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Joretha N. Bourjolly

University of Pennsylvania, jerri@sp2.upenn.edu

Karen B. Hirschman

University of Pennsylvania, hirschk@nursing.upenn.edu

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Abstract

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Keywords

breast cancer, social support, coping, race, African American

Comments

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Joretha N. Bourjolly, PhD
Karen B. Hirschman, MSW

ABSTRACT. African American women are less likely to be diagnosed with breast cancer than white women but are more likely to be adversely affected. However, little attention has been paid to how these women cope with the disease or whether they differ from white women in coping with breast cancer. Using a comparative design, this study analyzed the differences in coping strategies and use of social support between African American and white women with breast cancer. Findings suggest that both groups tend to seek social support as a way of coping with their breast cancer but differ in their sources of support. Social workers are urged to consider that there may be differences in sources of social support between racially and ethnically diverse populations. These differences may have an impact on the type of support provided and therefore on patients' need for service. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: <getinfo@haworthpressinc.com> Website: <http://www.HaworthPress.com> © 2001 by The Haworth Press, Inc. All rights reserved.]*

Dr. Bourjolly is Assistant Professor, School of Social Work, University of Pennsylvania, 3701 Locust Walk, Philadelphia, PA 19104-6214. Ms. Hirschman is a doctoral candidate, School of Social Work, University of Pennsylvania.

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KEYWORDS. Breast cancer, social support, coping, race, African American

Breast cancer not only is the most common type of cancer among women in the United States (ACS, 1997; Landis et al., 1999) but is among the most feared cancers as well. It creates significant stress for many women. Like most cancers, it exacts physical and psychological adjustments even in the best of cases (Taylor et al., 1986). Breast cancer can have a disturbing impact on one's life in a number of areas, including family and marital relationships, financial stability, social relations, and self-esteem (Cordoba, Fobair, & Callan, 1993). Some women feel overwhelmed and anxious while attempting to absorb complex and often conflicting information about treatment options. The result may be to defer decisions regarding their care entirely to their physicians (Williams et al., 1995).

In general, personal and environmental resources have been examined for their contributions to patients' adaptation. These resources include coping strategies, social support, health beliefs, and socioeconomic status (Bloom & Spiegel, 1984; Burgess & Pettingale, 1988; Northouse, 1989; Reynolds et al., 1994; Ross, 1993; Stanton & Snider, 1993). However, the use of these resources among racially diverse groups, especially among African American women, has not received much attention.

Although African American women are less likely than white women to develop breast cancer, they appear to be most adversely affected. They tend to be diagnosed at more advanced stages, resulting in lower survival rates (Jacob, Spieth, & Penn, 1993; McCarthy et al., 1998). Even when cancer stage and treatment are controlled for, their social functioning with regard to self-care, household, occupational, social, and community activities is lower than that of white women (Bourjolly, Kerson, & Nuamah, 1999). Little is known, however, about the particular issues affecting this population's adjustment to breast cancer. To address this situation, the present research examined coping strategies and social support among African American and white women with breast cancer to determine if race predicted differences in these areas and what implications such differences would have for clinical practice.

REVIEW OF THE LITERATURE

Emotional Response to Breast Cancer

Previous research has identified coping responses of women with breast cancer. Emotional reactions of depression, deep anxiety, the "unlived" life of disappointment, deferred hope, and loss have been documented in cancer patients for about 100 years. Since the 1950s, the literature has cited depression,

anxiety, and anger as common reactions in women with breast cancer, with mastectomy patients being more emotionally distressed than are patients with benign diseases (Royak-Schaler, 1991).

In her review, Royak-Schaler (1991) found that studies on the psychological distress associated with treatment for breast cancer operated from the underlying hypothesis that breast-saving surgery can reduce the emotional crisis associated with loss of a breast. Studies on the differences in the adjustment, psychological distress, body image, and sexuality of patients who underwent mastectomy or lumpectomy have found that lumpectomy and breast-saving surgery produce a lesser decline in body satisfaction and have less of an impact on women's body image. Lumpectomy patients are better able to discuss their surgery with spouses and friends, and their diminished fears of mutilation enhanced marital affection and sexuality after surgery for both partners. However, more lumpectomy than mastectomy patients may have depression and anxiety related to their fears of incomplete excision and recurrence.

Levy et al. (1992) reported that patients whose breasts are spared, especially younger patients, have psychological symptoms that appear to be acutely worse in the short run and, in the end, are similar to patients who elect to have mastectomies. The addition of radiation or chemotherapy also has been shown to increase levels of distress for both lumpectomy and mastectomy patients (Royak-Schaler, 1991).

