ORIGINAL ARTICLE

Disengagement and Social Support Moderate Distress among Women with a Family History of Breast Cancer

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■ **Abstract:** Using a cross-sectional, exploratory design, this pilot study analyzed the relationships between familial history of breast cancer and psychological distress in order to evaluate who is more distressed and to assess the possible need for intervention. Coping style, social support, and family relations were investigated as potential moderators of these relationships. Participants were 45 women with a familial history of breast cancer recruited from the Family Registry for Breast Cancer (FRBC) at the Northern California Cancer Center (NCCC). Contrary to previous reports of similar cohorts, the overall level of psychological distress in this cohort was comparable to normative samples. The number of relatives with breast cancer was related to distress as measured by the State-Trait Anxiety Inventory (STAI) scale, but there was no significant differentiation in distress associated with the number of first-degree as compared to second- and third-degree relatives with breast cancer. Having more relatives that had died from breast cancer was associated with greater distress on a number of measures. The number of first-degree relative deaths, including maternal death, was also associated with distress. Positive and network support, disengagement coping responses, and family cohesion were each significant moderators of the impact of family history on distress. This association between distress and disengagement is similar to that found in metastatic breast cancer patients themselves, and the findings suggest a subgroup that merits and might respond to more intensive intervention to provide support and facilitate emotional expression. ■

Key Words: coping, distress, family, social support

There is considerable evidence regarding the psychological distress experienced by spouses and relatives of women with breast and ovarian cancer (1–3). Findings suggest that there are indeed moderate to high levels of distress among female relatives of breast and ovarian cancer patients, particularly cancer-related distress (4,5). Other more recent studies, however, have not found an elevated level of general psychological distress compared to women without a family history of cancer (6,7). Inconsistencies among the findings of these studies may be related to the type of distress measured and at what point in time relatives are assessed in relation to the proband's disease process or their own cancer-related behaviors. Individual differences in coping styles and levels of support among female relatives may also contribute to these differences (7). In this study, we attempt to clarify the psychosocial

profile among this population, with the aim of providing more effective support services for the relatives of women with breast or ovarian cancer.

Many psychosocial factors such as interpersonal differences, coping styles, and social support have been investigated among relatives of cancer patients to assess relationships with psychological distress, overall adjustment, and functioning. For example, several studies suggest that emotional expressiveness may be associated with outcomes such as lower distress, better adjustment, and more adaptive physiological function in the general population (8–10) as well as in illness populations. One study found that among the coping styles assessed, a fighting spirit and emotional expressiveness were associated with better psychological adjustment in a cohort of women with metastatic breast cancer (11).

Intervention studies have demonstrated the importance of these psychosocial factors, particularly for cancer patients, and the benefit of offering support services. Receiving social support through interventions may act to buffer against the stress of having a chronic condition such as cancer (12,13). The psychological processes underpinning these factors are evidenced by studies in which, for

example, established members of a breast cancer support group reported lower levels of anxiety, depression, and stress compared to new group members and nonmembers (14). Importantly, this study found that established members perceived the support group as more supportive than new members and they identified the learning of coping skills as an important feature of the group (14).

Studies of relatives of cancer patients have assessed their psychosocial profiles in relation to cancer screening practices. For instance, greater anxiety regarding specific screening procedures among female relatives has been associated with less adherence to breast self-examinations, but was unrelated to compliance with Papanicolaou smear tests and mammograms (15). Intervention studies for relatives of cancer patients have addressed such problems. For example, a brief coping skills intervention targeted for first-degree relatives of women newly diagnosed with breast cancer was found to increase adherence to breast self-examinations (16). This improvement occurred among those who reported high distress levels compared to those with low distress levels and those in a control condition of general health counseling (16).

