

Examining Emotional Outcomes Among a Multiethnic Cohort of Breast Cancer Survivors

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The cancer experience is emotionally challenging (Koopman et al., 2001; Stanton et al., 2000). The resulting emotional sequelae of cancer and its treatments include fear, worry, hopelessness, and sadness, as well as measurable psychological distress with anxiety and depression (Lyons, Jacobson, Prescott, & Oswalt, 2002; Taylor, 2000). These emotional responses are temporary among most survivors, who experience emotional recovery within one to three years. But, for some survivors, these emotions can manifest into chronic and persistent psychological stressors (Basen-Engquist, Hughes, Perkins, Shinn, & Taylor, 2008; Stanton, 2006). In addition, ethnic minority survivors report greater need for information, emotional support, and navigational assistance in their cancer care (Fatone, Moadel, Foley, Fleming, & Jandorf, 2007; Moadel, Morgan, & Dutcher, 2007). Little is known about how specific emotional concerns of breast cancer survivors vary by ethnic group membership. Providing optimal care for ethnic minority breast cancer survivors requires an understanding of the psychological and emotional effects of the disease and treatment.

Background

Emotional Outcomes for Breast Cancer Survivors

Emotions are defined as the consequence that arises from a conscious mental reaction subjectively experienced as strong feelings usually directed toward a specific experience and typically accompanied by physiologic and behavior changes in the body (American Heritage Dictionary, 2009). Emotional outcomes are noted as an important domain of overall health-related quality of life (HRQOL) in cancer survivors (Dow, Ferrell, Haberman, & Eaton, 1999; Ferrell, Smith, Cullinane, & Melancon, 2003). Generally, emotional outcomes improve during the first two years after cancer treatment and stabilize thereafter (Burgess et al., 2005; Neyt & Albrecht, 2006). In addition, positive emotional outcomes among survivors, such as finding meaning and purpose in life, experiencing opti-

Purpose/Objectives: To describe emotional concerns among a multiethnic sample of breast cancer survivors from a clinically sensitive approach and to examine differences in emotional items according to demographic characteristics.

Design: Cross-sectional design.

Setting: California Cancer Surveillance Program, Los Angeles-area hospitals, and community agencies in southern California.

Sample: 703 multiethnic, population-based breast cancer survivors, including European, African, Latina, and Asian Americans.

Methods: Two emotional outcome subscales were assessed, one each from the Functional Assessment of Cancer Therapy-General (FACT-G) and the SF-36®.

Main Research Variables: Emotional outcomes and health-related quality of life (HRQOL), as measured by FACT-G, SF-36, and demographic characteristics.

Findings: Emotional item responses measured by the FACT-G and SF-36 varied by ethnicity, income, education, employment status, language, and age. Overall, worry about the cancer getting worse or recurrence (FACT-G), as well as negative feelings about sadness or uncertainty (SF-36), were reported as the most bothersome concerns across all breast cancer survivors regardless of ethnic group.

Conclusions: Findings reveal unique patterns relevant to emotional outcomes on overall HRQOL scores. Clinically, this study suggests the need for greater attention and appreciation of the influence of demographic contexts on emotional well-being.

Implications for Nursing: The findings provide a unique observation of the use of individual item response to inform and enhance the assessment of emotional outcomes for clinical and scientific purposes.

mistic changes in outlook, and greater appreciation of life, have been documented (Bower et al., 2005; Foley et al., 2006; Meyerowitz, Kurita, & D'Orazio, 2008). However, areas of continuing emotional disruption for breast cancer survivors exist. Some studies report uncertainty, somatic distress (lack of sleep and appetite changes), decreased self-esteem, fear of recurrence, anxiety, loss of self-confidence, and depression to be key concerns (Morgan et al.,

2005; Stanton, 2006). Specifically, depression and anxiety are known to be common psychological symptoms for breast cancer survivors, such that depression has been estimated in 57% of patients with breast cancer during the treatment and rehabilitation phases and lasting one to two years (Ell et al., 2005; Eversley et al., 2005; Kash, Mago, & Kunkel, 2005). Such distress may diminish over time; however, it can interfere with overall HRQOL (Friedman et al., 2006; Tomich & Helgeson, 2002).

