Body Image Dissatisfaction in Cancer Survivors

Jessica T. DeFrank, MPH, C. Christina Bahn Mehta, MSPH, Kevin D. Stein, PhD, and Frank Baker, PhD

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Purpose/Objectives: To explore medical and psychosocial factors associated with body image dissatisfaction in male and female cancer survivors.

Design: Secondary data analysis from the American Cancer Society's Study of Cancer Survivors–II pilot survey.

Setting: Cancer survivors were identified through two state cancer registry databases.

Sample: 165 male and 234 female cancer survivors of six cancer types (bladder, female breast, colorectal, endometrial, prostate, and melanoma) who were 2, 5, and 10 years beyond diagnosis.

Methods: Researchers notified physicians prior to participant recruitment. State cancer registries contacted potential participants via mailed letters. Participants who gave their informed consent completed a written survey.

Main Research Variables: Current body image dissatisfaction, mental and physical health, sexual functioning, and basic medical and demographic information.

Findings: Results of multiple regression analysis indicated that male survivors of prostate cancer were more likely to express positive body images than men who had other types of cancer. A composite variable that included a history of cancer recurrence, multiple cancers, or metastatic cancer was the strongest predictor of body image dissatisfaction for female survivors. Body image was not associated with age, length of time since diagnosis, or general treatment type for either gender.

Conclusions: Body image was associated with various medical and psychosocial factors, and the factors differed for male and female cancer survivors.

Implications for Nursing: An understanding of factors associated with body image is essential for the nursing care of patients with cancer.

Key Points . . .

➤ Body image dissatisfaction is a common side effect of cancer and its treatment.

➤ Body image is a multidimensional construct associated with numerous medical and psychosocial factors in adult cancer survivors.

➤ Awareness of factors associated with body image is essential as nurses manage the long-term effects of cancer and its treatment.

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2001). Cancer treatment can produce various temporary and permanent changes in a patient's physical appearance. Temporary physical changes may include hair loss, weight loss, and alterations in the appearance of the skin. Permanent changes can range from minor scarring to the loss of a body part or loss of bodily and sexual function. Body image can be conceptualized for the purpose of the current study as a focus on patients' feelings and attitudes toward their body that develop as a result of a cancer diagnosis and treatment. Healthcare providers increasingly view body image as an important component in the health-related quality of life (QOL) of cancer survivors. A study assessing a range of psychosocial concerns in patients with cancer found that 52% reported the importance of having support in dealing with changes in their bodies (Soothill et al., 2001). One of the earlier studies to address body image and cancer investigated QOL issues of women who received surgery for breast cancer (Polivy, 1977). That study, and numerous subsequent studies, found that women who receive breast-conserving surgery typically report fewer body image problems than do those who require

M ore than 10.5 million cancer survivors are living in the United States today, and more than 60% of patients with cancer are expected to live five or more years after diagnosis (American Cancer Society, 2007). In contrast, in the 1970s, only approximately 50% of patients could have expected to live five years after cancer treatment (American Cancer Society). These encouraging statistics show that the population of cancer survivors is large and growing, partly as a result of advances in early detection and cancer treatment.

However, the same treatments that enable patients with cancer to survive their illnesses can result in disturbing side effects, such as physical and psychological difficulties and problems with sexuality and body image (Cohen, Kahn, & Steeves, 1998; Ekwall, Ternestedt, & Sorbe, 2003; Fobair, Hoppe, Cox, Varghese, & Spiegel, 1986; Nolte, Donnelly, Kelly, Conley, & Cobb, 2006; Schag, Ganz, Wing, Sim, & Lee, 1994; van Tulder, Aaronson, & Bruning, 1994; Wilmoth,

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a mastectomy (Ganz, Rowland, Desmond, Meyerowitz, & Wyatt, 1998; Ganz, Schag, Lee, Polinsky, & Tan, 1992; Rowland et al., 2000; Wellisch et al., 1989). Chemotherapy treatment also has been shown to affect patients' body image (Carelle et al., 2002; Coates et al., 1983). One study found that patients ranked body image–related side effects, such as hair loss, weight loss, and loss of sexual interest, among the most severe side effects of their chemotherapy treatments (Carelle et al.). However, female patients with cancer placed more emphasis on appearance and sexually related side effects than did male patients.