Coping Strategies

The literature reveals a number of studies that have identified coping strategies associated with survival and adaptational outcomes. Recurrence-free survival five years after surgery was significantly common among patients who initially had reacted to their cancer with denial or who had a fighting spirit (Greer, Morris, & Pettingale, 1979). In a study of patients with breast cancer, non-Hodgkin's lymphoma, or Hodgkin's disease, Burgess, Morris, and Pettingale (1988) found that lower psychological morbidity was associated with a positive, confronting response to diagnosis and a high internal locus of control, whereas higher anxiety and depression scores were associated with a hopeless-helpless response to diagnosis and a low internal locus of control. Stanton and Snider (1993) found that cognitive avoidance coping was an important predictor of high distress and low vigor among women with breast cancer.

The relationship between coping and adjustment to various chronic illnesses also has been demonstrated. In a sample of middle-aged and elderly adults diagnosed with hypertension, diabetes mellitus, cancer, or rheumatoid arthritis, researchers found that cognitive strategies, including avoidance, blame, and emotional ventilation, were related to negative affect, lowered self-esteem, and poorer adjustment (Felton, Revenson, & Hinrichsen, 1984).

Revenson and Felton's study (1989) of patients with rheumatoid arthritis provided additional support for the role that individual coping efforts play in shaping illness-related outcomes. Their findings indicated that increases in disability were related to decreased acceptance of illness and increased negative affect.

There also is evidence of both variability and stability in coping activity over time (Heim et al., 1993; Jarret et al., 1992). Folkman and Lazarus (1980) reported that people are more variable than consistent in their coping patterns. In their study, individuals tended to use both problem-focused and emotion-focused coping.

Social Support

The concepts of social support and social networks are believed to have important implications for prevention and treatment. Wood (1984) studied social support as a moderator or buffer for life stress and disease. Vaux (1988) pointed out that social support is not a stable personal characteristic; it is a complex, ongoing, transactional process between the person and his or her social network. Furthermore, these transactions take place within a changing ecological context.

For the purposes of the present study, social support refers to the many different ways in which people render assistance to one another: emotional encouragement, advice, information, guidance, tangible aid, or concrete assistance (Tracy & Whittaker, 1990; Wood, 1984). The term social network refers to the intermediate level of social environmental ties (Vaux, 1988) as well as the structure and quantity of a set of interconnected relationships (Tracy & Whittaker, 1990).

The social support network available to patients coping with illness is accepted as an important area of assessment. As Roberts et al. (1994) pointed out, knowledge of the impact, limitations, and mechanisms of social support for various patient populations leads to more accurate psychosocial assessments and, ultimately, to better treatment plans. They found several studies reporting that social support helps to ameliorate psychological distress in medical populations, possibly by acting as a buffer against the harmful effects of stress.

Research has shown a relationship between social support and coping with breast cancer (Carlsson & Hamrin, 1994; Northouse, 1989; Walters, 1988). Although patients with higher levels of social support tended to have fewer adjustment problems than patients with lower levels of support did, the size of the women's support network was not related to level of adjustment. This finding was evident 3 days and 30 days after surgery (Northouse, 1989).

Reynolds et al. (1994) analyzed relationships between social support, stage of disease, and survival among patients with breast cancer and found little or no evidence for an association between individual network measures of social

ties and stage of disease. However, the women reported few sources of emotional support and had a higher death rate from their disease during the five-year follow-up period. This association was stronger for African American than white women and for women presenting with late-stage disease.

Because social support has been viewed as a concept with multifaceted aspects, researchers have attempted to determine what types of support are most helpful to cancer patients. Roberts et al. (1994) suggested that emotional support may be valued most by patients who have undergone disfiguring surgery. On the other hand, they pointed out that tangible assistance may be crucial for patients who are physically incapacitated by their disease. Bloom and Spiegel (1984) also pointed out that different aspects of social support could be associated with different outcomes. They found that emotional support was strongly related to one's outlook and that one's opportunity for social exchange (among network members) affected one's social functioning.

Questions have emerged as to how social support is related to adaptation. It has been suggested that other variables play a role in mediating the relationship between social support and adjustment to breast cancer. Bloom (1982) reported that coping mediated this process, and Roberts et al. (1994) found that a person's characteristics rather than the situation underlie the apparent relationship between social support and adjustment to illness. However, as Pescosolido (1991) pointed out, it is through the *interaction* of the structure and function of social networks with cultural content that influences health and illness behaviors.

