

Coping Resources and Self-Rated Health Among Latina Breast Cancer Survivors

Anna M. Nápoles, PhD, MPH, Carmen Ortíz, PhD, Helen O'Brien, BA, Andrea B. Sereno, MD, MPH, and Celia P. Kaplan, PhD, MA

Breast cancer is the most frequently occurring cancer and the leading cause of cancer death among Latinas (Howlader et al., 2011). More than 2.6 million people were living with breast cancer in the United States in 2008 (Howlader et al., 2011). Complete prevalence estimates are not available for Latinas, but prevalence estimates for 1990–2008 indicate that more than 101,000 Latina breast cancer survivors lived in the United States in January 2008 (Howlader et al., 2011). Although cancer survivorship research among Latinas is sparse, evidence is emerging that Latinas may be at higher risk for psychosocial morbidity following breast cancer than Caucasian women, suffering disproportionately from issues related to distress, sexuality, pain symptoms, relationships with partners, employment, and financial hardships (Ashing-Giwa et al., 2004; Christie, Meyerowitz, & Maly, 2010; Eversley et al., 2005; Spencer et al., 1999). Little has been done to assess the relationship between coping resources and health status as Latinas transition from an acute cancer phase to survivorship (Aziz & Rowland, 2002).

Literature Review

Conceptual Framework

Social-Cognitive Transition Theory, which integrates stress and coping models (Lazarus & Folkman, 1984) with social-cognitive theory (Bandura, 1997), is a psychosocial model that views adaptation to cancer as “psychological processes that occur over time as the individual, and those in their social world, manage, learn from and adapt to the multitude of changes which have been precipitated by the illness and its treatment” (Brennan, 2001, p. 1). That model was employed for the current analysis because it emphasizes the social context of an individual’s personal illness experience and postulates the importance of cognitive, spiritual, and social dimensions of adaptation to cancer. Consistent with the

Purpose/Objectives: To examine relationships between coping resources and self-rated health among Latina breast cancer survivors.

Design: Cross-sectional telephone survey.

Setting: Four northern California counties.

Sample: 330 Latina breast cancer survivors within one to five years of diagnosis.

Methods: Telephone survey conducted by bilingual and bicultural interviewers.

Main Research Variables: Predictors were sociodemographic and clinical factors, cancer self-efficacy, spirituality, and social support from family, friends, and oncologists. Outcomes were functional limitations and self-rated health.

Findings: Twenty-two percent of women reported functional limitations ($n = 73$) and 27% reported poor or fair self-rated health ($n = 89$). Unemployment (adjusted odds ratio [AOR] = 7.06; 95% confidence interval [CI] [2.04, 24.46]), mastectomy (AOR = 2.67; 95% CI [1.06, 6.77]), and comorbidity (AOR = 4.09; 95% CI [1.69, 9.89]) were associated with higher risk of functional limitations; cancer self-efficacy had a protective effect (AOR = 0.4, 95% CI [0.18, 0.9]). Comorbidity was associated with higher risk of poor or fair self-rated health (AOR = 4.95; 95% CI [2.13, 11.47]); cancer self-efficacy had a protective effect (AOR = 0.3; 95% CI [0.13, 0.66]).

Conclusions: Comorbidities place Latina breast cancer survivors at increased risk for poor health. Cancer self-efficacy deserves more attention as a potentially modifiable protective factor.

Implications for Nursing: Nurses need to assess the impact of comorbidity on functioning and can reinforce patients’ sense of control over cancer and clinician support.

theory, multilevel personal and environmental factors can affect well-being among cancer survivors, including intrapersonal factors (e.g., active coping), interpersonal factors (e.g., social support), and socioeconomic factors (e.g., level of education) (Holland & Gooren-Piels, 2000). In the current study, the authors examined the associations of intrapersonal and interpersonal coping

resources and health status among Latina breast cancer survivors using the Social-Cognitive Transition Theory as a guide.

Coping Resources and Health Status

Intrapersonal factors that have been associated with adaptation to breast cancer include self-efficacy and spirituality. Belief in the controllability of cancer, a personal sense of mastery or ability to solve problems, and better self-efficacy for coping with cancer have been associated with better psychosocial adjustment to cancer (Ell, Nishimoto, Morvay, Mantell, & Hamovitch, 1989; Heim, Valach, & Schaffner, 1997; Kreitler, Peleg, & Ehrenfeld, 2007; Merluzzi & Martinez Sanchez, 1997; Taylor, Lichtman, & Wood, 1984). Conversely, cognitive avoidance coping, such as relinquishing responsibility to others, has been associated with psychological distress in women with breast cancer (Heim et al., 1997; Stanton & Snider, 1993). Spirituality has been linked to better quality of life (QOL) among people with cancer, possibly by providing survivors with a strengthened coping ability or continued sense of worth (Brady, Peterman, Fitchett, Mo, & Cella, 1999).

Research exploring the coping resources used by Latina breast cancer survivors and their effects on health status is sparse. With respect to intrapersonal resources and breast cancer screening, Latinas—particularly those who are Spanish-speaking—feel less control over their breast health than Caucasian women (i.e., more likely to view health as a matter of luck) (Smiley, McMillan, Johnson, & Ojeda, 2000). Although the concept of self-efficacy has been well studied among non-Latina Caucasians (Kreitler et al., 2007), cancer self-efficacy among Latina cancer survivors has not been explored other than in the screening context (Fernández et al., 2009). Spirituality, however, has been identified in several studies as an important coping resource in the recovery of Latinas with cancer (Ashing-Giwa et al., 2004; Culver, Arena, Antoni, & Carver, 2002; Juarez, Ferrell, & Borneman, 1998; Lee, Lin, Wrensch, Adler, & Eisenberg, 2000; Moadel et al., 1999; Taylor, 2001). For example, Latinas with breast cancer used religious coping more often than Caucasians (Culver et al., 2002).

