"In Sickness and in Health"

Patterns of Social Support and Undermining in Older Married Couples

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The effects of gender, age, marital satisfaction, and physical impairment on patterns of giving and receiving social support and social undermining (e.g., personal criticism) were examined in two samples totaling 431 older married couples. In the first sample, data were collected from husbands and their wives, half of whom were long-term breast cancer (BC) survivors and half who constituted an asymptomatic, matched control group. The second sample included data from husbands and their wives who had recently been diagnosed to have breast cancer. Wives reported giving more social support to their husbands than they felt they received from them; and they reported giving more support than their husbands reported giving to them. Similarly, husbands reported receiving more social support from their wives than their wives reported receiving from them, except for the group of recently diagnosed BC. Advanced age was correlated with husbands' reports of receiving more social support, and in the two breast cancer groups, of also giving more social support and engaging in less social undermining. It was also found that among the women in the asymptomatic control group, those who were more physically impaired reported both giving and receiving less social support, and this was corroborated by husbands' reports. In contrast, there were no associations between wives' degree of impairment and social support in the two breast cancer groups. The differential effects were hypothesized to result from the husbands' causally attributing their wives' impairment and difficulties to internal characterological factors versus to external ones beyond their control (i.e., the BC disease).

Although social support has been shown to ameliorate and often buffer the adverse effects of stress on mental health and well-being and on physical health (for reviews see Antonucci, 1989; Cohen & Wills,

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1985; House, Landis, & Umberson, 1988), the reciprocal question of whether, and how, physical and mental health also affect the giving and receiving of social support has not been sufficiently addressed. Marital relationships, with their ongoing pattern of social transactions provide both an important and a convenient setting to examine the reciprocal effects of health and illness on social support. Indeed, most persons in society live significant portions of their adult lives in marital relationships in which the interaction with their spouses is often more frequent and intense than with other persons. The marital relationship is also replete with mutual expectations for the provision of social support, as well as opportunities for social conflict and undermining (e.g., acting in an unpleasant or angry manner toward spouse, criticizing the spouse, making the spouse feel unwanted).

Specifically, when one spouse has a serious illness, this condition may limit his or her energy to provide social support to the partner. This condition may also trigger the awareness and motivation of the other spouse to offer more social support to the ailing partner. Indeed, it is traditional in the United States for marital vows to specify a willingness to love and support one's partner in sickness as well as in health. Thus the pattern of social support may vary as a result of the illness and physical impairment of one of the partners. The reciprocal report of the spouses can thus provide an important vehicle to understand how social support patterns change due to the stress of physical illness and how these changes contribute to the coping and adjustment processes of those afflicted by the illness. Such information, in turn, could aid helping professionals counseling couples with a physically impaired spouse and their families.

Of various stressful diseases, breast cancer is a very serious, life threatening one; except possibly for AIDS, the diagnosis of cancer evokes far greater distress than any other disease, regardless of prognosis (Stechlin & Beach, 1966). Moreover, breast cancer is the second largest cause of cancer deaths among women, with 1 of every 11 American women expected to develop this disease in her lifetime

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(Seidman & Mushinski, 1983; Silverberg & Lubera, 1987). This life-threatening disease is most often contracted by older women. Indeed, of all risk factors, the most significant one is age with the incidence of breast cancer increasing rapidly as a woman enters her 40s; and one-half of all cases occur in patients 60 years of age or older (National Cancer Institute, 1981, p. 100).

All treatment options for breast cancer (radiotherapy, surgery, and chemotherapy) produce various forms of physical difficulties and impairments that require substantial periods of adjustment for most patients. Several studies on breast cancer patients have focused on a broadly defined process of adjustment, emphasizing the influence of social support and coping processes on mental health (Dunkel-Schetter & Wortman, 1982; Meyerowitz, 1980, 1983). A few longitudinal studies (DiMatteo & Hays, 1981; Vachon, 1979) and quasi-experimental studies (Bloom, Ross, & Burnell, 1978; Ferlic, Goodman, & Kennedy, 1979) reported that social support was a predictor of women's adjustment to breast cancer and contributed to their enhanced self-esteem and feelings of self-efficacy.

Moreover, recent research on social support and interpersonal transactions has expanded the repertoire of such exchanges to include the impact of social conflict and social undermining on well-being (Abbey, Abramis, & Caplan, 1985; Coyne & DeLongis, 1986; Rook, 1984). It thus becomes important to examine the patterns of socially undermining behaviors along with those of social support on women's adjustment to breast cancer. Several investigators have found that social conflict had an impact on well-being independent of the impact of social support when it originated from different partners in the social network (e.g., Abbey, et al., 1985). The question, though, remains whether within the context of the *same* relationship, social support and conflict are influenced by the same factors, and in the same way. Thus one goal of this article is to examine the pattern of social support and undermining as a function of physical illness and impairment.

Another goal is to identify how these patterns of social support and undermining are affected by characteristics of the spouses, including the effects of gender and age. Depner and Ingersoll-Dayton (1985) focused on these variables in analyzing data from a national sample of married adults 50 years of age or older. They found that women

perceived less social support within marriage than men, and older respondents were least likely to provide the various forms of social support that were measured. Antonucci and Akiyama (1987) also examined sex differences in the data of the above-mentioned national sample. Their investigation used a broader assessment of social support that included qualitative as well as quantitative support from the entire social network. In both of these investigations, the data were collected from married individuals rather than from married couples. In contrast, in the study reported below, reciprocal commensurate measures of the giving and receiving of social support as well as of social undermining were collected from both the husband and wife of each participating couple.

