Impact of a Bilingual Education Intervention on the Quality of Life of Latina Breast Cancer Survivors

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Breast cancer disproportionately affects Latinas living in the United States and is the primary cause of cancer-related deaths in that population (Siegel, Naishadham, & Jemal, 2012). Compared to Caucasians, Latinas are diagnosed at younger ages with less favorable prognoses and have a lower survival rate (Wu et al., 2012). The five-year survivorship rate is 83% for Latinas compared to 89% for Caucasians (DeSantis, Siegel, Bandi, & Jemal, 2011). The type of treatment Latinas and other ethnic minorities receive involves an increased risk for treatment delays, less access to care, and lower quality of care (Freedman, He, Winer, & Keating, 2009; Parise, Bauer, & Caggiano, 2012). The differences in treatment may have important negative effects on quality of life (QOL). Despite some preliminary studies in that area, intervention testing that addresses physical, psychological, spiritual, and social aspects of QOL in Latina breast cancer survivors (BCSs) has not occurred (Ashing-Giwa & Lim, 2009; Lopez-Class, Gomez-Duarte, Graves, & Ashing-Giwa, 2012).

In 2011, more than 2.6 million BCSs were living in the United States (DeSantis et al., 2011). Improving the QOL of cancer survivors has been identified as a public health priority by the Institute of Medicine (IOM) and numerous other organizations. An IOM report by Hewitt, Greenfield, and Stovall (2006) also highlighted the need to evaluate QOL following the end of initial diagnosis and treatment. Latinos are the largest and fastest-growing ethnic minority group in the United States (Pew Hispanic Center, 2010); therefore, as the Latino population continues to grow, so will the cohort of Latina BCSs living with the effects of cancer and cancer-related treatment. Although a large body of research addresses breast cancer QOL, relatively few studies have focused on the post-treatment experience of Latina BCSs.

The Latino population does not have access to the same quality of care as Caucasians (Bradley, Given, & Roberts, 2002). Access to care can be influenced by many

Purpose/Objectives: To test the effectiveness of a bilingual education intervention to improve the quality of life (QOL) of Latina breast cancer survivors (BCSs) after completing primary treatment for breast cancer.

Design: A two-group prospective, longitudinal, randomized, controlled trial.

Setting: An ambulatory-care setting of a designated comprehensive cancer center in southern California.

Sample: 52 English- and Spanish-speaking Latina BCSs.

Methods: Women were randomly assigned to the experimental or attention control group and completed measures of QOL, uncertainty, distress, and acculturation at baseline, and at three and six months postintervention.

Main Research Variables: QOL, uncertainty, and distress.

Findings: After controlling for acculturation, the four dimensions of QOL increased slightly in the groups or remained unchanged without significant group-by-time interaction. The social and psychological well-being subscales had the lowest scores, followed by physical and spiritual well-being. Although the group-by-time interaction was not statistically significant, the post-hoc difference for total QOL between time 2 and time 3 in the experimental group approached significance, with a slight increase in total QOL.

Conclusions: Latina BCSs have multiple survivorship and QOL concerns that might put them at risk for poor QOL.

Implications for Nursing: More culturally congruent intervention studies are needed to address the paucity of intervention research with Latina BCS.

Knowledge Translation: Core values must be incorporated in the development of health education programs. Those programs also should be linguistically appropriate and available to non-English-speaking Latinas. In this way, the informational and supportive needs of all BCSs can be met.

factors, including insurance status, linguistic isolation, education, insufficient information, language barriers, immigration status, racism, acculturation, lack of understanding of the U.S. healthcare system, and scarcity of ethnically and culturally sensitive healthcare facilities (Bradley et al., 2002; Guidry, Torrence, & Herbelin,

2005). Despite the largest rate of labor force participation of all ethnic groups, Latinos are the poorest minority group and have the highest rate of uninsured people (Pew Hispanic Center, 2010).

Acculturation levels are associated with positive and negative health behaviors and outcomes among Latinos (Arcia, Skinner, Bailey, & Correa, 2001). As language skills improve, healthy living behaviors may decrease. Length of time living in the United States and acculturation are considered potential stressors because of difficulties with language, isolation from support systems, and fewer social ties. Insaf, Jurkowski, and Alomar (2010) documented that as acculturation increases, traditional values toward family support decreased for some Latinos. Those factors can contribute to increased psychological distress. Risk factors for psychological distress among Latina BCSs vary according to their level of acculturation, which also is influenced by age, place of residence, employment, and social networks (Thomson & Hoffman-Goetz, 2009).