Interpersonal resources that can affect adaptation to cancer include the availability and role of support from family, friends, and physicians, which function theoretically through direct effects or as buffers of stressful events on the adjustment to cancer (Kornblith et al., 2001). Emotional support from close social relationships has been positively associated with psychological adaptation and well-being in patients with cancer (Bloom & Spiegel, 1984; Dirksen, 2000; Ell et al., 1989; Kornblith et al., 2001).

Interpersonal coping resources such as social support play an important role in the cancer adaptation

experiences of Latinas. Family support is an important concern of Latinas with cancer, manifesting positively, as feeling that the cancer has resulted in greater family unity, and negatively, as feeling abandoned by family members (Cuevas-Renaud, Sobrevilla-Calvo, & Almanza, 2000). Among Latinas with breast cancer, support from family and friends has been found to be important in meeting their physical and emotional support needs and reducing distress (Alferi, Carver, Antoni, Weiss, & Durán, 2001; Ashing-Giwa et al., 2004; Guidry, Aday, Zhang, & Winn, 1997; Juarez et al., 1998). A large study of long-term cancer survivors found that among men and women, Latinos were more likely to report that cancer had improved their family relationships than African Americans or Caucasians (Schultz, Stava, Beck, & Vassilopoulou-Sellin, 2004). Conversely, close family ties also may increase emotional distress, particularly if the illness interferes with family and household responsibilities (Ashing-Giwa et al., 2004; Juarez et al., 1998). Physicians, viewed as authority figures in traditional Latino culture, also have been considered important sources of support by Latinas with breast cancer (Ashing-Giwa et al., 2004). However, the effects of these coping resources on the health of Latina breast cancer survivors are poorly understood.

Objective

The objective of the current study was to examine the effects of cancer self-efficacy, spirituality, and social support on the self-rated health and functional limitations of Latina breast cancer survivors within five years of diagnosis. The study used a cross-sectional telephone survey to address gaps in the literature related to coping resources associated with the health of Latina breast cancer survivors. Consistent with Social-Cognitive Transition Theory, the authors hypothesized that greater cancer self-efficacy, spiritual well-being, and social support would be associated with better self-rated health among Latinas.

Methods

Sample

Women with breast cancer were identified through a population-based cancer registry belonging to the National Cancer Institute Surveillance, Epidemiology, and End Results program (Cancer Prevention Institute of California, 2005). Inclusion criteria consisted of women of any age and national origin who (a) self-identified as Latina; (b) were diagnosed with their first in-situ, localized, or regional stage (i.e., stage 0 to stage IIIC) breast cancer from 1999–2002 (within five years of the survey); and (c) resided in Alameda, Contra Costa, Santa Clara, or Santa Cruz counties in California. Exclusion criteria

included having metastatic (i.e., stage IV) breast cancer, being too sick to participate (based on self-report), or having a cognitive impairment that would compromise the quality of the interview, as judged by the interviewer. Women with metastatic cancer were excluded because their QOL issues may differ from those with nonmetastatic disease (e.g., greater focus on symptom relief) (Smith, 2006).

Instruments

Sociodemographic and clinical variables: Based on self-report, sociodemographic variables included age, place of birth, language acculturation, educational level, marital status, employment status, and health insurance. Clinical variables included type of surgery, self-reported time since diagnosis, self-reported presence of a comorbid chronic condition, tumor registry-reported histologic grade, and tumor registry-reported stage at diagnosis. Sociodemographic characteristics, clinical variables, and coping resources are reported in Table 1. Latino ethnicity was confirmed by self-report.

A four-item language acculturation measure was derived from a previously validated scale (Marin, Sabogal, Marin, Otero-Sabogal, & Perez-Stable, 1987). The four items asked about language use in four contexts (i.e., read and speak in general, speak at home, usually think in, and speak with friends) with the following response options: 1 = only Spanish, 2 = Spanish better or more than English, 3 = both equally, 4 = English better or more than Spanish, and 5 = English only. Cronbach alpha for the acculturation scale was 0.95. The mean language acculturation score was divided into tertiles as follows: participants scoring 2 or less were categorized as Spanish dominant, participants scoring higher than 2 but less than 4 were classified as using both equally, and participants scoring 4 or higher were English dominant.

Coping resources: Coping resources included four multi-item scales that assessed cancer self-efficacy, spiritual well-being, social support from family and friends, and social support from oncologists. Multitrait scaling analysis was conducted on the four hypothesized scales to assess their psychometric properties in this sample (Hays & Hayashi, 1990).

Cancer self-efficacy was assessed using six items of the 14-item **Cancer Behavior Inventory, version 2** (CBI-B) (Merluzzi, Nairn, & Martinez Sanchez, 1999). At the time of the study, the instrument had not been translated into Spanish. The research team translated the original scale using rigorous forward-backward translation methods, with reconciliation of language versions by team consensus (Guillemin, Bombardier, & Beaton, 1993). The translation team consisted of four experienced bilingual and bicultural researchers of Mexican, Cuban, and Central American origin.