In addition to support intervention and cancer screening practice studies, the discoveries of specific gene mutations related to cancer risk and the recent completion of the human genome project have led to investigations of genetic counseling and testing practices in at-risk populations. Questions concerning who is likely to seek genetic counseling and the associated psychological profile of distress have emerged. For instance, one study investigated levels of psychological distress, information seeking, and optimism in women seeking genetic counseling for breast-ovarian cancer risk (4). Conclusions drawn from the study suggested that women who self-refer for genetic counseling may be psychologically vulnerable, with moderate levels of both general and cancer-specific distress (4). There is also evidence that the most anxious women enrolled in genetic counseling benefit the least from it (17).

Another study found 24% of women attending a breast cancer high-risk clinic for an initial visit were above the clinical cutoff point on the Center for Epidemiological Study Depression Scale (CES-D) (18). This study revealed that women above the cutoff point for depressive symptoms were significantly younger in age, had more relatives with breast cancer, and reported more symptoms of anxiety compared to women below the cutoff point. However, another cohort of cancer relatives did not report a higher level of general distress as measured by the Hopkins Symptom Checklist (6). This cohort was assessed at a time that did not coincide with genetic counseling. This raises the important questions of what proportion of at-risk individuals do in fact seek these services and can we compare such cohorts with those also at risk who do not seek genetic counseling. Thus there remains a debate over whether relatives of cancer patients who do or do not seek genetic counseling are indeed sufficiently distressed and may benefit from psychological intervention.

The main aim of the present study was to identify the level of general psychological distress among a cohort of women with a familial history of breast cancer, who may or may not have sought genetic counseling, in order to assess the need for psychological intervention in such a cohort. First, we hypothesized that women with a greater number of relatives affected and those who had experienced a greater number of breast cancer-related deaths in their family would report higher levels of distress than those women with fewer relatives affected. Second, in assessing the psychosocial needs of this cohort, we expected to find distress to be moderated by psychosocial resources and individual difference characteristics. Specifically, social support, a disengagement type of coping style, and family relations were hypothesized to act as moderators, interacting with family history to influence distress. An additional aim of the study was to examine the response to testing in those who had sought it.

METHODS

Participants

Participants were recruited from the Family Breast Cancer Registry, developed by the Northern California Cancer Center (NCCC). Recruitment was based on a family history of breast or ovarian cancer. Following approval for this study by the Stanford University Human Subjects Committee and the NCCC Ethics Committee, the contact details of 77 eligible female relatives of breast cancer probands from the registry were provided to the researchers, who contacted the women by telephone with an invitation to participate in the study. They were then screened for participation in concurrent studies that could involve psychosocial interventions and general physical and mental health status. Women had at least one relative with breast or ovarian cancer, diagnosed before the age of 50 years. Exclusion criteria were being less than 18 years of age, non-English speaking, a previous diagnosis of malignancy (including carcinoma in situ, but excluding non-syndromal basal cell carcinoma of the skin or premalignant lesions), a history of major psychiatric illness requiring

hospitalization within the previous 2 years, or a history of drug or alcohol use.

Of the 77 individuals, 74 were eligible and agreed to participate. These 74 individuals were sent the battery of questionnaires as described above, by mail. Reminder telephone calls were made approximately 1–2 weeks later and a total of 45 responses were returned. Data were provided from the registry on the number of relatives with breast cancer and the number of breast cancer deaths in the family.

Measures

Demographic Questionnaire We administered a brief questionnaire including age, marital status, religious affiliation, family size, ethnic background, sexual identity, education, employment, and household income.

Psychological Distress Three measures of distress were used, yielding four distress variables.

The Spielberger State-Trait Anxiety Inventory (STAI) (19–21), a 40-item reliable and sensitive measure of anxiety. The first 20 items were used, assessing state anxiety or how one feels at the moment. The items use a four-point response scale ranging from "not at all" to "very much so." For the current sample, the alpha coefficients were 0.94 for the state anxiety scale.

The Profile of Mood States (POMS) (9), a 65-item measure of mood disturbance. The response scale ranges from "not at all" to "extremely" and yields a total score and six subscale scores: tension/anxiety, depression/dejection, anger/hostility, confusion/bewilderment, vigor/vitality, and fatigue. Alpha coefficients for the scales were acceptable, ranging from 0.72 to 0.96.