Vaux (1988) asserted that these relationships among social support and other factors are complex and subject to many influences. He suggested that the support process is transactional in nature and described the personal (social behavior, personality factors, and distress) and contextual (stressors, network factors, social roles, and settings available) influences on this process.

Bloom (1986) suggested that a diagnosis of breast cancer can alter or reduce the amount of emotional support rendered to women because of the stigma of having cancer. However, a later study by Bloom and Kestrel (1994) found that breast cancer is no longer stigmatized, at least not to the extent of reducing the level of a woman's emotional support.

Taylor et al. (1986) reported that although cancer patients felt as though family and friends were supportive in addressing the needs introduced by cancer, 55% said they wished they could talk more openly with family members and 50% said this of friends. They did not specify the extent to which concerns about openness with family members existed before the cancer. However, they did report that compared with patients who did not attend support groups, attendees were marginally more likely to report other nonphysical problems unrelated to cancer, such as marital difficulties or emotional problems, especially depression and alcohol abuse.

Partnered and nonpartnered women with breast cancer may rely on different sources of support. Green (1986) investigated changes within the family and found that the male partners helped with household activities during their partner's treatment; for unpartnered women, it was their children.

Culture and Ethnicity

Although research addressing coping and social support among African American women with breast cancer is limited, a few studies have examined the relationship of race or culture and adaptation to cancer. Ali, Khalil, and Yousef (1993) compared attitudes and unmet needs of American and Egyptian cancer patients and reported that Americans needed more information, relief from physical symptoms, and psychological support, whereas Egyptians needed relief from depending on others to meet their needs and from physical symptoms.

Ell and Nishimoto's study (1989) of patients with breast, lung, or colorectal cancer indicated that (1) people with lower socioeconomic status and Hispanics were more likely to have difficulty adapting to a cancer diagnosis, (2) patients with the least education and Hispanic patients had less access to a broader range of social network ties, and (3) non-Anglo patients relied more on religion than did Anglo patients.

Mendelsohn et al. (1984) compared adaptation to breast cancer and its treatment among French and American women and reported that differences between the two groups were related to the patients' age: Younger French and older American women continued to have difficulty, whereas older French and younger American women showed similarities in their optimism and effective mastery of their illness. Thus, culture also may be an important predictor of adjustment to breast cancer. These studies provide justification for further research on how race and culture affect the adjustment of women with breast cancer.

The literature suggests that although coping resources and strategies are important considerations in adaptation to breast cancer, insufficient attention has been paid to the coping and social support of African American women with breast cancer. Considering that African American women are diagnosed at more advanced stages and have poorer social functioning and higher mortality rates because of the disease, determining whether significant differences exist in how African American and white patients cope and seek support is crucial. This information could lead to a greater understanding of their perceptions, health beliefs, and resources used. Because research is limited in this area, it is unclear how race, culture, or both contribute to psychosocial adaptation to breast cancer.

The research reported in this article was part of a larger study using Folkman and Lazarus's model (1980) of stress, coping, and adaptation. The

larger study examined the effects of race on appraisal, coping, coping resources, and social functioning among African American and white women diagnosed with breast cancer (Bourjolly, 1996). Only the results pertaining to coping strategies and social support are reported here. The goal of the larger study was not to test a specific hypothesis but to gather preliminary data on differences between African American and white women in their coping and social support with breast cancer.

METHOD

A comparative descriptive design was used for the present study because it can be used to describe differences between two or more groups (Burns & Grove, 1987) and to examine variables associated with social support in African American and white women with breast cancer.

Sampling Technique

Convenience sampling was used to recruit patients from the outpatient radiation oncology department of a large university hospital, where the first author was employed as an oncology social worker. As such, she had access to medical records, appointment schedules, and the department's breast cancer database to identify women who had been treated for breast cancer. Possible participants had to be able to communicate in English and to have identified themselves as being African American or white. To minimize the number of confounding variables, only women with early stage disease who were treated with breast-conserving therapy, which included a lumpectomy (not a mastectomy) and radiation therapy, were eligible for the study. The women also could have had adjuvant chemotherapy or hormonal therapy. Women who were currently receiving radiation therapy as well as those who had finished their treatment were included in the study. Participation in the study was voluntary; women were informed that their treatment would not be affected by agreeing or refusing to participate in the study. The participants received no monetary compensation, and informed consents were obtained in accordance with the institution's Committee on Studies Involving Human Beings. Because nursing staff did some of the recruiting, it was difficult to know the exact number of women who declined to participate.