In addition to examining social support patterns as a function of the characteristics of the support givers and receivers, it is plausible to hypothesize that these patterns are affected by certain characteristics of the relationship itself. We thus hypothesize that couples who are satisfied with their relationship will report giving and receiving greater amounts of social support vis-à-vis their spouse and engage in fewer socially undermining behaviors.

Finally, the availability of reciprocal data from spouses on both giving and receiving of support can be used to address an additional issue in this area of research. Because practically all social support measures are based on self-reports from respondents, researchers have questioned whether social support measures reflect actual veridical transactions within social relationships or whether they are one person's subjective projections of such transactions based on his or her personality (e.g., Sarason, Sarason, & Shearin, 1986; Vinokur, Schul, & Caplan, 1987). The main concern here is that if social support measures and their reported beneficial effects on health are largely the result of personality, rather than of actual supportive behaviors, then interventions that are designed to provide more support would not bring about the desired beneficial effects (Cohen & Syme, 1985, pp. 16-17).

The examination of the veridicality of reports of socially supportive transactions hinges on the convergent validity of findings using different analyses. Three types of analyses can be used to produce findings that are relevant to this examination when the same commen-

surate measures of "social support provided" and "social support received" are collected from the actors engaged in these transactions such as marital partners. First, strong correlations between the reports of the givers and receivers of social support regarding the occurrence of these transactions or in the amount of support exchanged would provide initial evidence for the consensual validity of the reports. Second, an absence of significant discrepancy in the magnitude of reported support given versus support received would provide additional convergent evidence for the consensual validity of the reports. Third, additional evidence for the veridicality of the measures could rely on the well-established correlation between measures of received social support and positive mental health and well-being. This evidence would then depend on demonstrating that measures or provided support, as reported by the provider of support, correlate about as highly with the mental health and well-being of the target person as the measures of received support reported by the target person.

Were such empirical evidence regarding the veridicality of reports of social support available, these reports could be trusted to shed further light on the dynamic patterns of giving and receiving support as a function of the characteristics of those who give and receive the support within particular social relationships. Several studies have already begun to explore this issue. Antonucci and Israel (1986) found considerable evidence for the veridicality in the occurrence of social support transactions in a sample of persons over 70 years of age, particularly among spouses. Supportive evidence for the veridicality of the reported amount of social support, as contrasted to its occurrence, was obtained by Vinokur et al. (1987) in a study that focused on men 30 to 45 years old. This study employed multivariate LISREL analyses of longitudinal data that also modeled the effects of personality on the report of receiving support. It was demonstrated that the actual (i.e., veridical) transaction of giving support had twice as much influence on the target person's report of receiving support as did personality. Nevertheless, both of these demonstrations of the veridicality of social support measures were limited to special populations and age groups. The present investigation extends the examination of this issue to new populations known to differ in the degree of physical health and impairment experienced by the women.

Methods

SAMPLE OF SUBJECTS AND DATA COLLECTION PROCEDURES

The data for this study were drawn from two separate samples of middle-aged and elderly breast cancer patients and their husbands, as well as from a sample of a matched control group of women free of cancer and their husbands. The samples complemented each other with respect to the population and stage of disease: one involved a screening population characterized by early stage disease; the other was a community sample of a clinical population characterized by more recent and more advanced disease. Below is the description of the construction of the original samples that contain the subgroups of married couples that constitute the sample of this investigation.

The sample of long-term breast cancer survivors and their controls (the BCDDP sample). The subject population for this sample consisted of 10,056 women from the entire state of Michigan who voluntarily entered a screening program at the University of Michigan Breast Cancer Detection Demonstration Project (BCDDP) between 1974 and 1976. (For details about the BCDDP see Baker, 1982, and Norbeck, Rock, Callahan, Rosselle, & Threatt, 1982.) By April 1985, 197 women from this screening population were found to have developed invasive breast cancer.

Each of the 197 women with invasive breast cancer was randomly matched to a woman from the sample of the asymptomatic women (henceforth referred to as controls) who had the same sociodemographic characteristics at the time of entry into the screening program. The characteristics used in this matching procedure included age, marital status, number of children, education, income, and year of entry into the program.

Of the 197 matched pairs (394 women), 383 women (97.2%) could be contacted, that is, they were alive and had a known address. Of these 383 women, 349, or 91%, were successfully recruited as participants and provided information for the study. The final sample of 349 participants included 170 of the 197 original women with breast cancer (86%).

The community sample of recently diagnosed breast cancer patients (the SEER sample). This sample included 274 newly diagnosed breast

cancer patients 40 years of age and above consecutively identified between February and June of 1985 through the Surveillance, Epidemiology and End Results (SEER) cancer registry in Michigan. The registry is a population-based surveillance system administered by the Michigan Cancer Foundation. It encompasses the tri-county area of southeastern Michigan that includes the Detroit metropolitan area with 4 million residents. Medical and demographic information for all cancer cases from this area, excluding nonmelanoma skin cancer, is obtained from 66 hospitals and other relevant facilities such as private laboratories, radiation therapy clinics, and hospices.

The 274 participating patients represent 77% of the originally identified sample of 356 eligible breast cancer patients. (The 82 eligible patients who did not participate in the study included 11 whose physicians did not approve their participation, 12 who refused to participate, 29 who were medically incompetent, 4 who died in the interim, 21 who were not available for miscellaneous research such as moving, and 5 who had language problems.)