Sexual functioning and body image often are addressed simultaneously in the cancer literature, particularly in studies of women with breast cancer, because these two concepts are closely linked. Studies have consistently shown that the physical and psychological effects from cancer treatment can result in sexually related difficulties in some patients (Anllo, 2000; Bertero, 2001; Fobair et al., 2006; Ganz et al., 2002; Pelusi, 2006; Penson et al., 2003; Thors, Broeckel, & Jacobsen, 2001; Wilmoth, 2001) and that these difficulties can be persistent (Ganz et al., 1996).

Within the large body of existing research investigating body image in cancer populations, some considerations are worth emphasizing. First, the researchers' review of the literature showed that many studies on cancer and body image have targeted female breast cancer samples. Body image assessments that include other common cancer types appear to be less represented, particularly for male cancer populations. Second, many prior studies on body image were conducted with patients in the months immediately following treatment. Researchers are beginning to evaluate body image in long-term cancer survivors (Ganz et al., 1996, 1998, 2002; Hartl et al., 2003; Schag et al., 1994). Some studies of long-term breast cancer survivors suggest that despite positive physical and emotional functioning, body image disturbances may linger in the later years of cancer survival (Ganz et al., 1996; Hartl et al.).

The existing gaps in body image research illustrate the need for additional studies that are inclusive of male and female long-term survivors with a wide range of cancer types and durations of time since diagnoses (Stein et al., 2006). Thus, the aims of the present study are to describe body image dissatisfaction for male and female cancer survivors and to identify medical, demographic, and psychosocial variables that are associated with body image for male and female cancer survivors.

Methods

Participants

Secondary data were examined from the pilot study for the American Cancer Society's Study of Cancer Survivors–II, a cross-sectional study of QOL and psychosocial functioning of 2-, 5-, and 10-year cancer survivors (Stein et al., 2006). The sample included survivors of female breast cancer, prostate cancer, colorectal cancer, endometrial/uterine cancer, bladder cancer (including in situ cases), and melanoma.

Population-based samples for the pilot study were identified through the state cancer registry databases in Iowa and New Jersey. Researchers obtained institutional review board approval in each state prior to launching the pilot study. To be eligible for inclusion in the pilot study, subjects must (a) have been diagnosed with a primary tumor of one of the six aforementioned cancers in the target diagnosis years of 1990

(10-year survivors), 1995 (5-year survivors) or 1998 (2-year survivors); (b) have stage I–IV cancer at the time of diagnosis (except for bladder cancer, where in situ cases were included); and (c) have been 18 years of age or older and residents of the state of Iowa or New Jersey at the time of diagnosis. The sample was stratified by the six cancer types and three time-since-diagnosis cohorts. The three most common cancers (breast, prostate, and colorectal) each comprised 25% of the sample (75% total), and the remaining cancers (bladder, endometrial, and melanoma) each comprised 8.3% of the sample (25% total). The sample was stratified further by diagnosis cohort in that the sample contained equal proportions of 2-, 5-, and 10-year survivors (one-third each). A target sample size was determined to allow enough power to detect differences by cancer type and diagnosis cohort.

Procedure

Researchers first notified each patient's physician of their intent to contact the patient for participation in the study. Researchers sent mailed notification letters to physicians and gave three weeks to respond. Patients whose physicians identified them as not meeting the previously described eligibility requirements or having known medical disorders that would preclude them from participating in the study were excluded from the sample. If physicians did not respond to the letter within three weeks, researchers proceeded with participant recruitment.

The state cancer registries of Iowa and New Jersey contacted potential study participants. Cancer registry staff mailed potential participants a letter of invitation and two copies of a consent form. Participants received instructions to sign and return one copy of the consent form, which authorized the release of their personal identifiers and cancer information. The American Cancer Society researchers mailed the study questionnaire to those who provided consent. The study questionnaire took approximately 30 minutes to complete.