Among 94 women the principal researcher approached over a period of 11 months, 75 (79.7%) agreed to participate; the nursing staff recruited an additional 27 women. Women who declined indicated lack of interest and lack of time as reasons for not participating. These women did not differ significantly on race, demographic characteristics, or medical status from the participants.

Among the 102 women recruited, 41 were African American and 61 were white. Although we attempted to recruit equal numbers of African American and white women, this was difficult to achieve in the stated time period. However, the percentage of African American women, nearly 40%, was higher than the 21% normally seen in the radiation oncology department. The size of the two groups was adequate to detect medium effect sizes (Cohen, 1988). Statistical power was estimated to be approximately .86 for a sample size of 102 and a medium effect size at the .05 level of significance (Cohen, 1988), indicating a 14% probability of committing a Type II error, failure to reject a false null hypothesis. (Cohen recommended .20 as the maximum probability of committing a Type II error.)

Measures

Individual interviews lasting approximately one hour included questions regarding race, age, marital status, number and ages of children living at home, educational level, income, employment status, area of residence, and medical information (stage of disease, type and date of treatment, and family history). (For information that is not reported here, consult Bourjolly, 1998.) Two standardized instruments were used to collect data on the women's coping strategies and social support. Both measures used Likert scales.

Ways of Coping Questionnaire. Coping was assessed with the 66-item revised Ways of Coping Questionnaire (Folkman & Lazarus, 1988), which contains a broad range of coping and behavioral strategies that people use to manage internal and external demands in a stressful encounter. Individuals respond to each item on a four-point Likert scale, indicating the frequency with which each strategy is used. Because the instrument measures coping processes, which are variable by definition, traditional test-retest estimates of reliability are inappropriate. However, reliability can be evaluated by examining the internal consistency of the coping measures, estimated with Cronbach's coefficient alpha (Folkman & Lazarus, 1988). A factor analysis produced eight subscales: Confrontive Coping (.70), Distancing (.61), Self-Control (.70), Seeking Social Support (.76), Accepting Responsibility (.66), Escape-Avoidance (.72), Planful Problem Solving (.68), and Positive Reappraisal (.79) (Folkman et al., 1986). The alpha coefficients for the eight scales are higher than those reported for most other measures of coping processes (Folkman & Lazarus, 1988).

The items on the Ways of Coping Questionnaire have face validity because the strategies described are those that individuals have reported using to cope with stressful situations (Folkman & Lazarus, 1988). Evidence of construct validity derives from research results that are consistent with Folkman and Lazarus's theoretical predictions: namely, that coping consists of both prob-

lem-focused and emotion-focused strategies and that coping is a process. In other words, how people cope varies in relation to the demands and constraints as an encounter unfolds.

Social Network Grid. To assess social support, we used an abridged version of the Social Network Grid to collect information on the structure and function of the patients' personal social network (Tracy & Whittaker, 1990). The grid has been used in conjunction with the Social Network Map. The map uses a circle mapping technique that displays network membership visually but reveals little information about the functioning of network relationships. Therefore, the grid is then included to record responses about supportive and nonsupportive functions of network relationships (Tracy & Whittaker, 1990). For the sake of efficiency, the map was excluded in the present study and the grid was used to obtain information on both the structure and function of the social network to save time. The administration of the grid involved listing network members in seven domains: (1) household (people with whom you live), (2) family/relatives, (3) people from work or school, (4) people from organizations, (5) friends, (6) neighbors, and (7) professionals. An eighth domain was used for other support members not listed in these domains. The purpose of the grid was not to assess specifically who provided support to the women but which domains of support they used. Thus, when listing the members of their network, the women sometimes used domain titles. This provided general information on the structure of their social network.

The grid also was used to measure two functional elements of the network: perceived availability of support and type and source of support. Perceived availability of support was assessed by asking participants to indicate how often they received emotional, concrete, and informational support from the network members listed on the grid: "Hardly ever," "Sometimes," or "Almost always." The type and source of support were measured by examining the relationship between the answers to questions about perceived availability of support and the network domains.

Although information on the reliability of the Social Network Grid is not available, the reliability of the Social Network Map has been established. To assess the reliability of data gathered from the map, 22 maps with complete data administered at two different times were examined by the developers of the instrument. On the average, respondents identified 70% of network members at both administrations, indicating a considerable degree of consistency in network membership (Tracy et al., 1990). The ratings that respondents gave their network members in the various categories were 76% reliable in their responses at both times.