Married couple samples in this study. The analyses in this investigation are based only on the data from the married women and their spouses. Thus the respective BCDDP and SEER samples for this study included the 267 and 164 married couples (out of the totals of 272, and 168 couples, that is 98% and 97%) from whom data were available from the wife *as well as* from her husband.

Data collection procedures. In both samples, each woman received a letter asking her to participate in this study on women's health, stress, and well-being. The letter emphasized that participation was completely voluntary but important for the scientific validity of the study, and it assured that the information provided would be kept in strict confidence. Subsequently, an interviewer called and set up an appointment for an interview. The interviewer also requested that the woman fill out a self-administered questionnaire that would be mailed to her in advance and that she ask her husband to fill out another self-administered questionnaire. Upon completion, both questionnaires were to be sealed in separate envelopes, which later were picked up by the interviewer. In addition to collecting data by self-administered questionnaires, personal interviews were conducted at the respondents' homes by professional interviewers from the Institute for Social Research and the Michigan Cancer Foundation.

MEASURES

The measures that were used for the analyses reported in this article are presented below. Where applicable, the Cronbach coefficient alpha is included as an indicator of the internal reliability of the measure (Nunnally, 1978). Whenever possible, standardized instruments were used that have demonstrated reliability and validity in earlier studies. The personal interviews were used to collect the data on demographics, social support and social undermining, marital satisfaction, and physical functioning and impairment. The data on the mental health and well-being outcomes were gathered by the self-administered questionnaires.

Demographics

The measures of demographic characteristics are based on standard, widely-used instruments of the Survey Research Center at the University of Michigan's Institute for Social Research. These characteristics included age, education, income, and marital and employment status.

SOCIAL SUPPORT, SOCIAL UNDERMINING, AND MARITAL SATISFACTION

Social support. The social support items were chosen to represent the four functions of social support suggested by House (1981): emotional, appraisal, informational, and instrumental support. (For details on the validity of a measure based on six of these items see Vinokur et al., 1987.) Several studies have shown that the various support functions assessed by these items are highly interrelated and might represent a single underlying dimension of support (e.g., Antonucci & Israel, 1986). The responses to all of our social support items were therefore averaged to provide one index.

Social support received was assessed by asking each respondent to indicate on 5-point scales, ranging from 1 = *not at all* to 5 = *a great deal,* how much "[does your spouse] provide you with encouragement," with "useful information," "say things that raise your self-confidence," "listen to you when you need to talk," "show that he/she

cares about you as a person," "understand the way you think and feel about things," "helps you understand and sort things out when you are troubled by something," "provide you with direct help . . . do things for you, or give you things you need," and "make you feel you can rely on him/her when you need to." The index of received support based on these nine items had alpha coefficients of .92 and .90 for the BCDDP and the SEER samples, respectively.

Social support provided. In the same vein, the respondents were also asked to rate on same type of 5-point scales the extent to which they provided their spouse with the same nine types of supportive behaviors. The index of provided support based on these nine items had alpha coefficients of .87 and .85 for the BCDDP and the SEER samples, respectively.

Being the target of (i.e., receiving) social undermining. This variable was assessed by asking each respondent to indicate on the 5-point scales described above how much "[does your spouse] act in an unpleasant or angry manner toward you," "make your life difficult," "act in ways that show he/she dislikes you," "make you feel unwanted," "get on your nerves," and "criticize you." In addition, *engaging in (i.e., giving) social undermining* was assessed by asking the respondents to rate how much they display each of the six types of negative behaviors toward their spouse. The indices based on the six items had coefficient alphas that ranged from .85 to .90.

Marital satisfaction was assessed by answers to seven questions that have been shown to predict maintenance versus dissolution of marital relationships and that are suitable for assessing satisfaction with any dyadic relationship (Spanier, 1976). The respondents were asked to provide ratings on 6-point scales, which ranged from 1 = *never* to 6 = *all the time,* to such questions as "How often do you feel satisfied with this relationship?" "How often are things between the two of you going well?" "Do you ever regret becoming involved with him or her?" The alpha coefficient of this measure ranged from .78 to .82.

Physical Functioning and Impairment

Based on the five subscales, an overall index of *physical impairment* was constructed that included an assessment of difficulties in

physical functioning, the number of diagnosed conditions, the number of symptoms and ailments, and the number of the above conditions and symptoms that cause limitation in activities. The scores of the five subscales were standardized and averaged. This overall index of impairment had alpha coefficients of .78 and .85 for the BCDDP and SEER samples, respectively.

Physical functioning was assessed by the level of difficulty in performing each of the 10 physical activities that include pushing or pulling large objects over 10 pounds, stooping, lifting items under 10 pounds, lifting items over 10 pounds, reaching, writing, standing in a place for 15 minutes, sitting for an hour, walking up a flight of stairs, and walking half a mile. The above items were originally derived from Rosow and Bresslau (1966), and from Nagi (1976) and were used in the Framingham Massachusetts epidemiological study of heart disease (Jette & Branch, 1981). Together, the 10 items represent a variety of different physical capabilities: upper- and lower-body strength, balance, and fine dexterity. The respondents were asked to rate the level of difficulty using the categories ranging from 1 = *no difficulty,* to 4 = *a lot of difficulty* (*or was ordered by the physician not to do*). The index had alpha coefficients of .87 and .86 for the BCDDP and SEER samples, respectively.