Of the 1,440 patients originally selected for inclusion in the study, 44 (3%) were found to be deceased during the physician notification process and an additional 54 (4%) were excluded because the physicians did not permit researchers to contact their patients. Of the 1,342 patients contacted for study participation, another 56 (4%) were found to be deceased and 57 (4%) did not meet eligibility criteria. Of the remaining 1,229 eligible patients, 651 (53%) consented to participate in the study. During the time period between patient consent and administration of the survey instrument, 14 additional patients (2%) died and were removed from the eligible sample, yielding 1,215. A total of 437 patients (67% of the consented patients) completed a study survey, providing an overall survey yield of 36% (437 out of 1,215). Complete body image data for 399 subjects are included in the current analyses.

Survey Instruments

Body image: The study measured body image with the Appearance Evaluation subscale from the **Multidimensional Body Self-Relations Questionnaire** (Brown, Cash, & Mikulka, 1990). The seven scale items are: "I dislike my physique," "I like my looks just the way they are," "Most people would consider me good-looking," "I like the way I look without my clothes," "I like the way my clothes fit me," "I am physically unattractive," and "My body is sexually appealing." The scale uses a five-point response format ranging from 1 (definitely disagree) to 5 (definitely agree). Items were reverse coded where needed.

Higher scores on the scale reflect more positive feelings toward body and appearance. A mean body image satisfaction score that could range from 1–5 (Cash, 2000) was computed for each respondent who completed all seven survey items. In the current study, the reliability for the scale measured via Cronbach's alpha was 0.981 for male survivors and 0.994 for female survivors. (Cronbach's alpha is a measure of the reliability of a psychometric scale. It reflects how well a set of items measure a single latent construct. Cronbach's alpha will usually be high if it measures a single latent construct [Rosner, 1995].)

Health-related quality of life: Health-related QOL was measured with the **Medical Outcomes Study 36-Item Short Form (MOS SF-36)** (Ware, Snow, Kosinski, & Gandek, 1993), a widely used, self-administered questionnaire of physical and emotional health status. The MOS SF-36 contains eight multi-item scales that measure general health perceptions, physical functioning, role limitations caused by physical problems, bodily pain, general mental health, vitality, role limitations caused by emotional problems, and social functioning. The MOS SF-36 yields two summary scores that reflect the two-dimensional factor structure underlying the eight subscales: the mental health component score and the physical health component score. The composite scores were calculated according to published methods (Ware et al.). Higher scores on the two composite scores indicate better mental and physical functioning.

Sexual dysfunction: Sexual dysfunction was assessed with the **Medical Outcomes Study Sexual Functioning Scale** (Stewart & Ware, 1992). Four items measured sexual interest and ability using a four-point response format ranging from 1 (not a problem) to 4 (very much a problem) and mean scores were calculated. Higher scores indicate higher levels of sexual dysfunction. In the current study, the reliability for the sexual dysfunction scale measured via Cronbach's alpha (Rosner, 1995) was 0.989 for male survivors and 0.908 for female survivors.

Demographic and medical variables: Self-reported measures were used to obtain basic demographic information such as age and race. A self-reported history of cancer recurrence, metastasis, or multiple cancers was combined as a single dichotomous variable to account for the small proportions of participants reporting each of these individual medical conditions. Cancer type and length of time since diagnosis were confirmed through state cancer registry databases.

Data Analysis

Because the sample contained large proportions of gender-specific cancers (i.e., female breast and prostate cancer), statistical comparisons of body image by gender were not performed. The results would have been confounded by cancer type. Therefore, the researchers conducted separate statistical analyses for male and female cancer survivors.