The purpose of the current pilot study was to test the effectiveness of an English and Spanish education intervention to assist Latina BCSs in the transition to survivorship. *Nueva Luz* (new light), is a bilingual breast cancer educational intervention designed by the primary researcher to improve the QOL of Latina BCSs after completing primary treatment.

The conceptual framework guiding this research was the model of QOL in cancer survivorship. Overall QOL was defined as a personal sense of well-being that encompasses physical, psychological, social, and spiritual dimensions (Dow, Ferrell, Leigh, Ly, & Gulasekaram, 1996; Ferrell, Dow, Leigh, Ly, & Gulasekaram, 1995), and is a subjective experience influenced by culture and life experiences (Kagawa-Singer, Padilla, & Ashing-Giwa, 2010). The current study focused on QOL in post-treatment survivorship.

Methods

Sample and Setting

Eligibility criteria included English- and Spanish-speaking Latinas aged 18 years or older with a histologically confirmed diagnosis of stage I, II, or III breast cancer; who completed primary treatment with surgery, radiation therapy (if indicated), or neoadjuvant or adjuvant chemotherapy (if indicated); and may have received adjuvant hormonal therapy, such

Table 1. Demographic and Clinical Characteristics by Group (N = 52)

Characteristic	Experimental Group (n = 34)	Control Group (n = 18)	Total	p
Age (years)				0.245
36–49	16	12	28	
50–66	18	6	24	
Birthplace				0.034
United States	4	7	11	
Other	30	11	41	
Education				0.154
Less than high school	14	3	17	
High school	13	8	21	
College or higher	7	7	14	
Religion				0.761
Catholic	23	11	34	
Other	11	7	18	
Marital status				0.776
Married	17	10	27	
Not married	17	8	25	
Employment status				0.083
Employed	6	8	14	
Homemaker	7	4	11	
Retired or unemployed	21	6	27	
Income ($)				0.067
Less than 20,000	14	3	17	
20,000–100,000	8	10	18	
More than 100,000	2	1	3	
Declined response	10	4	14	
Cancer stage at diagnosis				0.063
I	8	10	18	
II	17	6	23	
III	9	2	11	
Comorbid conditions				0.529
Yes	24	11	35	
No	9	7	16	
Declined response	1	–	1	
Chemotherapy				1.000
Before surgery	13	5	18	
After surgery	20	9	29	
Declined response	1	4	5	
Radiation therapy				0.497
Yes	22	14	36	
No	9	3	12	
Declined response	3	1	4	
Hormonal therapy				0.126
Yes	11	11	22	
No	18	6	24	
Declined response	5	1	6	
Complementary treatments				0.775
Yes	15	7	22	
No	19	11	30	
Language				0.068
Spanish	25	8	33	
English	9	10	19	

Table 2. Acculturation Scores by Group (N = 52)

| Variable | Experimental Group (n = 34) | | Control Group (n = 18) | | |
	$\bar{X}$	SD	$\bar{X}$	SD	p
Preferred language for personal life	1.63	1.03	2.78	1.69	0.015
Preferred language for media	2.28	1.4	3.31	1.65	0.021
Total acculturation score	1.88	1.1	2.98	1.64	0.017

Note. Scale ranges from 1 (only Spanish) to 5 (only English).

as tamoxifen, during the course of the study because it is recommended for five years after primary and adjuvant therapy. Study participants were recruited from the medical oncology adult ambulatory care clinics at a National Cancer Institute (NCI)–designated comprehensive cancer center. The researchers screened 137 BCSs, 68 were ineligible (cancer stage, metastasis, recurrence, or long-term survivors), and 17 declined the study. Of the 52 Latina BCSs that met the inclusion criteria and completed questionnaires, 50 were available for testing at all three time periods for most of the outcome variables (two experimental patients were lost to follow-up at time 3); 34 participants were placed in the experimental group and 18 were placed in the control group.