Medical condition: diagnosed conditions, symptoms, and ailments. Concurrent health conditions were examined in a variety of ways by questions on diagnosed conditions and on symptoms and ailments, as well as by questions on limitations in activities caused by these conditions and symptoms. These questions were based on the survey instrument developed by the Human Population Laboratory (Berkman & Breslow, 1983). They were adapted and expanded by Satariano and his colleagues (Satariano, Ragheb, & Dupuis, 1989) based on recommendations by Ouslander and Beck (1982) that diagnosed conditions and symptoms be examined separately. The scales that were used in the current investigation are described below.

Diagnosed conditions and their activity limitations were assessed by a list of 20 conditions. For each condition on the list, the respondent indicated whether she had ever been diagnosed by a physician as having the condition, and if so, in what year, and whether or not her regular activities were limited because of that condition.

Symptoms, ailments and their activity limitations were assessed by a list of 21 symptoms and ailments. For each 1, the respondent indicated whether *at the present time of the survey* she was having the symptom or ailment. If she had the symptom or ailment, she indicated in what year she first had it and whether or not her regular activities were limited because of that symptom or ailment.

Mental Health and Well-Being Outcomes

Poor mental health was assessed by an index based on the mean of three subscales of Anxiety and Depression. The subscales were based on the Hopkins Symptom Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974) and had Cronbach coefficient alphas of .81 and .86, respectively. The alpha coefficient of the poor mental health index was .80 and .87 for the BCDDP and the SEER samples, respectively.

Perceived role and emotional functioning was based on a measure taken from Caplan et al. (1984) with an alpha coefficient of .92 and .93 for the BCDDP and the SEER samples, respectively. It provided an assessment from the wife of how she handled her roles, interpersonal relationships, and emotions. The measure included 14 questions such as: "How well have you done in handling responsibilities and daily demands? . . . working around the house or apartment? . . . getting along with others? . . . acting in a relaxed manner? . . . staying level headed?" and so on.

Husband's report of the role and emotional functioning of his wife was based on the same set of questions that was asked of the wife herself. The alpha coefficient of this measure was .94 in each of the two samples.

Other assessments of psychological outcomes were based on a broad range of multi-item measures that included the following: anger and irritation, resentment, self-esteem, internal locus of control, positive morale, perceived quality of life, perceived health compared to others, perceived threat of health or medical condition, social contacts, difficulties getting places and in doing household chores, perceived stress from the most upsetting experience or condition that is troubling for some time, and for the breast cancer group, perceived stress from the experience with breast cancer at the present time.

Results

DEMOGRAPHIC AND OTHER CHARACTERISTICS OF THE SAMPLES

The demographic characteristics of the two samples of married respondents are presented in Table 1. As mentioned, in both samples, data were collected from over 97% of the married couples of the larger samples described above.

Compared to the SEER sample of the recently diagnosed BC patients, the females in the BCDDP screening sample of the long-term survivors and their controls (as well as their husbands) were older (59 vs. 55 years of age), more educated (2.57 vs. 2.24), and had higher family income (median of $38,480 vs. $33,100). The BCDDP sample included a larger proportion of wives who were homemakers (61.5% vs. 48.8%), and retired (27.6% vs. 9.1%). In turn, when compared to the BCDDP sample, the SEER sample included a far greater proportion of wives who were employed (37.8% vs. 3.8%, respectively). The two samples included predominantly white female respondents (97% and 88%) (as most likely are their spouses), who did not differ in mean number of offspring (2.80 and 2.88).

In terms of the medical status of the women, the SEER sample included 164 females who had been recently diagnosed and treated for breast cancer between 2 and 5 months prior to the interview. The BCDDP sample included 137 women who were diagnosed and treated for breast cancer in the last 10 years (over 50% had their breast cancer over 5 years prior to the data collection). The BCDDP study also included a matched control group of 115 women asymptomatic of all cancers, and 15 women who had other forms of cancer, mostly skin cancer.

DIFFERENCES BETWEEN THE ASYMPTOMATIC AND THE BREAST CANCER GROUPS OF THE BCDDP SAMPLE

Student and pair-matched correlated *t* tests were conducted to examine whether the two BCDDP groups, that is, the asymptomatic controls and the BC patients, differed with respect to demographic characteristics, various adjustment outcomes that focused on mental health and functioning, and patterns of social support and under-

Table 1
Demographic Characteristics of the BCDDP and the SEER Couple Respondents

Description of the Characteristic	BCDDP Sample Long-Term Survivors and Controls (n = 267 couples) Percent, Mean, Median or Number	SEER Sample Recently Diagnosed BC Patients (n = 164 couples) Percent, Mean, Median, or Number
Wife's age (in years, mean)	59.46	55.45
Husband's age (in years, mean)	61.60	57.31
Age distribution, wives:		
43-54	29.2%	51.8%
55-64	42.3%	29.9%
65-74	25.5%	15.2%
75-84	3.0%	3.0%
Education level	2.57[a]	2.24[a]
Family income (median)	$38,480	$33,100
Number of children	2.80	2.88
Wife's employment status		
Employed	3.8%	37.8%
Homemaker	61.5%	48.8%
Retired	27.6%	9.1%
Disabled, unemployed, and other	7.0%	4.2%
Ethnicity (race)		
White	97.4%	88.4%
Black	1.4%	8.5%
Other	1.2%	3.1%
Current medical status, (N)		
Asymptomatic of all cancers	(115)	(0)
Having breast cancer	(137)	(164)
Having other types of cancer	(15)	(0)
Total	(267)	(164)

a. Mean of the following codes: 1 = grade school, 2 = high school, 3 = college, 4 = postgraduate.

mining. There were no statistically significant differences between these groups in any of the demographic characteristics and the social support and undermining measures that were collected. Moreover, of 34 measures of psychological, social, and physical adjustment outcomes, only 2 measures revealed a statistically significant difference between these groups. The breast cancer group manifested lower scores

on the internal locus of control measure compared to the asymptomatic group, (3.54 vs. 3.37, respectively; $t = 2.91$, d.f. 247, $p < .01$), and greater number of diagnosed medical conditions (2.3 among asymptomatics vs. 3.6 among the BC group, $t = -5.27$, d.f. 250, $p < .001$). However, the difference in the number of diagnosed conditions between the two groups represented the fact that breast cancer is one of those diagnosed conditions; when the BC condition was excluded from the index, the difference between the two groups disappeared.