The Perceived Stress Scale (PSS) (22), a 10-item measure of the degree to which circumstances in one's life are perceived as stressful. The measure was designed for use in community samples and provides a total scale score of perceived stress during the past month. The response scale ranges from "never" to "very often" on a five-point scale. The PSS10 has demonstrated acceptable reliability (alpha coefficient = 0.78), with the current sample having an alpha coefficient of 0.90.

Moderating Factors

The Family Environment Scale (FES) (23,24) is a 27-item measure consisting of three scales assessing family interaction styles of expressiveness, cohesion, and conflict, in addition to an overall score that consists of cohesion and expressiveness scales summed and conflict subtracted. The scales have demonstrated acceptable reliability,

with the current sample scale alphas reaching 0.67 for conflict, 0.70 for cohesion, and 0.71 for expressiveness.

COPE is a 60-item coping inventory developed to assess the different ways in which people respond to stress. This measure has 15 subscales, each consisting of four items. Of interest to this study were the scales relating to disengagement styles of coping (behavioral, mental, and drug-alcohol disengagement). COPE has demonstrated acceptable reliability and uses a four-point response scale (1 = "I usually don't do this at all" to 4 = "I usually do this a lot") (25).

Social support was assessed using two measures: (a) the 29-item Yale social support index (26) has been used extensively to assess patients' social networks in terms of the number of contacts (27), the quality of support (28), and the patients' satisfaction with the support received (26). In aged populations, this measure has been used successfully to predict physical performance and mortality (29–31). (b) The Single-Item Measure of Social Support (SIMSS) (32). This scale assesses practical support by asking, How many people do you have near that you can readily count on for real help in times of trouble or difficulty, such as watch over children or pets, give rides to the hospital or store, or help if you are sick? Response options are 0, 1, 2–5, 6–9, or 10 or more. This measure has been strongly associated with a composite social support index and is predictive of morbidity in women (32). These two support scales were combined and transformed into three scales for analysis as described elsewhere (33,34): size of social network; positive support, and aversive relationships.

Information on Genetic Counseling and Testing This two-item, open-ended response questionnaire was developed for the current study to assess if participants had sought genetic counseling or testing, and if so, the quality of the experience. The two items are (a) Have you ever received genetic counseling or testing in relation to cancer risk, or have you ever thought about receiving counseling or testing? and (b) If you have received counseling or testing or have attempted to find out about either, what was your experience? Responses were also obtained pertaining to questions addressing health-related knowledge and behaviors, and these will be detailed elsewhere.

Data Analysis

Descriptive statistics were used to assess the levels of psychological distress, social support, family relations, and coping styles for the entire cohort. Mean levels of these variables were compared for demographic subgroups, including older and younger women in the

sample, and sister and daughter relatives, using one-way analysis of variance (ANOVA). In addition, the associations between familial history of breast cancer, moderating, and distress variables were evaluated by Pearson correlation coefficients. Tests of potential moderating effects of social support, family relations, and coping style on psychological distress were conducted using hierarchical regression analyses and follow the conceptual and analytic framework set out by Baron and Kenny (35). This involved entering the predictor and moderator variables (family history and psychosocial moderator) independently in the first block, followed by these variables together with their interaction term in the second block. Results reaching $p < 0.05$ are reported, although it is noted that given the number of analyses performed, the more stringent level of $p < 0.01$ is observed in interpretation of the data.

RESULTS

Characteristics of the Sample

Table 1 shows the demographic characteristics and familial cancer history of the sample, which consisted of 45 women who ranged in age from 19 to 61 years (mean age 38.8 years). The women are categorized as sisters, daughters, and mothers of the NCCC breast cancer registry proband. For those with more than one relative with breast or ovarian cancer, this is based on the closest first-degree relative. The sample reflected a diverse racial representation. Three participants had received genetic counseling and another had received genetic counseling and testing.