Table 1. Demographic and Clinical Characteristics

Characteristic	\bar{X}	SD
Coping resources^a		
Cancer self-efficacy (1–4 scale)	3.41	0.6
Spiritual well-being (0–48 scale)	40.82	7.02
Support from family and friends (1–4 scale)	3.57	0.57
Support from oncologist (1–4 scale)	3.5	0.72
Age (years)	58.3	11.9
Characteristic	n	%
Age (years)		
30–49	83	25
50–59	102	31
60–69	79	24
70 and older	64	19
No response	2	1
Birthplace		
United States	134	40
Foreign-born	195	59
No response	1	1
Language acculturation		
Spanish dominant	131	40
Both equally	99	30
English dominant	100	30
Educational level		
0–6th grade	86	26
7th grade to high school graduate	134	41
More than high school	97	29
No response	13	4
Marital status		
Married	197	59
Not married	132	40
No response	1	1
Employment status		
Employed	130	39
Unemployed	199	60
No response	1	1
Health insurance		
Private	214	65
Public	102	31
None	9	3
No response	5	1
Type of surgery		
Lumpectomy	126	38
Mastectomy	186	56
No response	18	6
Histologic grade		
Well or moderately differentiated	172	52
Poorly differentiated or undifferentiated	111	34
Missing	47	14
Stage at diagnosis		
In situ	57	17
Localized	151	46
Regional	100	30
No response	22	7
Time since diagnosis		
Two years or less	132	40
More than two years	197	59
No response	1	1

(Continued on next page)

N = 330

^aA higher score = more of the construct (i.e., greater sense of self-efficacy, greater sense of spiritual well-being, greater perceived support)

Table 1. Demographic and Clinical Characteristics (Continued)

Characteristic	n	%
Comorbid chronic condition		
Yes	58	18
No	272	82
Functional limitations		
Yes	73	22
No	257	78
Self-rated health		
Poor or fair	89	27
Good, very good, or excellent	241	73

N = 330

^aA higher score = more of the construct (i.e., greater sense of self-efficacy, greater sense of spiritual well-being, greater perceived support)

The authors conducted cognitive pretesting of the 14-item CBI-B English and Spanish versions (five pretest interviews in each language) in women similar to the study's target population (i.e., Latinas diagnosed with breast cancer in the past five years) because of the lack of data on its appropriateness for use among Latinas. Eight of the original 14 items were dropped because of comprehension or Spanish translation issues identified in the cognitive pretests. Four of those items were related to treatment and were dropped because they were viewed by most of the women in the sample as irrelevant because they had completed active treatment, although they were instructed to consider their level of confidence to do the activity in the near future. The other four items—two on maintaining work and independence and two on use of denial and expression of negative feelings—were dropped because the cognitive pretests indicated they were not understood by respondents as intended by the instrument's authors or were understood differently across languages.

Final items assessed respondents' confidence in seeking and understanding medical information, accepting their cancer, maintaining a positive attitude, and seeking social support. The final six-item scale demonstrated good convergent validity (i.e., all item-scale correlations were greater than 0.4), good divergent validity (i.e., the correlation of an item with its hypothesized scale was at least two standard errors greater than its correlation with other scales), and good internal consistency reliability (i.e., Cronbach alpha = 0.8). The scale score (range = 1–4) was the mean of nonmissing items, with a higher score indicating a greater sense of self-efficacy, defined as participants' ability to engage in positive self-care behaviors with respect to their cancer.

Spiritual well-being was assessed using a previously validated 12-item scale from the **Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale** (FACIT-Sp) (Peterman, Fitchett, Brady, Hernandez, & Cella, 2002). The Cronbach alpha was 0.82. The

scale score (range = 0–48) was the mean of nonmissing items, with a higher score indicating better spiritual well-being.

The authors used a 15-item measure of perceived availability of emotional, informational, and instrumental support previously used in breast cancer survivors by Helgeson, Cohen, Schulz, and Yasko (2000). The scale was adapted slightly to ask about support received from family and friends rather than spouse or partner only, as the authors anticipated the importance of family support among Latinas. Based on multitrait analysis, the scale demonstrated excellent psychometric properties (i.e., item-scale correlations were greater than 0.4; a correlation of each item with its hypothesized scale was at least two standard errors greater than its correlation with other scales; Cronbach alpha = 0.9). From the same source, the authors used a 10-item scale assessing emotional and informational support from oncologists. That scale also demonstrated excellent psychometric properties (i.e., item-scale correlations were greater than 0.4; a correlation of each item with its hypothesized scale was at least two standard errors greater than its correlation with other scales; Cronbach alpha = 0.94). The social support scales were translated into Spanish and subjected to cognitive testing. No items were dropped based on the cognitive testing, as they appeared to be understood as intended.

For both support scales, items asked how likely family and friends or their oncologist would be to provide various types of help for their cancer if needed (e.g., "How likely would they be to comfort you if you were upset?"). Response options ranged from 1 (they would not do this) to 4 (they would definitely do this). Both support scales were scored as the mean of nonmissing items, with a higher score indicating greater perceived support.

Outcome variables: The two outcome variables consisted of self-report of any functional limitations and self-rated health. The presence of functional limitations was assessed using a single item previously found to predict QOL among ethnically diverse patients with cancer, originally developed by the Eastern Cooperative Oncology Group (Wan et al., 1999). Respondents indicated their current level of activity with a four-level response option, ranging from 1 (able to do all normal activities) to 4 (bedridden for more than half of the day). That variable was dichotomized into no limitations versus some limitations, as more than three-fourths of the sample reported an ability to do all of their normal activities. The self-rated health item was dichotomized as poor or fair versus good, very good, or excellent.

Procedures

A letter was sent to eligible women's attending physician at the time of admission for the breast tumor as indicated by the tumor registry, and telephone follow-up sought consent to contact their patients. Women whose

physicians did not object to patients being contacted received an initial letter in English and Spanish, with an acceptance or refusal postcard where they could indicate a preference for no further contact. Patients who did not refuse by postcard were telephoned by an experienced bilingual and bicultural study staff interviewer who answered questions and obtained verbal informed consent prior to the telephone interview. Participants were compensated \$20. Surveys were conducted from April to September 2004. The University of California, San Francisco, institutional review board approved the study.

