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Sexual Functioning Among Breast Cancer, Gynecologic Cancer, and Healthy Women

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Abstract

An investigation was conducted to determine the specific type of sexual functioning deficits and the relationship between global sexual satisfaction and adjustment in two related life areas, the marital relationship and a woman's body image, for two groups of cancer patients at high risk for sexual difficulties. Analyses revealed that the aspects of sexual functioning for matched samples of breast cancer patients and gynecologic cancer patients that differed from those of healthy women were the frequency of sexual behaviors and the level of sexual arousal. Whereas women's evaluations of their current sexual life had no relationship to their marital adjustment ratings, analyses suggested that body image disruption may be a prevalent problem for gynecologic cancer patients.

Although the majority of the 900,000 women diagnosed annually with breast cancer or genital cancer are treated effectively, sexual functioning morbidity frequently occurs. In fact, review of sexual functioning morbidity estimates for major organ sites (i.e., breast, genital, colon, rectum, and bladder) shows that close to 90% of the patients surveyed experience sexual functioning morbidity, with the highest rates for those with disease at a sexual body site (Andersen, in press). The present study provides descriptive data useful in preventing or treating sexual functioning morbidity among women with cancer.

Two groups at especially high risk for sexual difficulties are women with breast cancer or gynecologic cancer. In combination, these sites account for 44% of all female cancer patients diagnosed annually (Silver-berg, 1984). Breast cancer patients have received extensive psychological study (Bransfield, 1982–1983; Meyerowitz, 1980; Morris, 1979; Taylor, Lichtman, & Wood, 1984). Sexual functioning, however, has rarely been the focus of any investigation; instead, sexual data have been obtained with mood, social activity, or family relationship data. From such studies, estimates of general sexual disruption, reduced frequency of intercourse, or specific difficulties with orgasm range from 21% to 39% for the patients sampled retrospectively (Battersby, Armstrong, & Abrahams, 1978; Becket, 1979; Frank, Dornbush, Webster, & Kolodny, 1978; Jamison, Wellisch, & Pasnau, 1978; Silberfarb, Maurer, & Crouthamel, 1980) and are 30% for the patients followed prospectively (Maguire et al., 1978; Morris, Greer, & White, 1977).

Although a gynecologic site for cancer is the second most common one for women, these patients have received little psychological study. The most common sites for gynecologic cancer are the cervix, endometrium, and ovary, accounting for 95% of all gynecologic cancers. Individuals with cervical cancer compose the only gynecologic group who has received sexual

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study (Andersen & Hacker, 1983c). Because two modes of therapy, radical hysterectomy and radiation therapy, are equally effective for early stage disease, the focus of the few investigations has been to determine if the treatments produce differential rates of sexual disruption. In the retrospective investigations (Abitbol & Davenport, 1974; Decker & Schwartzman, 1962; Seibel, Freeman, & Graves, 1980; Vasicka, Popovich, & Brausch, 1958), estimates of diminished or completely disrupted sexuality ranged from 6% to 19% for the radical hysterectomy patients surveyed and ranged from 44% to 79% for the radiation therapy patients surveyed. However, the most rigorous investigation (Vincent, Vincent, Greiss, & Linton, 1975) found comparable outcomes, with 29% and 33% of radiation and hysterectomy patients, respectively, reporting subsequent sexual difficulties, [1]

In addition to advancing knowledge regarding the sexual problems of cancer patients, another important reason for study is that sexual difficulties may play a mediating role for distress that may emerge for cancer patients in other life areas following treatment. Two areas that seem particularly relevant for breast cancer patients or gynecologic cancer patients are marital adjustment and body image. A higher incidence of marital distress among breast cancer patients when compared with benign disease patients has been found (Morris et al., 1977), and the tie to sexual difficulties has been made in clinical reports (e.g., Jamison et al., 1978). Due to the disfigurement from breast surgery, the concept of body image disruption has enjoyed popularity in both lay and professional literatures as central to the distress for breast cancer patients (Derogatis, 1980; Polivy, 1977; Schain, 1982). Body image disruption has also been noted among gynecologic cancer patients undergoing radical surgeries (Andersen & Hacker, 1983a, 1983b). Although hysterectomy or pelvic irradiation may result in less obvious body alteration than does mastectomy, the body image disruption with hysterectomy for benign conditions has long been noted (Daly, 1976; Dennerstein, Wood, & Burrows, 1977; Roeske, 1978). Finally, if cancer exerts a substantial impact on sexual functioning or adjustment in related areas, few differences between breast cancer patients and gynecologic cancer patients should be found, with group differences only observed when cancer patients and healthy women are compared.