Design

A two-group prospective, longitudinal, randomized, controlled trial was used for the pilot project. Patients were randomly assigned to the experimental or attention control group. The attention control condition involved usual care and monthly telephone calls provided to patients. Usual care consisted of support from patients' healthcare teams as well as services provided through the cancer center, which included supportive-care services, monthly educational workshops, support groups, access to a cancer information resource nurse, and access to written materials through a patient and family resource center. Patients assigned to the experimental group received the intervention in Spanish or English, depending on preference.

Procedures

The study was reviewed and approved by the institutional review board at City of Hope in Duarte, CA. Patients' physicians introduced the purpose of the study and solicited permission from potential participants to meet with the bilingual and bicultural principal investigator responsible for all aspects of study procedures, including subject accrual, intervention implementation, and follow-up. The principal investigator approached all eligible individuals during a regularly scheduled clinic visit to introduce the study's purpose and procedures. Written, informed consent was obtained in participants' preferred language prior to enrollment.

Participants randomized to the attention control group received initial face-to-face baseline assessment and completed questionnaires at baseline, three months, and six months. They also received monthly telephone follow-up calls from the principal investigator. The phone calls were designed for retention purposes only. At the end of the six-month study period, patients randomized to the attention control group were offered the education intervention delivered over two face-to-face sessions and bilingual printed teaching materials were provided.

For participants in the experimental group, the principal investigator delivered the first session one week after accrual, randomization, baseline data collection, and evaluation of participants' needs. The subsequent intervention sessions were scheduled weekly, with all four teaching sessions completed at about one month postaccrual. Length of the intervention was tailored to participants' needs and was about 40–60 minutes in length. The sessions were delivered in English or Spanish,

Table 3. Uncertainty and Distress Scores Across Three Time Points (N = 52)

| Variable | Experimental Group (n= 34)[a] | | | Control Group (n = 18) | | | |
	$\bar{X}$	SD	Adjusted $\bar{X}$	$\bar{X}$	SD	Adjusted $\bar{X}$	p
Uncertainty							0.208
Baseline	57.81	13	56.31	52.72	16.6	55.4	
3 months	58.75	12.7	57.28	48.94	14.9	51.55	
6 months	55.41	13.8	53.51	50.4	14.6	53.76	
Distress							0.305
Baseline	4.43	3	4.38	4	2.4	4.09	
3 months	4.73	3.2	4.53	3	2.2	3.34	
6 months	4	3	3.82	3.39	2.7	3.69	

[a] Two experimental group participants were not measured at 6 months.

Note. Uncertainty scale ranges from 1 (strongly disagree) to 5 (strongly agree); distress scale ranges from 0 (no distress) to 10 (extreme distress).

Table 4. Quality-of-Life Subscales and Overall Scores Across Three Time Points (N = 52)

Variable	Experimental Group (n = 34)			Control Group (n = 18)			p
	$\overline{X}$	SD	Adjusted $\overline{X}$	$\overline{X}$	SD	Adjusted $\overline{X}$	
Overall quality of life							0.416
Baseline	5.46	1.2	5.54	5.98	1.3	5.85	
3 months	5.33	1.3	5.4	6.17	1.6	6.05	
6 months	5.59	1.1	5.71	6.25	1.7	6.03	
Physical well-being							0.896
Baseline	5.96	1.9	5.99	6.43	1.8	6.37	
3 months	5.87	1.9	5.89	6.45	2.2	6.42	
6 months	6.11	2	6.17	6.62	1.9	6.51	
Psychological well-being							0.415
Baseline	4.77	1.6	4.77	5.48	1.8	5.48	
3 months	4.66	1.5	4.66	5.83	1.8	5.83	
6 months	4.88	1.4	4.88	5.85	2	5.85	
Social well-being							0.642
Baseline	4.54	1.7	4.54	5.02	1.5	5.02	
3 months	4.49	1.7	4.49	5.36	2	5.36	
6 months	4.76	1.7	4.76	5.41	2.3	5.41	
Spiritual well-being							0.628
Baseline	7.84	1.4	7.71	7.91	1.4	8.13	
3 months	7.57	1.3	7.49	7.87	1.5	8.01	
6 months	7.77	1.1	7.74	7.89	1.3	7.95	

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

depending on language preference of the participants. In addition to the intervention, participants received a bilingual education packet in notebook format. After completing the four sessions, monthly support through telephone follow-up sessions was provided by the principal investigator. Outcomes were collected at baseline and repeated at three and six months postintervention.