All participants had a first-degree relative with breast cancer and the majority of the sample had at least two relatives with breast cancer (either living or deceased). More than half of the sample had at least one relative who had died of breast cancer, but only 17.8% had a first-degree relative who had died from breast cancer and 13.3% had a mother that had died from breast cancer.

Is the Sample Distressed? Table 2 shows the means and standard deviations for the distress measures. Overall, the sample reported a level of distress that was no higher than normative populations, as measured by the POMS subscales (9), POMS total mood disturbance score (9), and STAI scale (20). Scores for the perceived stress scale were also comparable with normative populations (22,36).

Who Is Most Distressed? Pearson correlations were used to explore the needs of the sample by assessing the

Table 1. Characteristics of the Sample (*n* = 45)

Characteristic	% (Frequency)	% (Frequency) for first-degree relative
Racial/ethnic background		
Black/African American	2.2 (1)	
Asian American	6.7 (3)	
Hispanic/Latino	8.8 (4)	
Native American	6.7 (3)	
White/European American	66.7 (30)	
Other	8.9 (4)	
Income		
Less than $20,000	17.8 (8)	
$20,000–$39,999	17.8 (8)	
$40,000–$59,999	24.4 (11)	
$60,000–$99,999	17.8 (4)	
≥$100,000	15.6 (7)	
Don't know/refuse to answer	6.6 (3)	
Education		
Less than high school	2.2 (1)	
Graduated from high school	8.9 (4)	
Trade school or some college	62.3 (28)	
Bachelor's degree or above	26.6 (12)	
Employment status		
Not employed	22.2 (10)	
Part time (less than 30 hours/week)	13.3 (6)	
Full time (30 hours or more/week)	64.4 (29)	
Current relationship status		
Single	31.1 (14)	
Married/living as married	44.4 (20)	
Separated/divorced	17.8 (8)	
Other	6.7 (3)	
Relation to the registry proband		
Sister	48.9 (22)	
Daughter	44.4 (20)	
Mother	6.7 (3)	
Total number of relatives with breast cancer		
1	13.3 (6)	57.8 (17)
2	44.4 (20)	37.8 (17)
3	31.1 (14)	4.4 (2)
4–5	11.1 (5)	0.0 (0)
Number of relatives who died from breast cancer		
0	37.8 (17)	80.0 (36)
1	53.3 (24)	20.0 (9)
2–4	8.8 (4)	8.8 (4)

Table 2. Means and Standard Deviations for Distress Scores (*n* = 45)

Distress variable	Mean (SD)
POMS total mood disturbance score	18.90 (29.55)
POMS tension-anxiety	7.98 (4.25)
POMS depression-dejection	6.73 (9.31)
POMS anger-hostility	6.79 (6.81)
POMS vigor-activity	16.51 (5.49)
POMS fatigue-inertia	7.41 (5.60)
POMS confusion-bewilderment	6.53 (3.83)
STAI state	32.82 (11.05)
STAI trait[a]	35.74 (10.71)
Perceived stress scale	13.51 (6.30)

[a] *n* = 43 for this distress variable due to missing data.

Table 3. Significant Moderation Effects for the Number of Relatives

| Interaction term (no. of relatives × mediator)	Distress variable (DV)	R	R^2	Adjusted R^2	R^2 Change	F Change
1. Social Support						
Positive support	POMS total	0.558	0.312	0.261	0.18	10.75**
2. Coping						
Behavioral disengagement	POMS total	0.752	0.565	0.533	0.14	13.14***
	STAI state	0.64	0.41	0.37	0.09	6.26*
Mental disengagement	POMS total	0.69	0.48	0.44	0.11	8.9**
Drug disengagement	POMS total	0.73	0.57	0.54	0.21	19.47***
	STAI state	0.66	0.43	0.39	0.13	9.35**
3. Family relations						
FRI cohesion	POMS total	0.44	0.19	0.13	0.11	5.32*
	STAI state	0.60	0.36	0.32	0.08	5.14*