The procedures for collecting network data are different for the social network grid and map. However, because the data requested are the same, the map's reliability may lend some support for the reliability of network member-

ship data collected by the grid. The developers of the Social Network Map and Grid caution that some aspects of social support appear to be less stable than others: for example, the perceived availability of support. Perhaps ratings of social support are affected by recent history, mood, and situational or personality factors (Tracy et al., 1990). STATA Statistical Software, Version 5.0, was used to analyze this data set (Stata Corporation, 1997).

RESULTS

Participants' Demographic and Medical Characteristics

The 61 white women ranged in age from 27 to 91 years ($M = 60.6$ years, $SD = 13.4$ years). The African American women ranged in age from 38 to 87 years ($M = 63.5$ years, $SD = 12.9$ years). No significant age difference was found between the two groups.

However, other demographic characteristics in the two groups differed significantly. The mean family income of the white women was much higher than that of the African American women (white: $M = \$57,000$, $SD = \$29,334.81$; African American: $M = \$28,000$, $SD = \$25,453.50$, $p < .001$). Approximately half of the African American women made less than \$20,000 per year compared with less than 7% of the white women. More than three-fourths (77%) of the white women had attended college, whereas the majority (63.4%) of the African American women had a high school degree or had not completed high school. Seventy-two percent of the white women were married, versus 39% of the African American women. Among the African American women, 9.8% had children younger than 5 years, whereas none of the white women did. Eighty percent of the African American women and only 31% of the white women lived in the city; the remainder in both groups lived in the suburbs.

For most women, the clinical T stage was T1 (white: 71%; African American: 64%), indicating that they had early stage breast cancer and their tumors were 2 cm or less in greatest dimension. Ninety-seven percent of the white women and 93% of the African American women had no regional lymph node metastasis.

All the women had radiotherapy and lumpectomies and the majority in both groups did not receive chemotherapy (white: 75%; African American: 85%) or hormonal therapy (white: 74%; African American: 85%). Most of them did not have a family history of breast cancer (white: 63%; African American: 68%). There was a significant difference ($p = .035$) in the length of time between the women's radiation treatment and their participation in the study (white: 5.8 years; African American: 3.8 years).

Similarities in Coping Strategies

The student's *t*-test (Triola, 1989) was used to determine if race had an effect on coping. A Bonferroni adjusted value (Pedhazer, 1982) also was used because differences were being tested among the subscales of the measures. We found no significant differences in coping between the two groups. However, the results summarized in Table 1 indicate that the coping strategy that applied most to both groups was that of seeking social support, followed by positive reappraisal, planful problem solving, self-control, distancing, escape-avoidance, confrontive coping, and accepting responsibility, in that order. None of the scores correlated significantly with any sociodemographic or health-related data. Therefore, no differences in coping strategies were found between the two groups.

Differences in Social Support

To examine the use of social support between the two groups of women, chi-square analyses were performed first to determine whether the women differed on where they obtained social support (social network structure). The results represent the number of women who reported using people from one of the network domains listed on the Social Network Grid (e.g., spouse, friend, children) but not the number of times they listed using these individuals. Next, differences in availability of support (function) were measured using chi-square analysis. The three areas of support were concrete, emotional, and information/advice. The women indicated the availability of the support from network members by selecting one of the three responses mentioned earlier. Receiving support "Hardly ever" was coded as not receiving support and receiving support "Sometimes" and "Almost always" were coded as receiving support.

TABLE 1. Means and Standard Deviations for Coping Strategies

Strategy	Mean	SD
Seeking social support	1.70	.75
Positive reappraisal	1.45	.74
Planful problem solving	1.31	.63
Self-control	1.14	.61
Distancing	1.05	.68
Escape-avoidance	.63	.54
Confrontive	.53	.42
Accepting responsibility	.33	.46

Social network structure. There were differences in the areas of life from which the African American and white women received social support. More white women reported receiving support from their spouse, children, and friends (Table 2). More African American women said they received support from God (Tables 2 and 3). To control for marital status, we compared only married women in the two groups and still found that a greater proportion of white women used their husbands for support. Similarly, when we compared married women who said they belonged to an organized religion, a greater proportion of the African American women still reported using God as a means of support. Among the women who had children, more white women also said they received support from their children.

Social network function. The social network function that was measured was perceived availability of support. There were differences in the African American and white women's perceptions of the availability of support. More white women reported that they received concrete support, emotional support, and information and advice from their husbands. They also indicated that they received the three types of support from their children, the *p*-values were not significant at the .05 level for informational support and advice (Table 3).