The Intervention

Nueva Luz is an individualized, multidimensional, bilingual QOL program designed to give Latina BCSs linguistically and culturally appropriate information about high-incidence QOL concerns and strategies to assist women's transition to survivorship. The intervention content was organized using the conceptual model around the QOL domains of physical, psychological, social, and spiritual well-being specific to breast cancer. Cultural and linguistic factors were considered in the design and delivery of the intervention, which included providing the program in participants' preferred language and allowing family members to be present. Session 1 focused on physical well-being and the management of physical symptoms (e.g., pain, fatigue, lymphedema). In session 2, the focus was on psychological well-being (e.g., fear of recurrence, anxiety). Session 3 focused on social well-being (e.g., sexuality, intimacy, family needs,

communication). Session 4 was devoted to spiritual well-being and included a brief summary of the four sessions.

Outcome Measures

All the measures used in the current study were available in English and Spanish. The demographic and treatment data questionnaire was developed by the researchers to highlight important disease and treatment variables in the population. Demographic and treatment data such as age, country of birth, education level, stage of disease, treatments, and use of complementary therapies were collected at baseline. All questionnaires were administered in person at the time of a regular clinical follow-up or were mailed with a self-addressed stamped return envelope.

Acculturation was measured using the short acculturation scale (SASH) developed by Marin, Sabogal, Marin, Otero-Sabogal, and Pérez-Stable (1987). The SASH is

Table 5. Experimental Group Quality-of-Life Scale: Physical Well-Being Across Three Time Points

Variable	$\overline{X}$	SD
Fatigue		
Baseline	5.29	2.79
3 months	5.26	3.22
6 months	5.22	2.64
Aches or pain		
Baseline	5.56	2.71
3 months	5.71	2.96
6 months	5.78	2.86
Sleep changes		
Baseline	5.44	2.78
3 months	5.26	3.29
6 months	5.31	3
Weight gain		
Baseline	5.91	3
3 months	5.65	2.98
6 months	4.47	2.93
Hot flashes or sweats		
Baseline	5.68	3.39
3 months	5.68	3.26
6 months	5.47	2.89

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

Table 6. Experimental Group Quality-of-Life Scale: Psychological Well-Being Across Three Time Points

Variable	$\overline{X}$	SD
How difficult is it for you to cope today as a result of your disease?		
Baseline	4.97	2.73
3 months	4.71	3.29
6 months	4.88	2.85
How difficult is it for you to cope today as a result of your treatment?		
Baseline	4.53	2.79
3 months	4.88	2.9
6 months	4.81	2.87
Has your illness or treatment caused changes in your appearance?		
Baseline	2.94	2.81
3 months	3.91	2.78
6 months	4.59	2.76
Has your illness or treatment caused changes in your self-concept?		
Baseline	3.64	2.74
3 months	4.79	2.95
6 months	5.19	2.69
How distressing was your treatment?		
Baseline	1.79	2.43
3 months	1.53	1.78
6 months	2.06	2.34
How distressing has time been since completion of treatment?		
Baseline	4	2.91
3 months	4.21	3.18
6 months	4.42	3.1
How much anxiety do you have?		
Baseline	5.5	3.19
3 months	4.94	3.28
6 months	5.31	3.14
How much depression do you have?		
Baseline	5.39	3.2
3 months	5.15	3.27
6 months	5.78	3.06
How fearful are you of future diagnostic tests?		
Baseline	4	3.36
3 months	3.32	2.76
6 months	3.34	2.74
How fearful are you of a new cancer?		
Baseline	3.26	3.51
3 months	2.62	2.81
6 months	3	3.26
How fearful are you of a recurrence?		
Baseline	3.22	3.32
3 months	2.76	2.87
6 months	2.87	2.99
How fearful are you of a spreading of your cancer?		
Baseline	3.16	3.16
3 months	3.32	3.36
6 months	2.94	3.03
To what degree do you feel your life is back to normal?		
Baseline	4.09	2.6
3 months	4.26	2.56
6 months	3.59	2.47

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

a 12-item language scale with good internal reliability (coefficient alpha = 0.92). Each item was scored from 1 (only Spanish) to 5 (only English), with a score of 3 indicating use of the two languages equally. Total SASH scores range from 8 (low acculturation) to 40 (high acculturation). The SASH has been validated with Latino subgroups and is a valid indicator of acculturation. The SASH was completed pre-intervention at baseline only.