Method

Subject

Breast cancer—Sixteen women ranging in age from 27 to 67 years (*M* = 47 years) previously diagnosed with Stage II breast cancer served as subjects. All subjects were treated with unilateral modified radical mastectomy with adjuvant chemotherapy. Chemotherapy regimens included oral phenylalanine mustard (L-PAM) and 5-flurouracil (5-FU) given intravenously for 5 consecutive days at 6-week intervals for a total of 17 courses. Time since surgery ranged from 2 months to 12 months (*M* = 6.8 months). None of the women had undergone reconstructive surgery. Actual 5-year survival for this group of patients is 63%, as determined by the National Surgical Adjuvant Breast Project.

Gynecologic cancer—Sixteen women ranging in age from 31 to 65 years (*M* = 48 years) previously diagnosed with early gynecologic cancer served as subjects. Disease site and stage information included the following: cervix (*n* = 5 Stage I, *n* = 4 Stage II), endometrium (*n* = 6 Stage I), and ovary (*n* = 1 Stage I). This distribution of subjects corresponds roughly to the nationwide distribution for these disease sites and stages for early stage gynecologic cancer samples (National Cancer Institute, 1976). Nine subjects were treated with comparable surgeries, radical hysterectomy, pelvic lymphadenectomy, and possible bilateral salpingo-

[1]There have been no studies of the sexual functioning of women with early stage endometrial or ovarian cancer, but their posttreatment sexual responses may be comparable because the surgical and radiotherapy treatments for these latter women are similar to those for women with cervical disease.

oophorectomy or total abdominal hysterectomy and bilateral salpingo-oophorectomy. The remaining 7 subjects were treated with pelvic radiotherapy with a prior staging laparotomy ($n = 5$) and/or intracavitary cesium implants ($n = 5$). Time since treatment ranged from 4 months to 12 months ($M = 6.5$ months). National Cancer Institute (1976) estimates for 5-year survival are approximately 80% for localized (Stage I) and 50% for regional (Stage II) disease across these sites.

Healthy outpatients—Sixteen women seeking routine gynecologic care served as subjects to estimate the base rate of sexual functioning deficits that occur under normal health and life circumstances. To be eligible for participation, a woman must not have had gynecologic surgery within the previous 3 years or anticipate surgery or pregnancy within the next 2 years.

Measures

Sexual behavior—Two measures were used to assess the frequency of sexual behavior. (a) The Sexual Activities scale from the Derogatis Sexual Functioning Inventory (Derogatis & Melisaratos, 1979) was used to assess the range of past and current sexual activities. The scale includes 24 heterosexual sexual behaviors, ranging from kissing to intercourse. Respondents completed the inventory twice. On the first occasion, a subject endorsed each activity that had been experienced over the course of her entire sexual life and on a later occasion endorsed each activity that had occurred in the last month. Scores for both administrations could range from 0 to 24. (b) Subjects were asked to provide the frequency of sexual intercourse and partner kissing during the previous month. A 9-point interval scale (e.g., *0 = not at all, 4 = 2–3 times per week, 8 = 4 or more times per day*) was used to code the responses.

Sexual response cycle—Four indicants were chosen to assess separate phases of the sexual response cycle.

1. For the desire phase, subjects were asked to provide their preferred frequency of intercourse with their partner. A 9-point interval scale was used to code the responses. A discrepancy between preferred and actual intercourse frequencies has been noted (DSM-III, American Psychiatric Association, 1980; Kaplan, 1979; Masters & Johnson, 1970) as symptomatic of a sexual desire dysfunction.
2. For the excitement phase, two measures were used. (a) The Sexual Arousal Inventory (Hoon, Hoon, & Wincze, 1976) includes 28 sexual/erotic experiences for which subjects rated each activity on a 7-point scale, ranging from *adverse effect on sexual arousal* (−1) to *activity always causes sexual arousal* (5), in terms of their present feelings when engaging in the activity. The items were summed for a total score, ranging from −28 to 140. (b) The Heterosexual Behavior Hierarchy—Female Form (Bentler, 1968) includes 21 autoerotic and couple sexual behaviors, and respondents rated each item on a 7-point scale, ranging from *no anxiety* (0) to *very much anxiety* (6). Items were summed for a total score, ranging from 0 to 147. Numerous investigators have noted that the presence of sexual anxiety is a significant disruptor for sexual excitement (e.g., Masters & Johnson, 1970; Wolpe, 1958).
3. To assess the orgasm phase, subjects were asked to provide an estimate of orgasm frequency in percentage of occasions attempted during sexual intercourse in the past month.