Furthermore, the BC patients perceived their breast cancer condition to be only a little stressful at the time of interviewing. In contrast, the asymptomatic women rated their most stressful and upsetting condition as somewhat stressful. In other words, at the time of interviewing, the stress from the breast cancer condition for this group of long-term survivors was less than that of other, normally occurring, most upsetting situations in the lives of comparable women (1.94 vs. 2.98, respectively; $t = 7.17$, d.f. 238, $p < .001$).

It thus seems warranted to conclude that, *as a group,* the breast cancer patients manifested practically the same level of mental health, physical and emotional well-being, and quality of life as the asymptomatic group of women from the same screening population.

It is important to note that over half of the breast cancer patients in our sample, that is, 53%, were diagnosed with breast cancer over 5 years preceding the time of the study. Furthermore, the disease's severity in terms of staging was low, with 70% of the cases having no nodal involvement. The excellent adjustment of these breast cancer patients may reflect the fact that, as a group, these women represent long-term survivors of breast cancer of lesser severity than usually found in clinical populations. This pattern of results from the sample of married women is almost identical to what was found in the analyses of the entire sample that also included the women who were single, divorced, and widowed (see Vinokur, Threatt, Caplan, & Zimmerman, 1989).

PATTERN OF GIVING AND RECEIVING SOCIAL SUPPORT AND SOCIAL UNDERMINING BY HUSBANDS AND WIVES

The patterns of receiving and giving of social support and undermining by spouse's gender are displayed in Table 2. In the BCDDP

Table 2
Means, Mean Difference, and t Test for Provided and Received Social Support and Social Undermining by Husbands and Wives in Two Samples of Women

Social Support and Social Undermining	BCDDP Sample Long-Term Survivors and Controls			SEER Sample Recently Diagnosed BC Patients		
	Means	Difference (*SD*)	*t* Test	Means	Difference (*SD*)	*t* Test
Social support						
Wife gives	4.21	.16	4.46***	4.33	.19	4.02***
Wife receives	4.05	(.58)		4.14	(.61)	
Husband gives	4.11	−.08	−2.44*	4.23	.09	1.47
Husband receives	4.18	(.50)		4.14	(.67)	
Wife gives	4.23	.12	3.42***	4.34	.11	1.95#
Husband gives	4.11	(.58)		4.22	(.62)	
Wife receives	4.08	−.10	−2.33*	4.14	−.01	−.10
Husband receives	4.18	(.70)		4.15	(.92)	
Husband gives	4.11	.02	.55	4.22	.08	1.11
Wife receives	4.08	(.68)		4.14	(.78)	
Wife gives	4.23	.04	1.27	4.34	.19	2.83**
Husband receives	4.18	(.56)		4.15	(.70)	
Social undermining						
Wife gives	1.93	.18	6.25***	1.91	.16	3.90***
Wife receives	1.75	(.47)		1.75	(.51)	
Husband gives	1.83	.09	3.46***	1.67	−.07	−1.49
Husband receives	1.74	(.43)		1.74	(.53)	
Wife gives	1.94	.10	2.87**	1.89	.25	4.78***
Husband gives	1.83	(.57)		1.64	(.56)	
Wife receives	1.73	−.01	−.24	1.71	.00	.00
Husband receives	1.74	(.58)		1.71	(.61)	
Husband gives	1.83	.10	3.28***	1.64	−.06	−1.16
Wife receives	1.73	(.51)		1.71	(.59)	
Wife gives	1.94	.20	5.83***	1.90	.19	3.15**
Husband receives	1.74	(.54)		1.71	(.64)	

#$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

sample, as already mentioned, no differences were found between the breast cancer patients and their asymptomatic matched controls in all of the adjustment outcomes, as well as the social support and undermining measures. Therefore the data of these two groups are pooled together in Table 2.

The additive and interactive effects of illness and gender on the patterns of social support and undermining were examined using a

2 x 2 x 2 analyses of variance. Separate analyses were performed for the social support and social undermining measures. The first factor in these analyses included the two levels of degree or severity of breast cancer illness and physical impairment as represented by the sample. That is, the BCDDP sample included women who were asymptomatic or long-term survivors of breast cancer whose mental and physical health was indistinguishable from the asymptomatic women; the SEER sample included women who were recently diagnosed and treated for breast cancer and who were significantly more physically impaired than the women from the BCDDP sample. The levels of the second and third factors included giving versus receiving support (or undermining), and gender (wives vs. husbands). The cell means of the ANOVA analyses are displayed in Table 2 in the first four rows of the social support and social undermining measures, respectively.