The City of Hope **QOL Instrument–Breast Cancer**, a validated 45-item questionnaire that includes four dimensions of physical, psychological, spiritual, and social well-being, was used in the current study to assess total QOL. The psychometric properties for the scale are well documented, with internal consistency reliability at 0.77–0.89 for the four subscales and 0.93 overall. The generic patient version, not used in the current study, included factor analysis and content validity with the Functional Assessment of Cancer Therapy questionnaire ($r = 0.78$). Construct validity was demonstrated by discriminating among known groups (Ferrell et al., 1995). The questionnaire was completed at each point of evaluation for the two groups.

The **Mishel Uncertainty in Illness Scale–Community (MUIS-C)** is a 23-item, self-administered measure of patients' uncertainty perceived in illness (Mishel, 1997). Each item represents uncertainty on a five-point Likert-type format ranging from 1 (strongly disagree) to 5 (strongly agree). The MUIS-C is scored in a positive direction, with higher scores indicating a higher degree of uncertainty. Construct validity was demonstrated and internal consistency reliability of the MUIS-C ranged from 0.74–0.92 (Mishel, 1997). Internal consistency reliability in the present study was 0.88. The groups completed the MUIS-C at each point of evaluation.

Distress was measured at each point of evaluation. The **Psychological Distress Thermometer** is a single-question screening instrument to evaluate patients' distress based on a scale of 1–10 after each week. A score of 5 or more may indicate the need to intervene. The distress thermometer showed good reliability (0.68), sensitivity (0.7), and specificity (0.7) (Jacobsen et al., 2005). The National Comprehensive Cancer Network's (2003) guidelines for psychological distress recommend screening all patients with cancer for psychological distress.

Analysis

The data were entered into a relational database and analyzed using SPSS®, version 19.0, after being audited for accuracy. Descriptive statistics were calculated for all variables, and scale scores were computed according to authors' instructions. Demographic and acculturation differences between the groups were tested using contingency table analysis

Table 7. Experimental Group Quality-of-Life Scale: Spiritual Well-Being Across Three Time Points

Variable	$\overline{X}$	SD
How much uncertainty do you feel about the future?		
Baseline	3.91	3.56
3 months	2.94	2.67
6 months	3.42	2.62

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

or independent t-tests, respectively, to identify possible covariates or blocking variables for hypothesis testing. Because country of birth and acculturation differed significantly between groups, the total acculturation score was used as a covariate in the two-way repeated measures analysis of covariance that was conducted on each study outcome. Although the three-month measurement tested the immediate effect of the intervention, the current study's primary end point was the six-month measurement.

Results

Sample

A total of 52 Latina patients participated in the study; 41 were born outside the United States but had lived in the country an average of 25.5 years (SD = 10.9, range 3–42) (see Table 1). Sixty-seven percent of the patients chose to complete study surveys in Spanish. Table 1 displays focus group membership and demographic characteristics.

Data gathered on clinical characteristics revealed that 35 patients reported one or more comorbid condition, although less than half were specified. Those reported included diabetes, hypertension, arthritis, irritable bowel syndrome, depression, and asthma. The control group had significantly higher personal, media, and total acculturation scores than the experimental group (see Table 2). Therefore, study hypotheses were tested using the total acculturation score as a covariate.

Uncertainty and Distress

Uncertainty and distress means, standard deviations, and adjusted means by group over time are shown in Table 3. The experimental arm had a significant decrease in uncertainty, which also happened to a lesser degree in the control arm. However, the time interaction was not significant even when controlling for acculturation. The group-by-time interaction was not statistically significant, and in the experimental and control groups, distress also dropped, remaining in the moderate range.

Impact of Intervention on Quality of Life

The four domains of QOL increased slightly or remained unchanged in the two groups, without significant group-by-time interaction (see Table 4). The social and psychological well-being subscales had the lowest scores, followed by physical well-being and spiritual well-being. The group-by-time interaction was not statistically significant for overall QOL; however, in the experimental arm, the post-hoc difference between three months and six months approached significance ($p = 0.052$), with a small increase in overall QOL.