Analyses

The authors conducted psychometric analyses of multi-item scales assessing cancer self-efficacy, spiritual well-being, and perceived availability of social support from family, friends, and oncologists. After dropping items with poor discriminant or convergent validity, final scales demonstrated excellent psychometric properties (i.e., item-total correlations were 0.4 or greater, corrected for overlap; items correlated were at least two standard errors higher with their own scale than with other scales; and scales had internal consistency reliability of greater than 0.8).

Descriptive statistics (e.g., means, chi-square statistics) were used to characterize the sample. Logistic regression was used to model the independent effects of sociodemographic and clinical factors and coping resources on functional limitations and self-rated health.

Results

The sampling frame consisted of 1,133 eligible women according to tumor registry data. The authors were unable to contact 29% ($n = 333$); 22% ($n = 249$) were ineligible mostly because of misclassification of ethnicity, 14% ($n = 161$) declined, and 6% ($n = 60$) were deceased or too ill. A 67% response rate was obtained of those who were eligible, not too ill, and accessible ($n = 330$ of 491), or 29% of the sampling frame. The survey took an average of 32 minutes to complete. Compared to nonparticipants, participants tended to be younger at the time of the interview ($\bar{X} = 58.3$ versus 61.4 years, $p < 0.001$) and at diagnosis ($\bar{X} = 55.8$ versus 58.2 years, $p < 0.001$), and less likely to have well-differentiated tumors (14% versus 19%, $p < 0.05$). No significant differences existed between participants and nonparticipants by county of residence or stage at diagnosis.

The mean age of the sample was 58 years (range = 30–90 years, $SD = 11.9$ years). The majority were foreign-born, were of Mexican origin, had a high school education or less, were married or living with a partner, and were not employed outside the home. Fewer than 3% were uninsured, with 66% privately insured and almost 33% publicly insured.

Use of coping resources consisting of cancer self-efficacy, spiritual well-being, and perceived support from family, friends, and oncologists was fairly high among participants.

The majority of the women had a mastectomy, had well- or moderately differentiated histologic grading of their tumors, had in situ or localized breast cancer, and were within two or three years of diagnosis when interviewed. Eighteen percent reported a comorbid chronic condition, consisting mostly of hypertension, diabetes, and arthritis.

Functional Limitations

In bivariate analyses, being older, less acculturated, less educated, unemployed, or having public health insurance, a mastectomy, or a comorbidity were associated with a greater likelihood of reporting functional limitations (see Table 2). In bivariate models, cancer self-efficacy, spiritual well-being, and perceived social support from family and friends were associated inversely with functional limitations.

In multivariate models examining the independent effects of sociodemographic, clinical, and coping factors on functional limitations, controlling for other variables in the model, employment status, type of surgery, comorbidity, and cancer self-efficacy were significantly associated with functional status. Unemployed women were seven times more likely to report functional limitations than women who were working (adjusted odds ratio [AOR] = 7.06, 95% confidence interval [CI] [2.04, 24.46]). Women with a mastectomy were almost three times as likely to report functional limitations as women with a lumpectomy (AOR = 2.67; 95% CI [1.06, 6.77]). Comorbidity was associated with a fourfold increased risk of functional limitations (AOR = 4.09, 95% CI [1.69, 9.89]). Cancer self-efficacy was protective against functional limitations (AOR = 0.4, 95% CI [0.18, 0.9]).

Self-Rated Health

In bivariate analyses, being less acculturated, less educated, and unemployed and having a comorbid chronic condition were associated with poorer self-rated health (see Table 3). In bivariate models, all of the coping resources were protective against reporting poorer health.

In the multivariate model, women with a comorbid condition were almost five times more likely to report being in poor or fair health than those with no other chronic health problem (AOR = 4.95, 95% CI [2.13, 11.47]). Of the coping resources, only cancer self-efficacy remained independently associated with self-rated health, such that women with higher levels of self-efficacy were less likely to report being in poor or fair health (AOR = 0.3, 95% CI [0.13, 0.66]).

Discussion

The current study assessed the relationships between several psychosocial coping resources and the health status of Latinas within one to five years of diagnosis. Cancer self-efficacy and comorbid chronic conditions were important predictors of health status. Higher lev-

els of cancer self-efficacy had a protective effect against reporting functional limitations and poor or fair self-rated health, whereas comorbidity significantly increased the risk of these outcomes. Despite their relatively young age, about a fourth of participants reported poor or fair health or functional limitations. Latinas who were less acculturated and less educated reported

poorer health, which is consistent with prior studies that found that Latina breast cancer survivors report worse QOL (Sammamco & Konecny, 2010) and greater symptom burden than their Caucasian counterparts (Fu et al., 2009).

Comorbidity and having had a mastectomy appear to be important indicators of increased risk of functional limitations among Latina breast cancer survivors, which is consistent with previous studies that found an independent association between comorbidity and poorer QOL in ethnically diverse cancer survivors (Ashing-Giwa, Ganz, & Petersen, 1999; Penedo, Dahn, Shen, Schneiderman, & Antoni, 2006). As early detection and the translation of effective cancer treatments increase, more women will survive breast cancer, making management of comorbidities an increasingly important QOL issue.

Among Caucasian patients with cancer, self-efficacy has been positively associated with QOL (Kreitler et al., 2007; Taylor et al., 1984). Similar to Caucasian women, cancer self-efficacy was associated with better self-reported health in the current study of Latinas with breast cancer.