The ANOVA analysis for the social support measure yielded a statistically significant main effect for giving and receiving ($F = 16.45$; d.f. 1,360; $p < .001$) and two statistically significant interaction effects. The first interaction effect was between gender and the giving of support; wives reported giving of support more than their husbands ($F = 13.86$; d.f. 1,360; $p < .001$). The second interaction effect was between sample and the giving of social support; the respondents in the SEER sample, both husbands and wives, reported giving social support more than the respondents of the BCDDP sample ($F = 5.56$; d.f. 1,360; $p < .02$).

The ANOVA analysis for the social undermining measure yielded two statistically significant main effects and two statistically significant interaction effects. The two main effects were due to gender ($F = 11.12$; d.f. 1,358; $p < .001$), and giving versus receiving ($F = 37.96$; d.f. 1,358; $p < .001$). One statistically significant interaction was between gender and the giving of social undermining; wives reported giving undermining more than the husbands ($F = 21.93$; d.f. 1,358; $p < .001$). The second interaction effect was again between sample and the giving versus the receiving of social undermining. In the SEER sample, husbands reported being engaged in substantially less social undermining than the husbands in the BCDDP sample ($F = 6.29$; d.f. 1,358; $p < .01$).

In sum, the effects of gender are very similar in both samples. Wives tend to give more social support to their husbands than they receive

from their husbands, and they give more social support than their husbands report giving to them. The same pattern holds for social undermining. One noted difference between the samples is that both husbands and wives in the SEER sample report giving more social support than they do in the BCDDP sample. Another noted difference between the samples is that husbands in the SEER sample report engaging in significantly lower levels of social undermining than the husbands in the BCDDP sample.

Evidence for convergent validity in the pattern of social support is manifested most clearly in the BCDDP sample. First, the correspondent measures of one spouse's report of giving, with the other spouse's report of receiving support were correlated substantially in the BCDDP sample (both rs = .53, $p < .001$) and moderately in the SEER sample (r = .32 and .40, both ps < .001).

Second, we find that the husbands' report of giving support was equally predictive of their wives' mental health and functioning, as their wives' own report of receiving social support. For example, the correlations between husbands' report of giving social support and their wives' depression and role and emotional functioning measures were −.19 and .33, respectively (both ps < .001); likewise the correlations of the wives' own report of receiving support with their own report of depression and role and emotional functioning were −.20 and .27, respectively (both ps < .001). However, in the SEER sample, it is only the wives' report of receiving support that is significantly correlated with their level of depression (r = −.21, $p < .01$), and functioning (r = .30, $p < .001$). The correlations of husbands' report of giving support and their wives' depression and functioning were negligible (r = −.11 and .12, n.s., respectively).

Other analyses regarding the validity of the social support measure was based on paired t tests of the spouses' reports of giving and receiving social support. The means of these analyses are displayed in the last four rows of the social support measure in Table 2. In both samples, additional evidence for the validity of the social support measure was found in the high degree of matching between the husbands' report of giving and the wives' report of receiving social support. There were no significant differences between the reported amounts of support given and received. The BCDDP data also contain a parallel pattern of convergence; there is no significant difference

between the wives' report of giving social support and their husbands' report of the amount of support they received. Only in the SEER sample do we find a statistically significant discrepancy between the reports of the wives' giving and the husbands' receiving social support ($t = 2.83, p < .01$).

Evidence for convergent validity in the reports of social undermining is also manifested somewhat more clearly in the BCDDP than in the SEER sample. First, the correspondent measures of one spouse's report of engaging in undermining behaviors with the other spouse's report of being the target of these behaviors were again correlated substantially in the BCDDP sample ($r = .57$ and $.58$, $p < .001$), but moderately in the SEER sample ($r = .36$ and $.37$, both $ps < .001$).

Second, as with social support measures, we find that husbands' report of engaging in undermining behaviors was equally predictive of the mental health and functioning of their wives, as their wives' own report of being undermined by the husbands. For example, in the BCDDP sample the correlations between husbands' report of undermining their wives and their wives' depression was .19 ($p < .01$), and the husbands' report of undermining with their wives' role and emotional functioning was $-.28$ ($p < .01$). Similarly, the correlations between the wives' depression and functioning with their report of being undermined were .20 and $-.24$ (both $ps < .001$).

In the same vein, we find that in the SEER sample, predictions of wives' mental health and functioning are as accurate when they are based on the husbands' report of undermining their wives as when they are based on the wives' report of being undermined by the husband. For example, the correlations between husbands' report of undermining their wives and their wives' depression and role and emotional functioning measures were .26 and $-.32$, respectively (both $ps < .01$). Similarly, the correlations between wives' depression and functioning with their report of being undermined were .22, and $-.34$ (both $ps < .01$).

Again, the final analyses regarding the validity of the social undermining measure were based on paired t tests of the spouses' reports of engaging in (giving) or being the target of (receiving) social undermining. The means of these analyses are displayed in the last four rows of the social undermining measure in Table 2. There were substantial discrepancies in the *amounts* of social undermining behav-

iors in which the spouses reported they engage versus being the target of such behaviors. In both samples, the wives reported engaging in significantly more undermining behaviors toward their husbands than the husbands reported perceiving themselves to be the target of such behaviors ($t = 5.83, 3.15$; $p < .001, .01$, respectively). In addition, the husbands in the BCDDP sample reported that they engaged in undermining behavior significantly more so than the wives perceived being the target of such behaviors ($t = 3.28$; $p < .001$).