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

relationship between demographic and family history variables with scores on the distress variables. No significant correlations were found between demographic factors and the distress scores as measured by the POMS, STAI, or perceived stress. Correlations assessing familial cancer history (number of relatives and number of first-degree relatives) and distress scores revealed a significant relationship between the total number of relatives with breast cancer and state anxiety levels ($r = 0.256$, $p < 0.05$). Significant relationships were not found between the number of first-degree relatives and any of the distress scores. ANOVAs were conducted for distress in association with familial cancer history relating to the number of deaths (total number of relatives that died from breast cancer, first-degree relatives that died from breast cancer, and death of a mother from breast cancer). Having one or more relatives who died from breast cancer was associated with a higher perceived stress [$F(1,43) = 15.93$, $p < 0.001$], greater POMS depression [$F(1,43) = 4.05$, $p = 0.05$], and higher STAI state [$F(1,43) = 6.96$, $p < 0.05$]. A significant association was also found for death of a first-degree relative [$F(1,43) = 10.18$, $p < 0.01$] and maternal death [$F(1,43) = 6.2$, $p = 0.01$] with perceived stress.

Subsequent analyses were conducted using the total number of relatives with breast cancer and the total number of relatives who had died from breast cancer, as two separate independent variables.

Moderating Effects of Psychosocial Resources and Individual Differences on Distress To assess whether distress in women with a greater number of relatives affected and those who had experienced a greater number of breast cancer-related deaths in their family would be moderated by social support, coping style, or family relations, a series of hierarchical regressions were conducted.

The two family history variables (total number of relatives with breast cancer and total number of cancer-related deaths) were entered as predictors into separate regression equations with each potential moderating variable and their interaction term, and the distress outcome variable. All independent variables and interaction terms were centered at their grand mean. Table 3 shows the model 2 interaction change statistics to test for moderation with the number of relatives as predictor and corresponding moderator variable interaction. Where these regression analyses are graphed, figures show the median splits for family history, where group 1 represents one or two relatives with breast cancer and group 2 represents three or more relatives with breast cancer.

Social Support as a Moderator of Distress A family history of relatives with breast cancer interacted significantly with positive social support to influence distress as measured by the POMS ($\beta = -0.43$, $t(1,41) = -3.28$, $p < 0.01$), as shown in Figure 1. Aversive support and network support were not significant as a moderator of distress
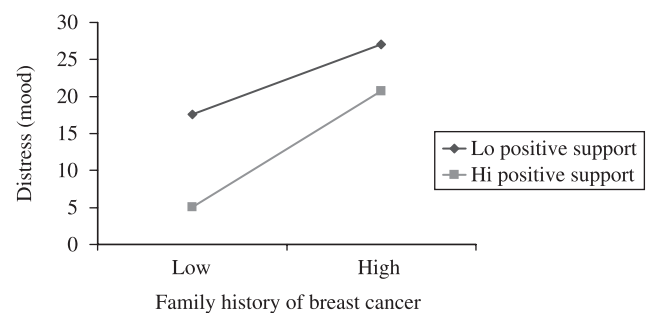
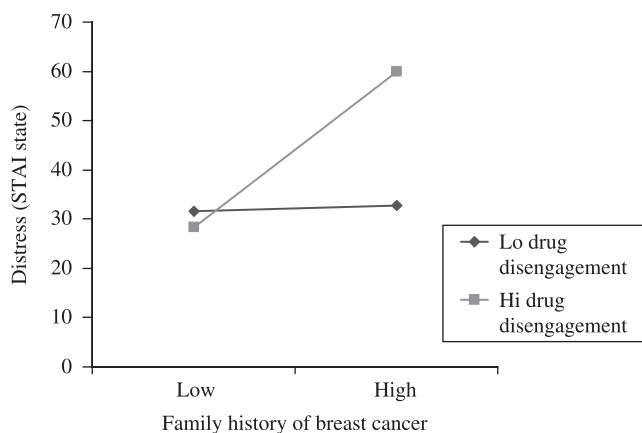

Figure 1. Interaction representing the moderating effect of positive social support ($p < 0.01$). Distress as measured by the total mood disturbance score is highest when familial cancer history is greater and positive social support is less.

with family history. This significant interaction for positive support indicates that supportive relations are acting to buffer the influence of family history on distress, particularly in those who have experienced one or two relatives with breast cancer compared to those with three or more relatives.