More white than African American women said they received concrete support, emotional support, and information or advice from their friends. The only network domain from which more African American women said they received support was from God, and nine said they received all three types of support from God (Table 3): four of them were widowed, three were married,

TABLE 2. Domains of Social Support Network Reported by White Women (*n* = 61) and African American Women (*n* = 41)

Domain	Number (%)	Odds Ratio	95% CI ^a	χ^2	<i>p</i> -value
<u>Spouse</u>					
White	43 (70.5)	6.52	2.72-15.62	18.763	.000***
African American	11 (26.8)	1			
<u>Children</u>					
White	42 (68.9)	2.32	1.03- 5.23	4.144	.042*
African American	20 (48.8)	1			
<u>Friends</u>					
White	47 (77.0)	3.20	1.37- 7.46	7.361	.007**
African American	21 (51.2)	1			
<u>God</u>					
White	3 (4.9)	.18	.05- .68	6.853	.009**
African American	9 (22.0)	1			

^a95% confidence interval.

p* ≤ .05 *p* ≤ .01 ****p* ≤ .001

TABLE 3. Perceived Availability and Types of Support from Network Members Among White Women (*n* = 61) and African American Women (*n* = 41)

Network Members	Number (%)	Odds Ratio	95% CI ^a	χ^2	<i>p</i> -value
<u>Spouse</u>					
Concrete support					
White	42 (68.9)	6.03	2.53-14.37	17.35	.000***
African American	11 (26.8)	1			
Emotional support					
White	41 (67.2)	5.59	2.35-13.28	16.00	.000***
African American	11 (26.8)	1			
Informational support/advice					
White	39 (63.9)	4.83	2.05-11.49	13.51	.000***
African American	11 (26.8)	1			
<u>Children</u>					
Concrete support					
White	38 (62.3)	2.33	1.05- 5.21	4.28	.039*
African American	17 (41.5)	1			
Emotional support					
White	42 (68.9)	2.32	1.03- 5.23	4.14	.042*
African American	20 (48.8)	1			
Informational support/advice					
White	34 (55.7)	1.78	.80- 3.94	1.998	.157
African American	17 (41.5)	1			
<u>Friends</u>					
Concrete support					
White	41 (67.2)	3.20	1.41- 7.26	7.90	.005**
African American	16 (39.0)	1			
Emotional support					
White	47 (77.0)	3.89	1.66- 9.08	10.12	.001***
African American	11 (46.3)	1			
Informational support/advice					
White	44 (72.1)	3.00	1.31- 6.86	6.91	.009**
African American	19 (46.3)	1			
<u>God</u>					
Concrete					
White	3 (4.9)	.19	.05- .68	6.85	.009**
African American	9 (22.0)	1			
Emotional					
White	3 (4.9)	.19	.05- .68	6.85	.009**
African American	9 (22.0)	1			
Information/advice					
White	3 (4.9)	.19	.05- .68	6.85	.009**
African American	9 (22.0)	1			

^a95% confidence interval.

p* ≤ .05 *p* ≤ .01 ****p* ≤ .001

and two reported being single. When marital status was controlled for ($n = 60$), perceived availability of support from spouse, friends, and God remained significant at the .05 level.

Based on the bivariate results, additional statistical analyses were conducted. To evaluate the role of other possible predictors and to assess interactions, stepwise logistic regression was used to model trends in reported support for women with breast cancer, as measured by odds ratios and 95% confidence intervals (Hosmer & Lemeshow, 1989). The following possible predictors were included in the models: race (white = 1, African American = 0) and age at diagnosis, education, household income, and married (yes = 1, no = 0). Predictor variables that were significant at $p < .10$ in bivariate analyses were included in the initial logistic regression model; most variables that were not significant at $p < .05$ in the logistic regression models were dropped sequentially. Unadjusted odds ratios for availability of overall social support from spouse, children, friends, and God were estimated. The significant ones are reported here.

Several variables appeared to have low to moderate correlations with significant associations between those correlations (Table 4). City and race proved to be significantly associated in bivariate analyses ($\chi^2[1] = 23.89, p < .001$). City was not significant in any of the models reported here when the variable was in the presence of race in either the basic chi-square analyses or the logistic regression analyses. An interaction term created for city and race was added to all the logistic regression models to test whether the slopes for African American women differed from those for white women. The addition of the interaction term to all the models was not significant. Thus, because the variable city and the interaction term city-race did not add significantly to the model, city was left out of the final models.