Descriptive statistics were used to depict the medical and demographic characteristics of the sample. One-way analysis of variance (ANOVA) and Pearson correlations were used to identify statistically significant relationships between body image and the medical, demographic, and psychosocial variables. Post-hoc tests were performed where necessary. Multiple linear regression analyses were used to identify variables most strongly associated with body image for men and women. Variables associated with body image at $p < 0.10$ were considered statistically significant and were included in the regression models. The larger p value was chosen to ac-

count for the reduced sample sizes (n = 71 for men and n = 94 for women) used for the regression analysis, thus allowing researchers to include variables that were not significant at $p < 0.05$ but that were deemed to be of clinical importance. Data were analyzed using SPSS® version 13 (SPSS, Inc.).

Results

Table 1 describes the demographic and medical characteristics of the 165 male and 234 female cancer survivors who completed the body image portion of the survey (N = 399). Most male participants (63%) were prostate cancer survivors, and most female participants (56%) were breast cancer survivors. The frequencies at which respondents reported dislike regarding the seven body image items are displayed in Table 2. The most common dislike was "the way I look without my clothes" for men (34%) and women (54%). For six of the seven body image items, a larger proportion of women reported dislike compared to men. The median number of items reported as a dislike was one for men and two for women.

Univariate analysis (correlation and ANOVA) identified variables significantly associated with body image. For men,

Table 1. Sample Demographics

Characteristic	Men (N = 165)		Women (N = 234)	
Age (years)				
X̄	64.70		59.80	
SD	9.50		13.46	

Characteristic	n	%	n	%
Race				
Caucasian	117	74	176	79
African American or other	41	26	46	21
Marital status				
Married or living with someone	135	82	122	52
Not married, widowed, or divorced	30	18	112	48
Education				
Less than high school	68	47	122	53
High school or more	77	53	109	47
Annual household income ($)				
40,000 or more	53	41	70	44
Less than 40,000	77	59	91	57
Cancer type				
Bladder	17	10	6	3
Breast	–	–	131	56
Colorectal	36	22	48	21
Endometrial	–	–	30	13
Prostate	104	63	–	–
Skin melanoma	8	5	19	8
Years since diagnosis				
2	55	34	76	33
5	59	36	87	37
10	50	31	70	30
Treatment (not exclusive)				
Surgery	102	62	177	76
Chemotherapy	21	13	71	30
Radiation	53	32	93	40
Recurrence, metastasis, or multiple cancers	40	24	54	23

Note. Data are missing for some of the variables. Because of rounding, not all percentages total 100.

Table 2. Selected Individual Body Image Scale Items to Which Cancer Survivors Responded Definitely or Mostly Disagree

Scale Item	Men (N = 165)		Women (N = 234)	
	n	%	n	%
I like the way I look without my clothes.	56	34	126	54
My body is sexually appealing.	48	29	80	36
I dislike my physique.[a]	40	23	73	31
I like the way my clothes fit me.	31	19	70	30
I like my looks just the way they are.	29	17	69	30
Most people would consider me good-looking.	26	16	33	14
I am physically unattractive.[a]	18	11	38	16

[a] Items are reverse scored.

mean body image scores significantly differed by cancer type (p = 0.02), with skin melanoma survivors having significantly lower body image scores than men with prostate cancer (2.86 and 3.59 respectively, p = 0.04). However, the cell sizes for male skin melanoma participants (n = 8) were small. Correlations between body image scores and mental health (r = 0.203, p = 0.01), physical health (r = 0.169, p = 0.03), and sexual functioning (r = –0.192, p = 0.09) were also significant. Body image scores were not significantly associated with age, time since diagnosis, or general treatment type for men.

For women, mean body image scores significantly differed according to the presence or absence (2.99 and 3.39 respectively, p = 0.003) of recurrence, multiple diagnoses, or metastatic cancer (these three medical characteristics were combined as a single variable). Body image was significantly correlated with mental health (r = 0.258, p < 0.001), physical health (r = 0.254, p < 0.001), and sexual dysfunction (r = –0.371, p < 0.001) but was not associated with age, cancer type, general treatment type, or time since diagnosis. Although mean body image scores also differed by race (Caucasian = 3.21, African American or other = 3.55, p = 0.01), this relationship was not explored further because of the large proportion of Caucasian women in the sample.