Coping Style as a Moderator of Distress A family history of relatives with breast cancer interacted significantly with the disengagement coping strategies, as predicted. The number of relatives interacted with behavioral disengagement to influence scores on the POMS ($\beta = 0.38$, $t(1,41) = -3.69$, $p = 0.001$) and STAI ($\beta = 0.31$, $t(1,41) = 2.50$, $p < 0.05$), with mental disengagement to influence POMS ($\beta = 0.35$, $t(1,41) = 3.1$, $p < 0.01$), and with drug disengagement to influence POMS ($\beta = 0.61$, $t(1,41) = 4.47$, $p < 0.001$) and state anxiety ($\beta = 0.48$, $t(1,41) = 3.06$, $p < 0.01$). These interactions reveal moderation effects for all three disengagement types of coping. As demonstrated in Figure 2 (drug disengagement), an interaction effect occurs where the use of drug disengagement is associated with greater distress (overall mood disturbance) when the familial incidence of breast cancer is higher. Lower use of drug disengagement is associated with a lower distress score, whether scoring low or high on family history of breast cancer. The number of deaths from breast cancer did not significantly interact with disengagement coping to predict distress scores.

Family Relations as a Moderator of Distress Moderating effects were not found for the number of relatives and

Figure 2. Interaction representing the moderating effect of disengagement coping ($p < 0.01$). Greater distress as measured by the STAI is associated with greater use of drug disengagement when the rate of familial cancer history is higher. The effect is identical for the distress measure of POMS total mood disturbance (not shown) ($p < 0.001$).

total score on the family relations index. However, a family history of relatives with breast cancer interacted significantly with the family relations subscale of cohesion to influence distress as measured by the POMS ($\beta = -0.34$, $t(1,41) = -2.31$, $p < 0.05$) and STAI ($\beta = -0.29$, $t(1,41) = -2.27$, $p < 0.05$). These significant interactions for cohesion indicate that this aspect of family relations is acting to buffer the influence of family history on distress. In these interactions, family cohesion is operating as a buffer of family history, with high cohesion being significantly associated with lower distress when the familial history of breast cancer is greater. It is noted, however, that these family effects, unlike the moderating effects reported above for support and coping measures, did not reach a $p < 0.01$ level of significance.

As with the other psychosocial factors, no significant moderating effects were found for the number of deaths from breast cancer with the Family Relations Index on distress outcomes.

In response to the two open-ended questions asking about genetic counseling and testing, three participants (1.34%) reported having received counseling and only one participant had received genetic counseling and testing. Fifty-one percent ($n = 23$) of the sample responded that they had not thought about and would not want genetic testing or counseling, and a further 20% (9) of the sample responded that they had "thought about it." Further analysis assessing distress in relation to women who had and had not sought testing was not possible due to the small number of participants who met the criteria for this secondary aim.

DISCUSSION

Overall, the women in this sample were not found to be suffering from distress beyond population norms. Comparing within the group, although there was a trend for daughters to report higher distress levels than mothers or sisters, no significant differences were observed. Having more relatives (living or deceased) with breast cancer was associated with greater distress regardless of familial closeness, and having more deaths in the family from breast cancer, particularly in first-degree relatives and maternal death, was associated with greater distress. This finding corresponds with other studies that have found a positive association between psychosocial distress and a family history of cancer (15).

Evidence was found for a moderating role of social support, coping style, and family relations within this cohort of women with a family history of breast cancer. Interpretation of the data is based on the effects of support

and coping, which reached at least the p < 0.01 level of significance, an important consideration given the necessary number of analyses performed. When graphed using median splits (one or two relatives versus three or more relatives), these relationships become evident for those with a greater family history of breast cancer. Positive support acted as a moderator of distress, and the three disengagement forms of coping (behavioral, mental, and alcohol-drug disengagement) were each found to be predictive of higher distress scores, particularly in women who had a higher familial incidence of breast cancer. Similarly family cohesion also interacted with family history to moderate distress; greater cohesion being associated with lower distress in women with a greater familial incidence of breast cancer. Significant moderating effects were not found with the predictor of the number of deaths from breast cancer.