Fear of recurrence also is a commonly reported ongoing emotional issue, accompanied by an increased sense of physical vulnerability (Bower et al., 2005). Feelings of uncertainty and worry can be induced by news of cancer in other people, follow-up appointments, and treatment reminders (Gill et al., 2004; Kornblith et al., 2003). In addition, feelings of helplessness or hopelessness were associated with poorer breast cancer prognosis (Groenvold et al., 2007).

In an effort to better understand emotional outcomes, the authors investigated emotional well-being and mental health as measured by the Functional Assessment of Cancer Therapy-General (FACT-G) (Cella et al., 1993) and the SF-36® scales (Ware, Snow, Kosinski, & Gandek, 1993), respectively. These instruments are used widely in survivorship research to assess emotional outcomes. Extensive psychometric testing has been conducted on the FACT-G (Overcash, Extermann, Parr, Perry, & Balducci, 2001; Webster, Odom, Peterman, Lent, & Cella, 1999; Winstead-Fry & Schultz, 1997) and SF-36 (Garratt, Ruta, Abdalla, Buckingham, & Russell, 1993; Jenkinson, Coulter, & Wright, 1993; McHorney, Ware, Lu, & Sherbourne, 1994; Wagner et al., 1995), and good reliability and validity scores were shown. However, most studies tend to report the total emotional well-being and mental health score of these measures to provide an overall assessment of emotional outcomes. Such assessment approaches may not capture clinically and culturally sensitive meaning that each scale item represents. For example, an item in the FACT-G emotional well-being scale, "I feel sad," does not have the same meaning as another emotional well-being item, "I worry about dying."

As a result, the total emotional well-being score may not provide the detail that may be important for a fuller understanding as well as clinical practice. An approach to individual items may offer insight into multiethnic breast cancer survivors' lived experience and suggest interventions to improve overall HRQOL (Fatone et al., 2007; Stanton, 2006). Therefore, specific emotional items may need to be examined in conjunction with the overall emotional score to obtain a more comprehensive and clinically sensitive assessment of emotional outcomes.

Demographic Correlates of Emotional Outcomes

Several studies demonstrate the effects of demographic factors such as age, socioeconomic status (SES),

and relational status, which often are identified as predictors of emotional distress (Ell et al., 2005; Hewitt, Herdman, & Holland, 2004; Parker, Baile, De Moor, & Cohen, 2003; Wyatt, Beckrow, Gardiner, & Pathak, 2008). Many researchers report age as a significant predictor of emotional outcomes, indicating that younger women showed greater depression, anxiety (Arndt et al., 2004; Burgess et al., 2005), and distress (Gill et al., 2004); however, they have less difficulty with physical well-being (Arndt et al., 2004; Cimprich, Ronis, & Martinez-Ramos, 2002). In terms of marital status, women who were partnered reported less frequent negative feelings and less distress about the possibility of recurrence than unpartnered women (Dahl et al., 2007; Peuckmann et al., 2007). Such effects seem to be consistent with other evidence that reports the emotional benefits of social support (Carver, Smith, Pertonis, & Antoni, 2006; Helgeson, Snyder, & Seltman, 2004).

Differences in emotional outcomes by ethnicity also are reported. The authors' previous multiethnic study documents greater emotional burden among Latina and Korean Americans, particularly those who are in a lower SES compared to Chinese, Filipino, and European American breast cancer survivors (Ashing-Giwa, Tejero, Kim, Padilla, & Hellemann, 2007). More specifically, Latinas reported almost twice the rate of depressive symptoms as African and European Americans. These studies concluded that depressive symptomatology among Latinas is influenced by their SES, decreased access to services, difficulties with finding culturally and linguistically sensitive services, and gender roles in their culture (Eversley et al., 2005; Morgan, Mock, Rose, & Fogel, 2004).

Study Purpose

This study aims to describe emotional concerns among a multiethnic sample of breast cancer survivors from a clinically sensitive approach and examine differences in emotional items according to demographic characteristics. Specifically, this study will focus on breast cancer survivors in the lowest quartile (25% or lower) of total HRQOL scores who also report poor emotional outcomes. This analytic approach will contribute to identifying specific emotional items that are most troubling and contribute to risk factors for poor emotional and overall HRQOL outcomes.

Methods

The methodologic details, such as sampling, study protocol, recruitment procedures, instrument development, and reliability and validity tests, employed for the study have been reported elsewhere (Ashing-Giwa, Padilla, Tejero, & Kim, 2004). A brief overview of the

participants, sampling procedures, and instruments used follows.