The results of multiple linear regression analysis, which accounts for the influence of multiple variables on body image at once, are shown in Tables 3 and 4. The regression models as a whole for male and female survivors were significant and explained 10% and 15% of the variance in body image scores for men and women, respectively. For men, having prostate cancer, as compared to the other cancer types, was the strongest predictor of body image scores. Male prostate cancer survivors generally had better body images. Additionally, the association between mental health scores and body image was significant. Poorer mental health scores were associated with poorer body image, although the relationship was weak.

For women, a composite variable that included history of a recurrence, multiple diagnoses, or metastatic cancer was a strong predictor of poorer body image scores. In addition, mental health and sexual functioning scores were associated with body image scores. A more negative body image was associated with poorer mental health and sexual functioning scores, although the associations were relatively weak.

Discussion

The present study assessed responses to measures of body image dissatisfaction in a cross-sectional sample of male and female cancer survivors with a variety of cancer diagnoses. The study also examined relationships between body image and demographic, medical, and psychosocial measures. The study was comprised of secondary data analyses from the American Cancer Society's Study of Cancer Survivors–II pilot survey.

Male and female cancer survivors responded to various survey items relating to their physique and perceived sexual appeal. Women reported dislikes with their body image more often than men. Sixteen percent to 54% of women reported dislike for a given body image item, whereas 11%–34% of men reported dislike for the same items.

Body image dissatisfaction was most strongly associated with cancer type for male cancer survivors. Specifically, male prostate cancer survivors reported less body image dissatisfaction compared to men with other types of cancer (colorectal, bladder, and melanoma). The finding that body image dissatisfaction varied by male cancer type might be explained by the unique treatments and subsequent side effects that accompany various cancers. For example, physical alterations may be more visible and thus more disturbing for those who received treatment for melanoma and less for those treated for prostate and other cancer types. Because the present study collected only general treatment data, the relationship between cancer treatment and body image could not be explored further.

The present study also found that sexual dysfunction was not associated with body image for men. This finding was unexpected given the large proportion of prostate cancer survivors in the male sample (63%), a cancer that often results in sexual changes and difficulties. Thus, body image disturbance for male cancer survivors appears to have little to do with their current sexual functioning but perhaps relies more on treatment-related side effects that affect their appearance. Further research should be done to explore this hypothesis.

Poorer mental health also was associated with poorer body image for male cancer survivors, although the relationship was relatively weak. Mental health, in the context of the present study, included reports of bodily pain, lack of vitality, emotional problems limiting the fulfillment of one's roles, and ability to function in social settings. The results suggest that poorer mental health as a result of cancer treatment may have a negative impact on male body image and should be addressed in clinical settings. The converse also may hold true: Body image disturbances as a result of cancer treatments may have a negative impact on male survivors' mental well-being.

Table 3. Demographic, Medical, and Psychosocial Variables on Body Image for Male Cancer Survivors

Variable	β	t	p
Prostate cancer (versus other)	0.374	2.029	0.046
Mental health	0.016	1.727	0.089
Physical health	0.005	0.475	0.64
Sexual dysfunction	–0.162	–1.650	0.10

Note. $F_{(4,67)} = 2.93$, p = 0.03, adjusted $R^2 = 0.10$

Note. The inclusion of the sexual dysfunction measure resulted in a reduced sample size (N = 71).

Table 4. Demographic, Medical, and Psychosocial Variables on Body Image for Female Cancer Survivors

Variable	β	t	p
Race	0.204	1.062	0.29
Recurrence, metastasis, or multiple cancers	−0.512	−2.679	0.009
Mental health	0.022	1.852	0.067
Physical health	0.007	0.879	0.38
Sexual dysfunction	−0.181	−1.743	0.085

Note. $F(5,89) = 4.336$, $p = 0.001$, adjusted $R^2 = 0.15$

Note. The inclusion of the sexual dysfunction measure resulted in a reduced sample size (N = 94).