While the number of relatives who died from breast cancer was clearly associated with distress levels, psychosocial variables did not moderate this effect. However, the number of relatives with breast cancer was found to be a useful predictor of distress in the psychosocial resource moderation models. The strength of the classic buffering effect of positive social support and a support network is demonstrated by the association between availability of positive social support and lower distress (12,37,38) in those with a greater familial history. The central importance of social support in relation to the genetic risk and testing literature is further evidenced by recent work specifically assessing partner support (39). This enormously productive area of research requires continued attention in future studies, given its potential for intervention and positive adaptation.

The participants in this sample are healthy women for whom psychological intervention has not been routinely offered. Considering the comparatively normal level of distress reported, this might be entirely appropriate. However, the ability of social support to reduce distress in those with a greater family history reveals the power of natural forms of support to improve the psychological state. That disengagement coping responses interacted with the number of relatives to influence distress is noteworthy, since this pattern has also been seen in previous research with breast cancer patients (11). Similarly the importance of family cohesion to reduce distress in women with a higher familial incidence of breast cancer provides further support for the role played by close family relations. Taken together, these findings indicate that interventions that provide supportive relations, reassessment of cognitive coping responses away from disengagement, and

encouragement toward family cohesion may prove beneficial to women who have a greater incidence of familial breast cancer by reducing distress.

The limitations of the study are acknowledged, however. First, these results are based on a small cohort of female relatives, and the strongest findings among women with the greatest familial cancer history are based on a particularly small subgroup. Yet these findings do agree with other findings from larger cohorts demonstrating an association between family history and heightened levels of anxiety and depression. Second, the present study included only a measure of general distress and not cancer-specific distress such as cancer screening anxiety. Although other studies have demonstrated a positive association between general and cancer-specific anxiety levels (15), we do not have this assessment for the current cohort of relatives.

A further note is warranted concerning our use of the term "distress," assessed using three questionnaire measures of mood disturbance, anxiety, and perceived stress. It should be noted that perceived stress was not significant as an outcome measure of distress for this group of women, and similarly that the individual mood dimensions of the POMS were not significant indicators. Important in terms of extrapolating the specific type of distress relevant to this cohort, the measures of distress that were significant were those of the STAI and overall mood disturbance (POMS total). A clearer understanding of distress specificity and anxiety would provide a stronger theoretical basis for developing targeted interventions of support. It would also be beneficial to understand more about the sociodemographic profile of this cohort of relatives, including an assessment of when the relative probands were diagnosed with breast or ovarian cancer and what stage of illness was present during study participation. Yet there is evidence that the psychosocial functioning of patients and relatives may vary along the trajectory of the illness (1,40,41).

Furthermore, we did not include a relationship measure to assess the geographical and psychological proximity and quality of the relationship between the proband and the relative. Some relatives may be the main caregivers or social support providers to the probands, or alternatively they may be geographically or psychologically quite distant from the person with cancer. These relationship qualities may confound the relationship between coping style, social support, and adjustment.

Third, these data are based on a cross-sectional design, and while the argument is made for social support acting as a buffer of distress, it is not possible to determine explicitly whether this is the case or not. This raises the question

of whether individuals with higher levels of distress are exhausting their support system, leading to lower levels of support, or whether there is a perceptual and reporting bias such that individuals with higher levels of distress do not perceive their social networks as supportive. Such details can only be extrapolated from longitudinal data.

Finally, since these cancer registry participants were not selected on the basis of treatment seeking, we do not know how representative they are of relatives more generally. Future studies might apply these findings to the problem of identifying those in need of counseling and assessing their response to intervention.

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