Tables 5–12 provide single selected QOL items with mean scores of 5 or less over time for participants in the experimental and control groups. Those items are identified as potential areas of emphasis in future

Table 8. Experimental Group Quality-of-Life Scale: Social Well-Being Across Three Time Points

Variable	$\overline{X}$	SD
How distressing has your illness been for your family?		
Baseline	2.26	2.19
3 months	1.94	1.71
6 months	1.94	1.92
Is your sexuality impacted by your illness?		
Baseline	5.47	4.08
3 months	5.12	3.86
6 months	4.62	3.78
To what degree has your illness and treatment interfered with your employment?		
Baseline	4.33	4.29
3 months	4.56	4.1
6 months	4.62	3.89
To what degree has your illness and treatment interfered with your activities at home?		
Baseline	4.24	2.7
3 months	4.97	2.8
6 months	5.84	2.94
How much isolation do you feel is caused by your illness?		
Baseline	5.21	2.94
3 months	4.91	3.31
6 months	6	3.3
How much concern do you have for your daughter(s) or other close female relatives regarding breast cancer?		
Baseline	2.7	3.11
3 months	2.68	3.11
6 months	3.13	3.55
How much financial burden have you incurred as a result of your illness and treatment?		
Baseline	3.12	3.33
3 months	2.94	3.28
6 months	2.59	2.98

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

Table 9. Control Group Quality-of-Life Scale: Physical Well-Being Across Three Time Points

Variable	X̄	SD
Vaginal dryness or menopausal symptoms		
Baseline	5.39	3.65
3 months	4.94	3.58
6 months	5.17	3.57
Menstrual changes		
Baseline	4.78	3.8
3 months	4.38	3.46
6 months	7.14	3.19
Hot flashes or sweats		
Baseline	4.11	2.76
3 months	4.41	3
6 months	4.39	2.85
Changes in appearance		
Baseline	3.5	3.19
3 months	5.17	3.13
6 months	4.22	3.34

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

studies. Several individual items in each of the QOL domains were troublesome for the two groups. For physical well-being, participants reported moderately low scores for symptoms such as hot flashes and sweats, menstrual changes, fatigue, vaginal dryness, sleep changes, pain, and weight gain. The lowest scores were reported in the psychological and social domains. Participants reported significant distress and concern related to the impact of treatment on their appearance and self-concept and did not feel that their life was back to normal. For social well-being, the groups reported significant family distress, concern for their daughters' and other female relatives' cancer risks, financial burden, sexuality issues, interference with their daily activities at home, and employment issues. Low scores were reported for uncertainty in the spiritual well-being domain.

Discussion

To the best of the researchers' knowledge, the current study was the first bilingual education intervention that focused exclusively on Latina BCSs. In the study, the intervention targeted a sample of English- and Spanish-speaking Latina BCSs to improve QOL in the immediate survivorship period. The intervention was innovative in providing linguistic and cultural congruency. The pilot study demonstrated feasibility, and findings suggested that improvements were seen in overall QOL, uncertainty, and distress, and that the effect was sustained over time. Although significant differences were seen in QOL, uncertainty, and distress measures, the differences were small with only mild improvement observed. The data showed that Latina

BCSs have many QOL concerns. Ninety-six percent of the sample reported problems with fatigue, a symptom described as distressing for cancer survivors across ethnic groups (Eversley et al., 2005; Fatone, Moadel, Foley, Fleming, & Jandorf, 2007; Janz et al., 2007). The most prevalent symptoms reported included menstrual changes, hot flashes and sweats, weight gain, aches and pain, and sleep changes. Similar findings have been reported on symptoms experienced by African American and Caucasian BCSs after completing primary treatment (Bowen et al., 2007; Ganz, Kwan, Stanton, Bower, & Belin, 2011; Janz et al., 2009). Janz et al. (2009) indicated that Latinas and African Americans reported lower physical well-being relative to Caucasian women.