Factors associated with poorer body image for female cancer survivors included a composite measure of having recurrent cancer, metastatic cancer, or multiple cancer diagnoses. The findings suggest that more serious cancer diagnoses or repeat cancer experiences can have very strong and negative effects on female body image. Because of the small number of survivors in the sample who reported a recurrence, multiple diagnoses, or metastatic cancer, the impact of the factors could not be assessed individually and warrants further research. Nevertheless, clinicians should identify women with more serious or repeat cancer experiences and counsel them on body image problems.

Mental health and sexual functioning also were associated with body image for female cancer survivors. As in male survivors, the effects of cancer treatment may impair female survivors' mental well-being, resulting in body image disturbances (and vice versa). However, unlike male survivors, female body image was strongly associated with sexual functioning. Women who reported problems with an ability to perform sexually and reduced sexual interest also reported more body image dissatisfaction. Clinicians who counsel female cancer survivors on their body image problems may additionally benefit patients by addressing problems with sexuality and general mental well-being.

Body image was not associated with certain medical and demographic variables for the male or female samples. The variables included the general type of treatment received, the number of years since diagnosis, and age. As discussed, the researchers were not able to investigate the impact of specific treatment types on body image. Previous studies suggest that specific surgical procedures can affect body image, at the earlier and later stages of cancer survivorship (Ganz et al., 1998; Rowland et al., 2000; Wellisch et al., 1989). Given that the study participants were 2–10 years past their cancer diagnosis, the type of cancer treatment quite possibly may have exerted an influence on body image during the earlier stages of cancer survival but had less of an influence as individuals moved further away from the completion of treatment.

The researchers' finding that body image was not associated with the length of time since diagnosis contradicts other research findings. A study of breast cancer survivors found that an increasing length of time since diagnosis was associated with poorer body image (Hartl et al., 2003). In contrast, the results of the current study suggest that body image appears to be stable from the second year of survival onward for male and female cancer survivors. However, the present study's cross-sectional design limits conclusions about influences over time. In addition, age did not drive body image scores for the sample. Thus, younger and older cancer survivors alike are susceptible to body image disturbance. Clinicians should address potential body image disturbance regardless of age or the length of time that has passed since the cancer diagnosis.

Limitations

The multiple linear regression models explained 10%–15% of the variance in body image scores for male and female survivors. Thus, several other relevant factors, such as spousal reaction to cancer and social support, also could explain body image and should be explored. Because the present study used secondary data, such measures were not included. Second, the absence of a control group did not allow the researchers to compare this population of cancer survivors to individuals with no history of cancer. Whether body image dissatisfaction in cancer survivors differs from that of the general population and whether the interplay between body image and psychosocial factors found in the present study is unique to cancer populations cannot be determined. Additional studies using a matched comparison group should be performed to further explore those questions.

A final consideration is whether the findings of the current study are representative of the larger population of cancer survivors. The results must be viewed in light of the overall consent rate; fewer than half of the eligible subjects participated in the study. Furthermore, the researchers cannot determine whether study participants differed on any psychosocial variables, including body image, from nonparticipants. Cancer survivors who participated in the present study may have had a higher health-related QOL compared to those who did not participate.

Implications for Nursing

Patients with cancer are living longer, and clinicians and oncology nurses are increasingly responsible for managing the long-term effects of cancer and its treatment. Addressing body image is of particular importance given a growing body of literature suggesting that body image disturbances may emerge during cancer treatment and persist into survivorship. Nurses play a key role in identifying body image concerns and ameliorating those concerns by helping patients strengthen their self-image. Nurses also play a role in the design and evaluation of interventions aimed to help patients overcome body image problems. Understanding the medical and psychosocial factors associated with body image will help nurses fulfill these two important roles. The findings from the present study suggest that although female cancer survivors report more body image concerns, such issues also may occur in male cancer survivors. Therefore, nurses should address potential body image disturbances in both genders. Addressing mental health and body image problems together may be an effective strategy when working with both male and female cancer populations. Women who have had multiple cancer experiences may be particularly susceptible to body image problems. Addressing sexual functioning in female survivors also may be an effective approach.

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