Consistent with other studies, spiritual well-being (Brady et al., 1999; Laubmeier, Zakowski, & Bair, 2004) and social support (Bloom & Spiegel, 1984; Dirksen, 2000;

Table 2. Odds of Reporting Functional Limitations Among Latina Breast Cancer Survivors

Variable	OR	95% CI	AOR ^a	95% CI
Demographic				
Age (continuous) (N = 328)	1.03	[1.01, 1.05]	1	[0.96, 1.03]
Foreign-born (vs U.S.-born) (N = 329)	1.66	[0.96, 2.89]	0.65	[0.2, 2.13]
Language acculturation (RG: English dominant) (N = 330)				
• Spanish dominant	2.39	[1.26, 4.51]	0.61	[0.13, 2.84]
• Both equally	0.74	[0.34, 1.61]	0.66	[0.22, 2]
Education (RG: more than high school) (N = 329)				
• None to 6th grade	6.09	[2.7, 13.71]	1.92	[0.55, 6.7]
• 7th grade to high school graduate	2.7	[1.21, 6.01]	0.72	[0.24, 2.18]
Not married (vs married) (N = 329)	1.41	[0.83, 2.38]	1.5	[0.66, 3.42]
Unemployed (vs employed) (N = 329)	6.37	[3.04, 13.35]	7.06	[2.04, 24.46]
Public health insurance (vs private insurance) (N = 316)	3.52	[2.04, 6.09]	1.29	[0.56, 2.96]
Clinical				
Mastectomy (vs lumpectomy) (N = 312)	4.2	[2.14, 8.21]	2.67	[1.06, 6.77]
Histologic grade (RG: well or moderately differentiated) (N = 330)				
• Poorly or undifferentiated	0.81	[0.44, 1.5]	0.89	[0.38, 2.06]
• Missing	2.66	[1.33, 5.3]	1.17	[0.27, 5.11]
Stage at diagnosis (RG: in situ) (N = 308)				
• Localized	0.82	[0.38, 1.75]	0.77	[0.27, 2.17]
• Regional	1	[0.45, 2.21]	0.77	[0.26, 2.27]
Two years or less since diagnosis (vs more than two years) (N = 329)	0.84	[0.49, 1.44]	0.63	[0.29, 1.38]
Comorbid chronic condition (vs none) (N = 330)	5.71	[3.1, 10.5]	4.09	[1.69, 9.89]
Coping Resources				
Cancer self-efficacy (continuous) (N = 330)	0.26	[0.16, 0.4]	0.4	[0.18, 0.9]
Spiritual well-being (continuous) (N = 330)	0.94	[0.9, 0.97]	0.98	[0.92, 1.04]
Social support from family and friends (continuous) (N = 330)	0.65	[0.43, 0.98]	1.57	[0.66, 3.74]
Social support from oncologist (continuous) (N = 329)	0.76	[0.54, 1.07]	1.27	[0.67, 2.41]
^a Adjusted for other variables in the model (n = 265) AOR—adjusted odds ratio; CI—confidence interval; OR—odds ratio; RG—reference group; vs—versus				

Kornblith et al., 2001) were associated with better QOL. However, in the current study, the positive effects of spiritual well-being and social support were attenuated in the multivariate models, suggesting that they may operate on QOL by improving cancer self-efficacy, as has been found previously (Nairn & Merluzzi, 2003). When medical issues arise, Latinas may feel justified in asking for help from family members and friends, when under normal circumstances they might not (Gonzalez, Gallardo, & Bastani, 2005). Compared to Caucasian women, older Latinas with breast cancer (regardless of acculturation level) involved family members (usually older adult children) to a greater extent in treatment decision making (Maly, Umezawa, Ratliff, & Leake, 2006) and emotional and instrumental support roles (Maly, Umezawa, Leake, & Silliman, 2005). That support has been associated with less anxiety and fewer depressive symptoms among Latinas, but not Caucasians (Maly et al., 2005). Prospective studies need to better assess the inter-relationships among various intrapersonal and interpersonal coping resources and QOL.

Limitations

The current study had several limitations. First, only about a third of the sampling frame participated; more than half of potential participants were ineligible or inaccessible. However, based on registry data, participants were only slightly younger at diagnosis and were similar on stage at diagnosis and county of residence compared to nonparticipants. The survey was cross-sectional; therefore, the temporal sequence of the cancer coping resources and health status is unknown.

Implications for Nursing Practice

The current study found that the prevalence of a comorbidity, functional limitations, and poorer health is significant among Latina breast cancer survivors. The findings also support the important role of self-efficacy to engage in self-care to the recovery

Table 3. Odds of Reporting Poor or Fair Self-Rated Health Among Latina Breast Cancer Survivors