For the current sample, the primary domains of concern were psychological and social. The participants reported severe distress related to treatment, including changes in their appearance, fear of recurrence, or a new cancer spreading. The findings are supported by previous studies of multiethnic samples where Latinas have reported poorer psychological and emotional well-being than African Americans and Caucasian BCSs (Ashing-Giwa, Tejero, Kim, Padilla, & Hellemann, 2007; Bowen et al., 2007; Carver, Smith, Petronis, & Antoni, 2006; Janz et al., 2009; Nápoles-Springer, Ortíz, O'Brien, Díaz-Méndez, & Pérez-Stable, 2007). In the social domain, participants were concerned about family distress, particularly their daughters and close female relatives getting breast cancer. In similar studies, Latinas reported the lowest level of social support relative to African American and Caucasian women (Ashing-Giwa et al., 2007; Galván, Buki, & Garcés, 2009; Janz et al., 2008). Other studies reported that Latinas experience poorer QOL and increased distress compared to African American and Caucasian women (Ashing-Giwa, Padilla, Tejero, & Kim, 2004; Spencer et al., 1999).

Spirituality and religion are central to Latino culture and, for many, provide the foundation for coping with breast cancer and its effects (Campesino & Schwartz, 2006; Wildes, Miller, de Majors, & Ramirez, 2009), evidenced by the high levels of spirituality in the current study's sample. Those results are supported by other studies that documented that Latina BCSs with high levels of spirituality feel closer to and find comfort in God (Buki, Salazar, & Pitton, 2009), use prayer as a coping strategy, and believed their faith was the key to recovering and coping with illness and cancer survivorship experience (Fatone et al., 2007; Wildes et al., 2009). Other research suggested that faith and spiritual well-being also are a very important component of QOL for African American BCSs (Bellizzi et al., 2010; Russell, Von Ah, Giesler, Storniolo, & Haase, 2008). Spiritual care is essential to QOL, and recognizing the influences of religious and spiritual beliefs and their

Table 10. Control Group Quality-of-Life Scale: Psychological Well-Being Across Three Time Points

Variable	$\overline{X}$	SD
Has your illness or treatment caused changes in your self-concept?		
Baseline	4.94	3.9
3 months	5.88	3.72
6 months	5.82	3.32
How difficult is it for you to cope today as a result of your treatment?		
Baseline	2.94	2.69
3 months	2.83	2.92
6 months	2.83	2.79
How distressing has time been since completion of treatment?		
Baseline	4.71	2.97
3 months	5.89	2.91
6 months	6.06	3.19
How much anxiety do you have?		
Baseline	5.28	2.65
3 months	5.83	2.88
6 months	5.94	2.98
How fearful are you of future diagnostic tests?		
Baseline	4.83	2.79
3 months	4.5	2.85
6 months	4.67	3.01
How fearful are you of a new cancer?		
Baseline	4.17	3.63
3 months	4.56	3.24
6 months	5	3.07
How fearful are you of a recurrence of cancer?		
Baseline	4.35	3.62
3 months	3.61	3.17
6 months	4.61	3.2
How fearful are you of spreading of your cancer?		
Baseline	4.78	3.41
3 months	4.72	3.79
6 months	4.83	3.02
To what degree do you feel your life is back to normal?		
Baseline	4.17	2.31
3 months	2.67	2.09
6 months	3.56	3.03

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

potential impact in adjusting to life after breast cancer treatment is important.

In the current sample, the mean score over time for uncertainty was higher than mean scores for predominantly Caucasian samples of BCSs reported by Sammarco and Konecny (2008, 2010), which suggests that Latina BCSs may experience a greater amount of uncertainty related to lack of understanding about breast cancer and side effects, financial concerns, fear of recurrence, and what to expect after completing primary treatment. Sammarco and Konecny (2008, 2010) suggested that increased uncertainty may have a negative impact on overall QOL for all BCSs. Therefore, culturally congruent strategies should be developed to reduce uncertainty in Latina BCSs.

The research team anticipated that the bilingual intervention would result in significant improvements in overall QOL for the current sample. Although positive changes were detected, they were mild, which may not be surprising when other factors such as insurance and employment are considered. Cancer stage also may have played a role in the results. A study by Ashing-Giwa, Padilla, Bohorquez, Tejero, and Garcia (2006) suggested that Latinas, particularly those with low acculturation, have difficulty understanding and processing information in English related to their breast cancer provided in the medical care setting. Other studies on QOL for Latina BCSs suggested that Latinas face special challenges navigating the U.S. healthcare system not only because of language, but also resulting from contextual factors such as financial and insurance barriers, low acculturation and communication problems, immigration status, lack of significant social support, unemployment, lack of transportation, and lack of child care, which are shown to be correlates of poorer health outcomes in disadvantaged ethnic minorities (Ashing-Giwa, 2005; Ashing-Giwa et al., 2006; Janz et al., 2009; Lopez-Class et al., 2011, 2012; Yanez, Thompson, & Stanton, 2011).

