Body Image Scale

	Factor		
Comparison	**1**	**2**	**3**
Disease vs. Healthy (Initial)	.87	.56	.82
Initial vs. 4-month (Disease only)	.88	.69	.61
Initial vs. 4-month (Healthy only)	.81	.73	.47

Table 3

Body Satisfaction Scale Factors and Item Loadings

Factor loading	Item
Factor 1: Facial and Sexual (Body) Satisfaction	
.78	Breast size
.78	Breast shape
.71	Face
.58	Genitals
.55	Hair
.51	Complexion
Factor 2: Lower Torso (Weight) Satisfaction	
.92	Hips
.85	Buttocks
.67	Weight
.60	Abdomen