In addition, as some variables were added to the logistic regression models, some previously significant variables in the model were no longer significant—possibly because of the moderate correlations noted in Table 5. Multi-

TABLE 4. Correlations Between Specific Demographic Variables

Variable	1	2	3	4	5	6	7	8
1 Race	--	--	--	--	--	--	--	--
2 Education	-.42***	--	--	--	--	--	--	--
3 Less than 12 years	.23*	--	--	--	--	--	--	--
4 More than 12 years	-.41***	--	--	--	--	--	--	--
5 Income	-.51***	.61***	-.36***	.48***	--	--	--	--
6 Less than \$20,000	.50***	-.51***	.46***	-.39***	--	--	--	--
7 Age	.11	-.21*	.22*	-.26**	-.25*	.25*	--	--
8 50 or older	.05	-.17	.17	-.30**	-.11	.12	--	--
9 City	.48***	-.43***	.21*	-.39**	-.58***	.47***	.20*	.06

* $p < .05$ ** $p < .01$ *** $p < .001$

collinearity was evaluated and assessed for each specific association; chi-square results are reported in the results of the logistic regression models.

Logistic Regression Models

Spousal support. In the logistic regression models for spousal support, women who were white and whose household income was more than \$20,000 were more likely than African American women with household incomes less than \$20,000 to report support from their spouse (see Table 5, Column 1B). When education (less than 12 years) was added to the model, it was not significant at the .05 level (Column 1C). However, when income was left out of the model, education was again significant at the .05 level (Column 1B) because having an income of less than \$20,000 was associated with having less than a high school education (see Table 4). The multicollinearity between the low income and lack of a high school education was significant at the .001 level

TABLE 5. Logistic Regression Models for Type of Support by Predictor Variables (Presented as Odds Ratios)

Variable	1 Spousal Support			2 Support from Children			3 Support from Friends		
	A	B	C	A	B	C	A	B	C
Race, white	5.69***	3.52*	3.57***	1.96	2.66*	2.16†	3.20**	--	1.95
Income, < \$20,000	--	.12**	.18*	--	--	--	--	--	--
Education									
< High school	.10*	--	.22	.25†	--	.17*	--	--	--
> High school	--	--	--	--	--	--	--	5.09***	4.00**
Age, continuous	--	--	--	--	--	--	--	--	--
Age, 50 or older	--	--	--	--	4.34**	5.43**	--	--	--

Variable	4 Support from God						
	A	B	C	D	E	F	G
Race, white	.18*	--	--	--	.25†	.27†	.41
Income, < \$20,000	--	8.35*	--	--	--	--	2.40
Education							
< High school	--	--	10.00**	--	7.08**	5.29*	3.65
> High school	--	--	--	--	--	--	--
Age							
Continuous	--	--	--	1.07*	--	1.10†	1.05
50 or older	--	--	--	--	--	--	--

* $p \leq .05$ ** $p \leq .01$ *** $p \leq .001$ † $p \leq .10$

($\chi^2[1] = 21.28$). Therefore, we decided not to include education in the final model for spousal support. Income and race were moderately correlated ($r = .50$), and the bivariate association between the two variables was significant ($\chi^2[1] = 25.48, p = .001$). An interaction variable was created and was not significant, indicating that race and income have other attributes that are independently important predictors; thus, both were left in the final model. The variable of age was not significant in any form in these models.

Support from children. When a stepwise logistic regression model for reported support from children was created, race and education were added to the model. Neither predictor variable was significant at the .05 level (Table 5, Column 2A). A different model was then created looking at race and age equal to or greater than 50, indicating that both variables were significant in the model (Column 2B). A final stepwise model indicated that white women were more likely to receive support from their children, to have at least a high school education, and to be older than 50 (Column 2C). Although race was not significant at the .05 level in this larger model, it was significant at the .10 level. Therefore, on the basis of the importance of assessing differences between the two groups of patients, race was left in the model. Income and marital status were not significant in the model. These results are consistent with the results in Table 5 that control for marital status.

Support from friends. For women who reported friends as a source of support, it appears that two variables, race and more than 12 years of education, were good predictors. Women who reported support from friends were more likely to be white (Table 5, Column 3A). When the model was run with more than 12 years of education, it indicated that women with breast cancer who had an education beyond high school or had passed the High School Equivalency Exam were five times more likely to report support from friends (Column 3B). When both race and more than 12 years of education were placed in the model, race was no longer significant (Column 3C). The correlations reported in Table 4 between the two variables present a clear association between race and education ($\chi^2[1] = 16.84, p < .001$). Based on the sample, this correlation indicates a strong relationship between being white and having an education beyond high school. Although race was not significant in the full logistic regression model, we kept it in the model because of the importance of assessing differences between African American and white patients' reported sources of support. Both variables were left in the model. Income, age, and marital status were not significant in any subsequent stepwise regression models.