Study Limitations

The current study was a mentored, research-funded grant with no additional funds for research personnel. As a result, the principal investigator was responsible for all aspects of study procedures, including participant accrual, obtaining informed consent, intervention implementation, and follow-up for the groups, which may have influenced the participants to report more positive outcomes. The sample consisted of Latina BCSs receiving care at an NCI-designated cancer center in southern California and may not be representative of a national sample of Latina BCSs. The majority of the participants were of Mexican ancestry, and ages and levels of education were greatly

Table 11. Control Group Quality-of-Life Scale: Spiritual Well-Being Across Three Time Points

Variable	$\overline{X}$	SD
How much uncertainty do you feel about the future?		
Baseline	5.33	3.34
3 months	4.67	3.55
6 months	4.94	3.73

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

Table 12. Control Group Quality-of-Life Scale: Social Well-Being Across Three Time Points

Variable	$\overline{X}$	SD
How distressing has your illness been for your family?		
Baseline	2.22	2.46
3 months	2.72	2.59
6 months	2.78	2.56
Is your sexuality impacted by your illness?		
Baseline	4.25	3.59
3 months	4.06	3.64
6 months	4.31	3.98
How much concern do you have for your daughter(s) or other close female relatives regarding breast cancer?		
Baseline	2.67	3.93
3 months	2.83	3.68
6 months	3	3.36
How much financial burden have you incurred as a result of your illness and treatment?		
Baseline	3	2.87
3 months	2.88	3.12
6 months	3.67	3.25

Note. Scores range from 0 (poor quality of life) to 10 (best quality of life).

diversified; therefore, results may not generalize to other Latina BCSs subgroups. Although the majority of the sample was monolingual in Spanish, most of the participants had lived in the United States an average of 25.5 years; consequently, the experiences of those participants may differ from recent Latina immigrants. In addition, the relatively small sample limits interpretability and generalizability. Despite those limitations, the pilot study provided notable and important findings on the feasibility of a linguistically and culturally sensitive intervention that may inform additional development and testing.

Implications for Nursing Practice

Latina BCSs are likely to benefit from bilingual interventions that may improve QOL. More studies are needed to determine the efficacy of linguistically and culturally tailored interventions to improve QOL in post-treatment survivorship. Non–English-speaking and low-acculturated Latinas are more vulnerable to poor QOL and increased distress and may benefit from bilingual education interventions that consider core cultural values and beliefs. Janz et al. (2008) indicated that Spanish-monolingual or limited–English-speaking Latinas would like to receive cancer education in their native language, congruent with their cultural beliefs and values. Studies indicated that patients have more difficulty communicating and understanding writ-

ten and verbal information in English given by their healthcare provider (Fatone et al., 2007).

The current study broadens understanding of the experience of Latina BCSs, and results demonstrated that patients can be accrued and will complete questionnaires and participate in an intervention. More culturally congruent intervention research is needed to help improve health outcomes of Latina BCSs. Additional studies should aim to test the intervention among larger samples with the statistical power to test for interaction among key variables. More inquiry with the teaching materials would help to revise the intervention to make it stronger. Tremendous cultural differences exist among ethnic groups regarding communication styles, decision-making preferences, adherence to treatment, use of rituals, and willingness to adopt surveillance and health maintenance behaviors post-cancer treatment. In a diverse society, attention to those differences is a necessary component for the delivery of culturally congruent healthcare. Latina BCSs need and deserve all the knowledge and tools available in their preferred language to decrease burden and reduce or eliminate health disparities, helping to improve QOL and their transition to survivorship.

Conclusions

The findings suggested that Latina BCSs have multiple QOL and survivorship issues and concerns that may put them at risk for poorer QOL and adjustment to survivorship, particularly when compared to Caucasian BCSs. The findings also provided preliminary insight to the impact of a tailored, bilingual education intervention on the QOL of Latina BCSs.

The current study adds to the limited body of literature about that population and offers some key directions for guiding the development of culturally and linguistically tailored QOL interventions. Information, support, and resources can assist Latina BCSs in managing their symptoms and QOL issues throughout survivorship.

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