Global Sexual evaluation (GLOBE)—A 9-point scale is used, with descriptors ranging from *could not be worse* (0) to *could not be better* (8), with *adequate* (4) as the midpoint. Subjects picked one statement that best described their present sexual life.

Body image (BODY)—The Body Image Scale (Derogatis & Melisaratos, 1979) includes 15 statements about bodily appearance (e.g., height and weight) or body parts (e.g., legs, breasts, and face). Subjects indicated on a 5-point scale the magnitude of agreement/disagreement with a statement (e.g., my face is attractive) as it described their body/appearance at present.

Marital adjustment (MAR)—A modified version of the Dyadic Adjustment Scale (Spanier, 1976) was used. Included are areas of possible disagreement (e.g., finances, religion, household tasks, and career decisions), satisfaction (e.g., laughing together and working on a project), and global descriptions (e.g., *extremely unhappy* to a *perfect relationship*). The five items tapping sexual content were removed to minimize overlap with the other measures, and the remaining 27 items were scored.

Procedure

All subjects were outpatients at a large university hospital. Women receiving follow-up care during a 12-month subject-acquisition period through the Division of Surgical Oncology for breast cancer and the Division of Gynecologic Oncology for gynecologic cancer for the sites of disease and stages specified were contacted for study participation. Potential cancer subjects were not approached for participation if they met one of the following exclusion criteria: younger than 20 years or older than 70 years; history of mental disorder or organic brain syndrome resulting in hospitalization for more than 2 days; physically disabling illness or injury; significant sensory deficit; and previous cancer diagnosis. Potential subjects also had to have been sexually active (i.e., at least one episode of intercourse or an equivalent heterosexual activity per month) for the 6 months preceding their cancer diagnosis and treatment. Of those cancer subjects contacted for participation, there was a 6% refusal rate for the breast cancer sample and a 4% refusal rate for the gynecologic cancer sample.

At assessment, all women treated for cancer were free of disease and were experiencing no medical complication other than those normally voiced following their treatments. For the gynecologic cancer patients, these included mild tenderness at surgical site or mild fatigue following radiotherapy treatments. Such complaints were most commonly voiced at the shortest (2- or 4-month) follow-up intervals. The breast cancer patients reported their symptoms during nonchemotherapy periods to be minimal, and assessments for these patients always reflected activities during those nonchemotherapy weeks. During the chemotherapy week, symptoms were controlled using an antinauseant such as compazine.

Potential subjects for the healthy outpatient group were selected from weekly computerized rosters of women scheduled for an upcoming routine gynecologic exam in the Department of Obstetrics-Gynecology. Potential subjects with a comparable age (±5 years) and menopausal status as a cancer subject were each mailed a letter describing the investigation l week prior to their clinic visit. Within 4 days, each letter was followed with a telephone call to each potential subject from a research assistant who described the investigation and the reasons why her participation was solicited. There was a 15% refusal rate with this method; the primary reason for refusal was that the potential subject described herself as “too busy.” As with the cancer subjects, the gynecology subjects were not contacted or the assessment was discontinued if they met any of the previously stated exclusion criteria or if they received a benign gynecology diagnosis during their clinic visit.

Assessments were conducted in the respective outpatient clinics during routine follow-up visits. A 1-hr individual' structured interview was conducted by a female interviewer experienced in the assessment and treatment of sexual dysfunction and the psychosocial aspects of cancer.

Results

Preliminary Analyses

An assumption of the design employed here is that at an earlier point in time, prior to diagnosis for the cancer subjects, the three groups had comparable levels of sexual functioning and did not differ on dimensions that might covary with sexual outcome. The samples were matched on variables that have been found in other research to relate to the level of sexual activity among women (Kinsey, Pomeroy, Martin, & Gebhard, 1953; Melges & Hamburg, 1976; Newman & Nichols, 1960; Pfeiffer & Davis, 1972). One-way analyses of variance (ANOVAS) were conducted on other relevant demographic variables, including years of education, marital status, time with current sexual partner, employment status, and family income; none approached standard significance levels (*ps* > .10). [2] In addition, there were no significant differences on the past sexual activities scale; each of the three groups endorsed approximately 19 of the possible 24 items on the list. Thus, on the variables attempting to assess relevant demographic and sexuality dimensions, the samples were statistically equivalent.