Variable	OR	95% CI	AOR ^a	95% CI
Demographic				
Age (continuous) (n = 328)	1	[1, 1.02]	0.98	[0.94, 1.01]
Foreign-born (vs U.S.-born) (n = 329)	1.47	[0.88, 2.44]	0.63	[0.22, 1.81]
Language acculturation (RG: English dominant) (n = 330)				
• Spanish dominant	2.4	[1.32, 4.35]	2.22	[0.57, 8.59]
• Both equally	0.78	[0.38, 1.59]	0.78	[0.29, 2.1]
Education (RG: more than high school) (n = 317)				
• None to 6th grade	2.43	[1.25, 4.73]	0.9	[0.29, 2.79]
• 7th grade to high school graduate	1.51	[0.8, 2.83]	1.05	[0.45, 2.45]
Not married (vs married) (n = 329)	1.35	[0.82, 2.21]	1.98	[0.95, 4.1]
Unemployed (vs employed) (n = 329)	1.81	[1.07, 3.06]	2	[0.84, 4.74]
Public health insurance (vs private insurance) (n = 316)	1.6	[0.95, 2.68]	0.47	[0.21, 1.07]
Clinical				
Mastectomy (vs lumpectomy) (n = 312)	1.54	[0.91, 2.61]	0.77	[0.37, 1.61]
Histologic grade (RG: well or moderately differentiated) (n = 330)				
• Poorly or undifferentiated	1.08	[0.63, 1.85]	1.18	[0.58, 2.43]
• Missing	1.36	[0.68, 2.75]	0.45	[0.11, 1.82]
Stage at diagnosis (RG: in situ) (n = 308)				
• Localized	0.88	[0.44, 1.76]	0.64	[0.26, 1.61]
• Regional	1.04	[0.5, 2.16]	0.92	[0.36, 2.37]
Two years or less since diagnosis (vs more than two years) (n = 329)	0.96	[0.58, 1.57]	0.71	[0.35, 1.43]
Comorbid chronic condition (vs none) (n = 330)	3.87	[2.14, 6.98]	4.95	[2.13, 11.47]
Coping Resources				
Cancer self-efficacy (continuous) (n = 330)	0.25	[0.16, 0.39]	0.3	[0.13, 0.66]
Spiritual well-being (continuous) (n = 330)	0.93	[0.9, 0.96]	0.95	[0.9, 1.01]
Social support from family and friends (continuous) (n = 330)	0.59	[0.4, 0.88]	1.5	[0.7, 3.21]
Social support from oncologist (continuous) (n = 329)	0.64	[0.46, 0.88]	0.87	[0.52, 1.45]

^aAdjusted for other variables in the model (n = 265)

AOR—adjusted odds ratio; CI—confidence interval; OR—odds ratio; RG—reference group; vs—versus

of Latinas within five years of a breast cancer diagnosis. Additional studies are needed to confirm that finding and explore the potential role of cancer self-efficacy in the resilience of Latinas with breast cancer. If those findings are robust, they could inform potential interventions to aid clinicians and their Latino patients with enhancing cancer self-management skills and patients' resilience. Empowering Latinas to participate in their care, recovery, and resumption of life after breast cancer may be particularly critical, given their multiple vulnerabilities.

Anna M. Nápoles, PhD, MPH, is an associate professor at the Medical Effectiveness Research Center for Diverse Populations and at the Center on Aging in Diverse Communities in the Division of General Internal Medicine in the Department of Medicine at the University of California, San Francisco; Carmen Ortiz, PhD, is the executive director of the *Círculo de Vida* Cancer Support and Resource Center in San Francisco; Helen O'Brien, BA, is a marine biology doctoral student in the Department of Ecology and Evolutionary Biology at the University of California, Santa Cruz, and was a research associate with the Medical Effectiveness Research Center for Diverse Populations and the Center on Aging in Diverse Communities in the Division of General Internal Medicine in the Department of Medicine at the University of California, San Francisco, at the

time of the study; Andrea B. Sereno, MD, MPH, is a physician researcher at the Clementino Fraga Filho University Hospital at the Federal University of Rio de Janeiro in Brazil; and Celia P. Kaplan, PhD, MA, is a professor at the Medical Effectiveness Research Center for Diverse Populations and at the Center on Aging in Diverse Communities in the Division of General Internal Medicine of the Department of Medicine at the University of California, San Francisco. This research was supported by a National Cancer Institute (NCI) pilot grant to Redes En Acción (U01-CA86117) and a grant from the Resource Centers for Minority Aging Research program of the National Institute on Aging, the National Institute of Nursing Research, and the National Center on Minority Health and Health Disparities at the National Institutes of Health (P30-AG15272). Cancer incidence data were collected by the Greater Bay Area Cancer Registry of the Cancer Prevention Institute of California (NCI contract N01-PC-35136), with support from the California Cancer Registry, Cancer Surveillance Section of the California Department of Health Services (Public Health Institute subcontract 1006128). The content of this article does not necessarily reflect the views or policies of the Cancer Prevention Institute of California, the California Public Health Institute, or the U.S. Department of Health and Human Services, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government. Nápoles can be reached at anapoles@ucsf.edu, with copy to editor at ONFEditor@ons.org. (Submitted June 2010. Accepted for publication July 27, 2010.)