The effects of marital satisfaction. In both samples, the correlations between marital satisfaction and all the measures of giving and receiving social support were all positive, high, and statistically significant beyond the .001 level, and they ranged between .52 and .74. In the same vein, in both samples, the correlations between marital satisfaction and all the measures of social undermining were also high, and statistically significant beyond the .001 level, but negative. These correlations ranged between −.51 and −.69. However, it is important to note that these strong and consistent correlations do not provide an indication of the causal effects of marital satisfaction on patterns of support; namely, although marital satisfaction may increase social support, it is equally likely to be an outcome of support.

The effects of age and wife's physical impairment. To examine the effects of age and of the wife's physical impairment on the patterns of social support and undermining, product-moment correlations were computed between these variables and the social support and undermining measures. Because the age of the husbands was very highly correlated with the age of their wives (.87 and .77 in the two samples), these correlations were computed with respect to the mean age of the spouses (referred to as couple's age). The analyses of the correlations between impairment and support revealed distinctly different patterns of correlations for the asymptomatic controls in the BCDDP sample when compared with the cancer patient groups in the BCDDP and in the SEER samples. All of these correlations are thus presented separately for these three groups in Table 3.

For the two subgroups in the BCDDP sample and the SEER sample, advanced age was correlated with husbands' reports of receiving more social support ($r = .19, .17$, and $.16$; $p < .05, .05$, and $.10$, respectively). In the two breast cancer groups, advanced age was also correlated with husbands' reports of giving more social support ($r =$

Table 3
Product-Moment Correlation Coefficients Between Provided and Received Social Support and Undermining and Couple's Age, and Wife's Marital Satisfaction and Physical Impairment

	BCDDP Sample				SEER Sample	
	Asymptomatic of Cancer Controls		Breast Cancer Patients Long-Term Survivors		Recently Diagnosed BC Patients	
Social Support and Social Undermining	Couple's Age	Wife's Impairment	Couple's Age	Wife's Impairment	Couple's Age	Wife's Impairment
Social support						
Wife gives	−.08	−.20*	.00	−.03	.14#	−.08
Wife receives	−.01	−.35***	.07	.00	.14#	−.09
Husband gives	.09	−.18#	.20*	.04	.18#	.03
Husband receives	.19*	−.17#	.17*	-.05	.16#	.00
Social undermining						
Wife gives	−.06	.27**	−.12	.08	−.02	.26***
Wife receives	.07	.34***	−.05	−.02	−.03	.18*
Husband gives	−.03	.22*	−.23**	−.12	−.22*	.02
Husband receives	−.11	.24**	−.15#	−.08	−.09	.11
Others						
Couple's age	—	.18*	—	.15#	—	.15#
Marital satisfaction	−.04	−.32***	.19*	.00	.15#	−.13#

#$p < .10$; *$p < .05$; **$p < .01$; ***$p < .001$.

.20 and .18; $p < .05$ and .10), and engaging in less social undermining ($r = -.23, -.22$; $p < .01$ and .05).

Effects of wife's physical impairment on social support were dramatically different for the asymptomatic group when compared to the two groups of women with breast cancer. In the two breast cancer groups, the women's level of physical impairment was not correlated with any of the measures of social support. In sharp contrast, in the group of the asymptomatic women, physical impairment was negatively correlated with wives' reports of giving or receiving social support ($r = -.20, -.35$; $p < .05$ and .001). In addition, husbands' reports of giving and receiving support were consistent with their wives' reports in also correlating negatively with wives' physical impairment ($r = -.18, -.17$; both $p < .10$). This consistency again affirms the validity of the reports on giving and receiving social support. Moreover, the differences between the correlations of the

asymptomatic women and the breast cancer patients of the BCDDP and of the SEER sample in wives' receiving and husbands' giving support and impairment were statistically significant beyond the .05 level. In contrast, the differences in these or other correlations between the two breast cancer samples were all statistically not significant.

Furthermore, with regard to social undermining, all the reports on giving and receiving by both husbands and wives were correlated with the wives' physical impairment. That is, the more serious the impairment, the more social undermining was communicated by both wives and their husbands toward each other. These correlations were fairly sizable, ranging from .22 ($p < .05$) to .34 ($p < .001$). A similar correlation between wives' impairment and social undermining was also obtained in the SEER sample, but only with respect to the wives' report of giving and receiving social undermining ($r = .26$ and .18; $p < .001$ and .05). The differences between the correlations regarding wife's impairment and all the measures of undermining of the asymptomatic women and the breast cancer patients of the BCDDP were all statistically significant beyond the .05 level.

Finally, the adverse effects of the wives' physical impairment on their ability to give, and more important, to receive social support and avoid being undermined is also reflected in the effects of impairment on marital satisfaction. In the asymptomatic subgroup of the BCDDP sample, there is a sizable negative correlation between the degree of wife's impairment and her marital satisfaction ($r = -.32$; $p < .001$). In contrast, this correlation in the BCDDP and the SEER breast cancer groups is .00, and –.13, respectively. Consistent with the data on social support and social undermining, the difference in this correlation between the asymptomatic and the breast cancer patients from the BCDDP is statistically significant ($t = 3.12$, $p < .01$).

Summary and Discussion

The various patterns of results that were described above appear to be consistent with the known differences among the subgroups and samples in terms of the prevalence of breast cancer, its recency and seriousness, and its effects on physical impairment and mental health (Baker, 1982; Psychological Aspects of Breast Cancer Study Group, 1987; Vinokur et al., 1989; Vinokur, Threatt, Vinokur-Kaplan, &

Satariano, in press). In the SEER sample, the breast cancer patients were recently diagnosed patients and had significantly more advanced breast cancer than those in the BCDDP sample from a screening population (means of staging index were 5.02 vs. 3.80, respectively; difference $p < .001$). Consequently, they were also found to be significantly more impaired than the longer surviving breast cancer patients in the BCDDP sample; the latter, in turn, did not differ from their asymptomatic controls.