Sexual Behavior

The measures reflecting current sexual behavior were initially analyzed with a one-way multivariate analysis of variance (MANOVA) because these measures were conceptualized as reflecting complementing aspects of the same construct. Results revealed an overall difference between groups, $F(6, 86) = 4.71$, $p < .01$. Follow-up univariates for each measure were also significant: current sexual activities scale, $F(2, 45)= 5.10$, $p < .01$; frequency of intercourse, $F(2, 45) = 5.30$, $p < .01$; and frequency of kissing, $F(2, 45) = 9.85$, $p < .01$.

Two types of follow-up orthogonal multiple comparisons were conducted for each measure. The first contrasted the scores of women with cancer and those of the healthy subjects. As shown in Table l, for each measure there was a significant difference, and the women with cancer reported significantly lower levels of sexual behavior. The second type of multiple comparison contrasted the scores from the two cancer groups to determine if differential levels of reduced sexual activity were found among the cancer patients. Only for the frequency of kissing were significant differences found, and the breast cancer subjects provided a significantly lower estimate of this sexual activity than did the gynecologic cancer subjects.

Sexual Response Cycle

The four measures reflecting sexual desire, excitement, and orgasm were analyzed in separate univariate ANOVAS because each was conceptualized as reflecting a distinct phase of the sexual response cycle. Mean group scores for each measure are displayed in the lower half of Table I. For the measure of sexual desire, significant differences between groups were not found between women with cancer and healthy women or between breast cancer patients and gynecologic cancer patients when contrasted. Significant differences were found, however, on the measures of sexual excitement. On the Sexual Arousability Index, the contrast between women with cancer and healthy outpatients was significant, $F(2, 44) = 3.71$, $p < .05$, and for the Heterosexual Behavior Hierarchy, the differences between these groups approached significance, $F(2, 44) = 2.49$, $p < .10$. No significant differences between the two cancer groups were found for either measure. For the estimate of orgasm frequency, significant differences were not found for either contrast.

[2]Grand means for the entire sample include the following: age, 46 years; education, high school degree plus additional training; marital status, married; time with current sexual partner, 5 years to 10 years; employment status, employed; and family income, $18,000 to $30,000.

Relationship Between Sexual Functioning, and Marital Adjustment and Body Image

A two-dimensional contingency table with chi-square analysis was used to test the independence of the women's evaluations of their current sexual life and adjustment in other areas, marital or body image. For the first relationship, the mean scores of the healthy group on the GLOBE ($M = 5.2$) and MAR ($M = 104$) were determined. These values were then used to assign subjects in each group to the respective cells to reflect a higher than average level or a lower than average level of functioning (i.e., GLOBE < 5, MAR < 104; GLOBE < 5, MAR ≥ 104; GLOBE ≥ 5, "MAR < 104; GLOBE ≥ 5, MAR ≥ 104). From the cell frequencies, a chi-square analysis was conducted to determine if the response probabilities were the same across each group. There were no significant differences due to the global evaluation categorization, group membership, or the interaction. Thus, it appears that the women's evaluations of their current sexual life were independent of their current marital adjustment.

A similar strategy was used to test the independence of evaluations of current sexual life and body image. The mean score of the healthy group on the BODY was determined ($M = 24.9$). This score and the GLOBE value were then used to assign subjects in each group to the respective cell. A chi-square analysis was conducted with the cell frequencies, and significant effects were found for the group factor, $\chi^2(2, N = 48) = 7.67$, $p < .05$. Cell frequencies for each group are displayed in Table 2.

Discussion

Specific aspects of sexual functioning for cancer patients that differed from those of healthy women were the frequency of sexual behavior and the level of sexual arousal. The sexual behaviors included the current frequencies of intercourse and kissing as well as a range of other sexual activities (e.g., varied intercourse positions, body touching, etc.). In contrast, the women with breast cancer or gynecologic cancer reported no differential responses on the indicants of sexual desire or orgasm.

The sexual behavior disruptions noted here are convergent with other investigations surveying only cancer patients. Prospective study of cervix cancer patients indicated that significant disruption (i.e., 30% of the sample) occurred 6 months to 12 months after treatment (Vincent et al., 1975). The longitudinal studies by Maguire et al. (1978) and Morris et al. (1977) estimated that the breast cancer patients who developed problems did so early, by the 3rd or 4th month, and when left untreated, the sexual problems for the majority did not resolve even by the 2-year follow-up. To provide preliminary evidence regarding the time course for sexual problem development among the present cancer samples, these data were reanalyzed blocking on the length of time since treatment (i.e., treatment ≤ 6 months previously vs. treatment > 6 months previously). There were no significant differences between the breast cancer sample and gynecologic cancer sample as a function of length of time since treatment or for the interaction of time and cancer site. This suggests that sexual behavior or response cycle deficits that develop may not be transitory.