Digital Object Identifier: 10.1188/11.ONF.523-531

References

- Alferi, S.M., Carver, C.S., Antoni, M.H., Weiss, S., & Durán, R.E. (2001). An exploratory study of social support, distress, and life disruption among low-income Hispanic women under treatment for early stage breast cancer. *Health Psychology, 20*, 41-46.
- Ashing-Giwa, K., Ganz, P.A., & Petersen, L. (1999). Quality of life of African-American and White long term breast carcinoma survivors. *Cancer, 85*, 418-426. doi:10.1002/(SICI)1097-0142(19990115)85:2<418::AID-CNCR20>3.0.CO;2-9
- Ashing-Giwa, K.T., Padilla, G., Tejero, J., Kraemer, J., Wright, K., Coscarelli, A., . . . Hills, D. (2004). Understanding the breast cancer experience of women: A qualitative study of African American, Asian American, Latina and Caucasian cancer survivors. *Psycho-Oncology, 13*, 408-428. doi:10.1002/pon.750
- Aziz, N.M., & Rowland, J.H. (2002). Cancer survivorship research among ethnic minority and medically underserved groups. *Oncology Nursing Forum, 29*, 789-801. doi:10.1188/02.ONF.789-801
- Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York, NY: Freeman.
- Bloom, J.R., & Spiegel, D. (1984). The relationship of two dimensions of social support to the psychological well-being and social functioning of women with advanced breast cancer. *Social Science and Medicine, 19*, 831-837. doi:10.1016/0277-9536(84)90400-3
- Brady, M.J., Peterman, A.H., Fitchett, G., Mo, M., & Cella, D. (1999). A case for including spirituality in quality of life measurement in oncology. *Psycho-Oncology, 8*, 417-428. doi:10.1002/(SICI)1099-1611(199909/10)8:5<417::AID-PON398>3.0.CO;2-4
- Brennan, J. (2001). Adjustment to cancer—Coping or personal transition? *Psycho-Oncology, 10*, 1-18. doi:10.1002/1099-1611(200101/02)10:1<1::AID-PON484>3.0.CO;2-T
- Cancer Prevention Institute of California. (2005). Greater Bay Area Cancer Registry. Retrieved from http://www.cpic.org/site/c.sk10L6MKJpE/b.5730971/k.47A8/Greater_Bay_Area_Cancer_Registry.htm
- Christie, K.M., Meyerowitz, B.E., & Maly, R.C. (2010). Depression and sexual adjustment following breast cancer in low-income Hispanic and non-Hispanic White women. *Psycho-Oncology, 19*, 1069-1077. doi:10.1002/pon.1661
- Cuevas-Renaud, C., Sobrevilla-Calvo, P., & Almanza, J. (2000). Development of a scale to measure psychosocial concerns of Mexican women with advanced cancer. *Psycho-Oncology, 9*, 79-83. doi:10.1002/(SICI)1099-1611(200001/02)9:1<79::AID-PON433>3.0.CO;2-7
- Culver, J.L., Arena, P.L., Antoni, M.H., & Carver, C.S. (2002). Coping and distress among women under treatment for early stage breast cancer: Comparing African Americans, Hispanics and non-Hispanic Whites. *Psycho-Oncology, 11*, 495-504. doi:10.1002/pon.615
- Dirksen, S.R. (2000). Predicting well-being among breast cancer survivors. *Journal of Advanced Nursing, 32*, 937-943.
- Ell, K., Nishimoto, R., Morvay, T., Mantell, J., & Hamovitch, M. (1989). A longitudinal analysis of psychological adaptation among survivors of cancer. *Cancer, 63*, 406-413. doi:10.1002/1097-0142(19890115)63:2<406::AID-CNCR2820630234>3.0.CO;2-2
- Eversley, R., Estrin, D., Dibble, S., Wardlaw, L., Pedrosa, M., & Favila-Penney, W. (2005). Post-treatment symptoms among ethnic minority breast cancer survivors. *Oncology Nursing Forum, 32*, 250-256. doi:10.1188/05.ONF.250-256
- Fernández, M.E., Diamond, P.M., Rakowski, W., Gonzales, A., Tortolero-Luna, G., Williams, J., & Morales-Campos, D.Y. (2009). Development and validation of a cervical cancer screening self-efficacy scale for low-income Mexican American women. *Cancer Epidemiology, Biomarkers and Prevention, 18*, 866-875. doi:10.1158/1055-9965.EPI-07-2950
- Fu, O.S., Crew, K.D., Jacobson, J.S., Greenlee, H., Yu, G., Campbell, J., . . . Hershman, D.L. (2009). Ethnicity and persistent symptom burden in breast cancer survivors. *Journal of Cancer Survivorship, 3*, 241-250.
- Gonzalez, G., Gallardo, N.V., & Bastani, R. (2005). A pilot study to define social support among Spanish-speaking women diagnosed with a breast abnormality suspicious for cancer: A brief research report. *Journal of Psychosocial Oncology, 23*, 109-120. doi:10.1300/J077v23n01_07
- Guidry, J.J., Aday, L.A., Zhang, D., & Winn, R.J. (1997). The role of informal and formal social support networks for patients with cancer. *Cancer Practice, 5*, 241-246.