In the BCDDP sample including both the long-term survivors and their controls, the general pattern of wives' giving more social support than they receive from their husbands, is in fact a replication of findings based on a representative national sample of married persons 50 years of age and older (Antonucci & Akiyama, 1987; Depner & Ingersoll-Dayton, 1985). Again, this pattern seems to be different in the SEER sample with the more seriously ill breast cancer patients. In that sample, the husbands reported giving somewhat more social support than they received, and the report of how much the husbands gave was corroborated by the wives' report of how much support they received. Presumably, the husbands were responding to the recency of treatment that their wives had received for a more serious illness by providing more social support.

Another indication of the effect of the breast cancer on the pattern of support in the SEER sample is the significant discrepancy between wives' reports of giving support relative to husbands' reports of receiving support. This discrepancy may reflect the predicament of a wife who is seriously ill and whose attempts to be supportive are more difficult and personally costly, hence perceived by her to be more intense than her husband either perceives them to be or actually feels being helped by those attempts.

The pattern of social undermining behavior revealed indications of the husbands' response to their wives' illness. In the BCDDP sample of both patients and their asymptomatic controls, the husbands report engaging in more undermining behavior toward their wives than they receive; in the SEER sample, they report engaging in somewhat less undermining than they report receiving. Moreover, the amount of social undermining they report as giving is significantly less than that of the husbands in the BCDDP sample.

The wives in both samples report that they engage in more social undermining than they are the target of these acts. The same pattern is found among the husbands in the BCDDP sample. Thus it appears that these spouses are more sensitive and critical of their own undermining behaviors than is perceived or interpreted as such by their spouses. Husbands in the SEER sample report engaging in much less social undermining than the general pattern suggests, and this tendency coincides with their being more positively supportive. It seems that the greater support and lesser undermining are their responses to the more recent and serious breast cancer of their wives. In contrast, the behavior of the husbands in the BCDDP samples reflects less of this sensitivity to their wives.

Finally, the most striking, and perhaps surprising, differences among the subgroups and samples in the pattern of social support and undermining appear in Table 3 in relation to the wives' level of physical impairment. Only in the asymptomatic group did we find sizable and consistent adverse effects of wives' physical impairment on all measures of giving and receiving social support and undermining. This difference stands out in the face of the absence of such effects in the subgroup of long-term breast cancer patients from the same population, which has been shown to manifest the same levels of adjustment, mental health, and physical functioning.

A possible explanation for this pattern of association between physical impairment and social support among asymptomatic women, and its absence among women with breast cancer, may reside with the husbands' attribution regarding the causes of their wives' difficulties in functioning associated with their physical impairment. We speculate that for the husbands of the wives with breast cancer, this serious life-threatening disease may be a salient and identifiable causal factor for the wives' impairment and difficulties. The husband's efforts to provide social support and to refrain from social undermining are therefore not contingent on the wife's degree of impairment and difficulties; hence, the absence of significant correlations between wives' degree of impairment and husbands' provision of social support or undermining.

In contrast, the impairment and difficulties of the wives in the asymptomatic subgroup may not be perceived by the husbands as the

result of an external factor beyond their control but rather as reflecting internal characterological causes such as lack of motivation, hypochondria, or the like. It is likely then that such attributions lead to blame, malaise, lower marital satisfaction, social undermining, and the withholding of social support. This tendency is indicated by the negative correlations between wives' level of impairment and their own and their husbands' level of marital satisfaction ($r = -.32, -.18$, respectively; $p < .001, .10$). In contrast, these correlations were respectively .00, −.04, for the wives and husbands of the breast cancer group of the BCDDP, and −.13 and .00 for the wives and husbands in the SEER sample. Obviously, firmer evidence in support of our interpretation of the pattern of results with respect to impairment would require more specific and direct measures of husbands' causal attributions of their wives' impairment and functioning deficits.

Evidence of convergent validity and veridicality of the report on social support is strongest for the BCDDP sample which consists of asymptomatic women as well as their counterpart long-term breast cancer survivors who were shown to possess equally good mental and physical health. The degree of consensus on these reports deteriorated in the SEER sample, which included recently diagnosed and treated breast cancer patients with more serious, advanced disease. Thus the women's more strenuous and debilitating physical condition may have required them to make greater efforts to provide social support to their husbands; this "extra efforts" may also have affected these women's perception that the support they gave was greater than their husbands perceived it to be.

In the final analysis, it is important to note that the patterns of social support and undermining that were described in this article were focused on the transactions between older spouses. The effects of illness on these patterns were examined with respect to the serious illness and impairment of the wife. The results do not necessarily represent the more encompassing transactions with the entire social network or the effects of husband's illness on these patterns. In a broader investigation of social support from the entire network, Antonucci and Akiyama (1987) found that "women have larger network and receive support from multiple sources, while men tend to rely on their spouses more exclusively" (p. 737). It thus seems important that further examinations of the effects of support and undermining on

health and well-being include not only the influence of the spouse but also that of all other significant members in the social network. Similarly, from a gerontological perspective, there is a need to investigate the effects of illness on patterns of social support in the more common occurrence when the husband is seriously ill and physically impaired.

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