Women treated for breast cancer also reported a significantly lower frequency of kissing with their partners than did the women treated for gynecologic cancer. Although the present design does not explain such an outcome, hypotheses may be suggested. One alternative is that the alteration in body form that results from mastectomy may produce a reluctance among women for any type of sexual or affectionate behavior that includes close body contact, such as partners holding one another when kissing. Similarly, sexual partners of breast cancer patients may feel some constraint when wanting to embrace and kiss their spouse for fear they might hurt their partners at the surgery site or possibly remind her of the change in form. This phenomena may not occur to the same extent for gynecologic cancer patients because there would not be any tactile reminders when being held that their sexual body is now different. Such understanding

of the reason for significant reductions in sexual behaviors would be useful when designing clinical interventions to enhance posttreatment sexual functioning.

Both women with cancer and healthy women's views of their current sexual life had little influence on their evaluation of their marital relationships. There was, however, a relationship between women's evaluations of their current sexual life and body image; the chi-square analysis indicated that the response probabilities were not the same for each sample. Examination of Table 2 indicates greater similarity between the breast cancer patients and the healthy cohort. The greatest discrepancy is that 82% of the gynecologic cancer sample reported poorer body image evaluations, in contrast to 31% of the breast cancer patients and 38% of the women in the healthy samples. These data for the breast sample are convergent with the few other empirical evaluations of body image among breast cancer patients (Polivy, 1977;Ray, 1977) that suggest that body image disruption is not as prevalent for breast cancer patients as commonly believed. In contrast, body image disruption may be a more prevalent problem for gynecologic cancer patients, but it may exert little influence on sexual functioning evaluations in that more of the gynecologic cancer patients with disrupted body image reported positive evaluations of their current sexual life than reported negative evaluations.

The present research contrasted subjects who were not randomly assigned to conditions but those who came from existing groups. The present matching strategy, assessment of past sexual activities, and examination of relevant descriptive variables provide important disconfirming information, but other important differences among the three female groups, might have existed. Hence, the present data only suggest that cancer diagnosis and treatment were instrumental in producing the reductions in sexual activity and the lowered evaluations of sexual arousability. Alternatively, these results may estimate the sexual outcomes during early recovery from a potentially curable but life-threatening chronic illness, rather than responses unique to cancer.

Although controlled prospective data with relevant comparison groups are necessary to confirm our findings, the present data are noteworthy in that significant reductions in specific phases of the sexual response cycle were found. To the extent that disrupted behavioral patterns during early recovery reflect specific rather than general problems, identification of these problems should provide the necessary framework for intervention development. Because the survival estimates for these women are positive, these individuals are most likely to seek clinical treatment for their sexual distress or dysfunction.

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Table I

Mean Group Scores on Measures of Sexual Functioning

Variable	Group		
	Breast cancer	**Gynecologic cancer**	**Healthy outpatients**
Sexual behavior			
Current sexual activity [a]	13.13	10.88	16.06
Frequency of intercourse[a]	2.81 (1/week)	2.88 (I/week)	3.81 (2–3/week)
Frequency of kissing [a,b]	4.19 (2–3/week)	6.06 (I/day)	7.19 (2–3/day)
Sexual response cycle			
Desire			
Preferred frequency of intercourse	3.88 (2–3/week)	3.25 (1/week)	3,83 (2–3/week)
Excitement			
Sexual Arousability Index[a]	53	59	70
Heterosexual Behavior Hierarchy	30	34	21
Orgasm			
Frequency of orgasm	48%	54%	42%

Note. Two types of follow-up orthogonal multiple comparisons were conducted for each measure.

[a] Cancer patients < healthy patients, $p < .05$.

[b] Breast cancer patients < gynecologic cancer patients, $p < .05$.

Table 2

Percentage of Subjects in Each Group Reporting Body Image (BODY) Scores Relative to Global Sexual Evaluation (GLOBE) Scores

		Body	
Group	**GLOBE**	**≤24 (in %)**	**>24 (in %)**
Breast cancer	<5	19	0
	≥5	50	31
Gynecologic cancer	<5	12	38
	≥5	6	44
Healthy outpatients	<5	19	19
	≥5	44	19

Note. GLOBE scores ≥5 are indicative of evaluations of current sexual life as *above average* or better, GLOBE scores <5 are indicative of evaluations *of average* or worse. BODY scores >24 are indicative of poorer body image than are scores ≤24.