- Guillemin, F., Bombardier, C., & Beaton, D. (1993). Cross-cultural adaptation of health-related quality of life measures: Literature review and proposed guidelines. *Journal of Clinical Epidemiology*, 46, 1417–1432.
- Hays, R.D., & Hayashi, T. (1990). *Beyond internal consistency reliability: Rationale and user's guide for multitrait analysis program on the micro-computer*. Santa Monica, CA: RAND.
- Heim, E., Valach, L., & Schaffner, L. (1997). Coping and psychosocial adaptation: Longitudinal effects over time and stages in breast cancer. *Psychosomatic Medicine*, 59, 408–418.
- Helgeson, V.S., Cohen, S., Schulz, R. & Yasko, J. (2000). Group support interventions for women with breast cancer: Who benefits from what? *Health Psychology*, 19, 107–114. doi:10.1037/0278-6133.19.2.107
- Holland, J.C., & Gooen-Piels, J. (2000). Principles of psycho-oncology. In R.C. Bast Jr., D.W. Kufe, R.E. Pollack, R.R. Weichselbaum, J.F. Holland, E. Frei, III & T.S. Gansler (Eds.), *Cancer Medicine* (Ch. 69, 5th ed.). Hamilton, Ontario, Canada: B.C. Decker.
- Howlader, N., Noone, A.M., Krapcho, M., Neyman, N., Aminou, R., Waldron, W., . . . Edwards, B.K. (Eds.) (2011). *SEER cancer statistics review, 1975–2008*. Bethesda, MD: National Cancer Institute.
- Juarez, G., Ferrell, B., & Borneman, T. (1998). Perceptions of quality of life in Hispanic patients with cancer. *Cancer Practice*, 6, 318–324. doi:10.1046/j.1523-5394.1998.006006318.x
- Kornblith, A.B., Herndon, J.E., 2nd, Zuckerman, E., Viscoli, C.M., Horwitz, R.I., Cooper, M.R., . . . Holland, J. (2001). Social support as a buffer to the psychological impact of stressful life events in women with breast cancer. *Cancer*, 91, 443–454. doi:10.1002/1097-0142(20010115)91:2<443::AID-CNCR1020>3.0.CO;2-Z
- Kreitler, S., Peleg, D., & Ehrenfeld, M. (2007). Stress, self-efficacy and quality of life in cancer patients. *Psycho-Oncology*, 16, 329–341. doi:10.1002/pon.1063
- Laubmeier, K.K., Zakowski, S.G., & Bair, J.P. (2004). The role of spirituality in the psychological adjustment to cancer: A test of the transactional model of stress and coping. *International Journal of Behavioral Medicine*, 11, 48–55. doi:10.1207/s15327558ijbm1101_6
- Lazarus, R.S., & Folkman, S. (1984). *Stress, appraisal, and coping*. New York, NY: Springer.
- Lee, M.M., Lin, S.S., Wrench, M.R., Adler, S.R., & Eisenberg, D. (2000). Alternative therapies used by women with breast cancer in four ethnic populations. *Journal of the National Cancer Institute*, 92, 42–47. doi:10.1093/jnci/92.1.42
- Maly, R.C., Umezawa, Y., Leake, B., & Silliman, R.A. (2005). Mental health outcomes in older women with breast cancer: Impact of perceived family support and adjustment. *Psycho-Oncology*, 14, 535–545. doi:10.1002/pon.869
- Maly, R.C., Umezawa, Y., Ratliff, C.T., & Leake, B. (2006). Racial/ethnic group differences in treatment decision-making and treatment received among older breast carcinoma patients. *Cancer*, 106, 957–965. doi:10.1002/cncr.21680
- Marin, G., Sabogal, F., Marin, B.V., Otero-Sabogal, R., & Perez-Stable, E.J. (1987). Development of a short acculturation scale for Hispanics. *Hispanic Journal of Behavioral Sciences*, 9, 183–205.
- Merluzzi, T.V., & Martinez Sanchez, M.A. (1997). Assessment of self-efficacy and coping with cancer: Development and validation of the Cancer Behavior Inventory. *Health Psychology*, 16, 163–170. doi:10.1037/0278-6133.16.2.163
- Merluzzi, T.V., Nairn, R.C., & Martinez Sanchez, M.A. (1999). *A manual for the Cancer Behavior Inventory: A measure of self-efficacy for coping with cancer*. Retrieved from <http://www.nd.edu/~tmerluzz/pdfs/cbi-manual.pdf>
- Moadel, A., Morgan, C., Fatone, A., Grennan, J., Carter, J., Laruffa, G., . . . Dutcher, J. (1999). Seeking meaning and hope: Self-reported spiritual and existential needs among an ethnically-diverse cancer patient population. *Psycho-Oncology*, 8, 378–385. doi:10.1002/(SICI)1099-1611(199909/10)8:5<378::AID-PON406>3.0.CO;2-A
- Nairn, R.C., & Merluzzi, T.V. (2003). The role of religious coping in adjustment to cancer. *Psycho-Oncology*, 12, 428–441. doi:10.1002/pon.654
- Penedo, F.J., Dahn, J.R., Shen, B.J., Schneiderman, N., & Antoni, M.H. (2006). Ethnicity and determinants of quality of life after prostate cancer treatment. *Urology*, 67, 1022–1027. doi:10.1016/j.urol.2005.11.019
- Peterman, A.H., Fitchett, G., Brady, M.J., Hernandez, L., & Cella, D. (2002). Measuring spiritual well-being in people with cancer: The Functional Assessment of Chronic Illness Therapy–Spiritual Well-Being Scale (FACIT-Sp). *Annals of Behavioral Medicine*, 24, 49–58.
- Sammarco, A., & Konecny, L.M. (2010). Quality of life, social support, and uncertainty among Latina and Caucasian breast cancer survivors: A comparative study. *Oncology Nursing Forum*, 37, 93–99. doi:10.1188/10.ONF.93-99
- Schultz, P.N., Stava, C., Beck, M.L., & Vassilopoulou-Sellin, R. (2004). Ethnic/racial influences on the physiologic health of cancer survivors. *Cancer*, 100, 156–164. doi:10.1002/cncr.11897
- Smiley, M.R., McMillan, S.C., Johnson, S., & Ojeda, M. (2000). Comparison of Florida Hispanic and non-Hispanic Caucasian women in their health beliefs related to breast cancer and health locus of control. *Oncology Nursing Forum*, 27, 975–984.
- Smith, I. (2006). Goals of treatment for patients with metastatic breast cancer. *Seminars in Oncology*, 33, S2–S5. doi:10.1053/j.seminoncol.2005.07.030
- Spencer, S.M., Lehman, J.M., Wynings, C., Arena, P., Carver, C.S., Antoni, M.H., . . . Love, N. (1999). Concerns about breast cancer and relations to psychosocial well-being in a multiethnic sample of early-stage patients. *Health Psychology*, 18, 159–168. doi:10.1037/0278-6133.18.2.159
- Stanton, A.L., & Snider, P.R. (1993). Coping with a breast cancer diagnosis: A prospective study. *Health Psychology*, 12, 16–23. doi:10.1037/0278-6133.12.1.16
- Taylor, E.J. (2001). Spirituality, culture, and cancer care. *Seminars in Oncology Nursing*, 17, 197–205. doi:10.1053/sonu.2001.25949
- Taylor, S.E., Lichtman, R.R., & Wood, J.V. (1984). Attributions, beliefs about control, and adjustment to breast cancer. *Journal of Personality and Social Psychology*, 46, 489–502. doi:10.1037/0022-3514.46.3.489
- Wan, G.J., Counte, M.A., Cella, D.F., Hernandez, L., McGuire, D.B., Deasay, S., . . . Hahn, E.A. (1999). The impact of socio-cultural and clinical factors on health-related quality of life reports among Hispanic and African-American cancer patients. *Journal of Outcome Measurement*, 3, 200–215.