Support from God. In the stepwise logistic regression models for support from God, various models were found to yield significant coefficients that predicted support from God. Note that the results from these analyses, although consistent with the bivariate analyses (all of which are not reported here), have small cell sizes and should be interpreted with caution. Race alone was a sig-

nificant predictor such that African American women were more likely and white women were less likely to indicate support from God (Table 5, Column 4A). Each of the following variables—race, income lower than \$20,000, less than a high school education, and age—also proved to be a good predictor for perceived support from God when run independently in the logistic regression models (Columns 4B and 4D). Race, however, was associated with less than a high school education and an income lower than \$20,000, which were reported earlier. No interaction terms for the above associated variables were significant in any models for God. The income variable also was associated significantly, at least at the .05 level, with educational level, age, and marital status.

When we made a final attempt to create a model with stepwise regression that had the greatest number of significant variables, women who were African American, had an income of less than \$20,000, had less than a high school education, and were older were more likely to report support from God (Table 5, Column 4G). However, because of the multicollinearity, the income variable in this model caused all the coefficients for the other variables to no longer be significant at the .05 level.

LIMITATIONS OF THE STUDY

Although the study provides useful information on differences between African American and white women who have breast cancer, one must use caution in interpreting the results for a number of reasons. All the women interviewed were treated at a comprehensive cancer center, and those who found their way to that center may not be typical of other women with breast cancer. The sample was too small to make inferences about subgroups within it. These limitations may affect generalizability to the population as a whole.

Another area of caution concerns the limitation of the instruments. For example, with the concept of social support, looking at who is in one's support system (structure) and the perception of availability of support (function) may not provide an accurate picture of the extensiveness of the support or the interactions involved in these relationships.

Information pertaining to what network members actually provided for these women in the areas of emotional, concrete, and informational support would be helpful. Such issues are prominent in social support research for pragmatic reasons: Crucial interactions among people often occur in private and thus are difficult to observe (Vaux, 1988). Although these issues raise concern regarding the limitations of interpreting the findings of the study, the results reported here provide guidance for future research.

DISCUSSION

Although the predominant coping strategy used by both African American and white women with breast cancer was seeking social support, the two groups differed in the structure and function of their social support network. We originally thought that the differences might be the result of differences in marital status between the two groups—because more white women were married, they would be more likely to have a spouse to turn to for support. After this variable was controlled for, the differences still remained. In addition, the importance of socioeconomic status and level of education cannot be overlooked as predictors of type of support. However, because of the study's limitations, these results are preliminary and suggest further investigation in this area.

The results have implications for social work assessment and interventions for patients being treated for breast cancer. Considering that religion and seeking support from God are important for African American women, it would be beneficial for social workers to understand the role these aspects play in how these women cope with and frame breast cancer. Although the profession views individuals holistically, practitioners differ in the extent to which they accept religious and spiritual issues as a domain of practice (Joseph, 1988). Social workers are much more comfortable dealing with these issues if patients discuss them first (Russell & Moore, 1991). Therefore, guidelines for assessing patients' willingness and readiness to use prayer and other practices need to be developed (Canda, 1988).

Because the church is a viable social institution in the African American community, social workers also should explore the feasibility of using the church's organizational structure in their efforts to provide assistance to this population (Russell & Moore, 1991; Taylor et al., 1986). Although the number of women in the sample who reported support from God was small and the statistical interpretations should be viewed cautiously, the results shed light on a subsample of women with breast cancer whose needs may be different. As Reynolds et al. (1994) noted, African American women who reported few sources of emotional support had a higher death rate from their disease during the five-year follow-up period.

In addition, although the coping strategy used by both African American and white women was seeking social support, the expression or outward manifestation of coping may still reflect cultural norms. For example, the incorporation of religion and spirituality has proved to be an important aspect in the development of supportive resources for African Americans (Boyd-Franklin, 1989).

Finally, the social support systems available to patients should be assessed to determine whether they are being used appropriately and whether there are

gaps in support. Discussions with patients about who is in their support network and the type of help these people provide can offer a clearer picture of the availability of support and untapped resources. Other interventions also may be needed to help women with breast cancer find beneficial ways to cope with their disease. Such interventions may include cognitive therapy, support groups, educational programs, stress-reduction techniques, and nonmonetary financial resources, such as cab vouchers, bus tokens, or parking reimbursements. These approaches would be most useful shortly after diagnosis and in the early stages of cancer treatment, the times when functioning is affected most.

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