Design and Participants

The current study used data derived from a multiethnic breast cancer survivors' HRQOL study, which is a population-based, cross-sectional design (Ashing-Giwa et al., 2004, 2007). The sample included a total of 703 European (n = 179), African (n = 135), Latina (n = 183), and Asian American (n = 206) breast cancer survivors. Eligible participants were (a) within one to five years of a breast cancer diagnosis and currently cancer-free, (b) diagnosed with stage 0–III cancer, (c) not diagnosed with another type of cancer or major disabling medical or psychiatric condition, and (d) aged 18 years or older. Participants were drawn from the California Cancer Surveillance Program, Los Angeles-area hospitals, and community agencies in southern California. Therefore, a mixed sampling method was employed and participants completed either a telephone survey or mailed survey assessing HRQOL. The study protocol was approved by the University of California, Los Angeles, institutional review board.

Measures

The English version of the questionnaire was translated into Spanish, Korean, and Chinese through a forward-backward translation procedure. The questionnaire was pilot tested with a total of 20 breast cancer survivors, and revisions resulting from the pilot test were incorporated into the final questionnaire. The current study used two emotional outcome subscales, one from the FACT-G and the other from the SF-36.

FACT-G emotional well-being subscale: The FACT-G is a standardized HRQOL instrument comprised of a 27-item general cancer concerns scale, including physical, functional, emotional, and social and family well-being (Cella et al., 1993). The emotional well-being domain includes six items: (a) I feel sad, (b) I am satisfied with how I am coping with my

illness, (c) I am losing hope in the fight against my illness, (d) I feel nervous, (e) I worry about dying, and (f) I worry that my condition will get worse. Participants were asked to indicate how true each statement has been for them during the past four weeks instead of the past seven days (the original measure) to consider the long-term effects of the emotional status for breast cancer survivors. Items were rated from 0 (not at all) to 4 (very much). Five items were reverse scored with higher scores indicating better emotional well-being. In this study, reliability coefficients for the emotional well-being subscale were good and ranged from 0.64–0.78 according to ethnicity.

SF-36 mental health subscale: SF-36 is an internally consistent and reliable self-reporting tool that has been used in numerous clinical and epidemiologic studies worldwide for patient and nonpatient populations (Ware et al., 1993). Participants were asked to give one answer that comes closest to how they feel and how

Table 1. Sample Characteristics

Characteristic	Total (N = 703)		European (N = 179)		African (N = 135)		Latina (N = 183)		Asian (N = 206)	
	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD	\bar{X}	SD
Number of comorbidities	1.9	1.6	2.7	1.7	2.1	1.6	2	1.5	1.5	1.5
Years since diagnosis	3	1.7	2.7	1.4	3.6	2.2	2.9	1.6	2.9	1.5
Characteristic	n	%	n	%	n	%	n	%	n	%
Age (years)										
49 or younger	248	35	53	30	41	30	71	39	83	40
50–59	211	30	53	30	47	35	51	28	60	29
60 or older	244	35	73	41	47	35	61	33	63	31
Marital status										
Partnered	455	65	115	64	64	47	121	66	155	75
Unpartnered	248	35	64	36	71	53	62	34	51	25
Income (U.S. \$)										
Less than 25,000	199	28	24	13	39	29	87	48	49	24
25,000–45,000	147	21	38	21	36	27	36	20	37	18
45,001–75,000	146	21	43	24	27	20	27	15	49	24
More than 75,000	182	26	68	38	30	22	23	13	61	30
Not reported	29	4	6	3	3	2	10	5	10	5
Education										
Less than high school	101	14	5	3	9	7	69	38	18	9
High school	76	11	13	7	17	13	27	13	15	9
More than high school	524	75	161	90	108	80	86	47	169	82
Not reported	2	1	–	–	1	1	1	1	–	–
Employment status										
Yes	346	49	101	56	78	58	63	34	104	50
No	357	51	78	44	57	42	120	66	102	50
Language										
English	550	78	179	100	135	100	97	53	139	67
Other	153	22	–	–	–	–	86	47	67	33
Cancer stage										
0	77	11	16	9	6	4	18	9	37	18
I	255	36	62	34	54	40	59	32	80	39
II	267	38	71	40	51	38	75	41	70	34
III	95	14	30	17	20	15	28	15	17	8
Not reported	9	1	–	–	4	3	3	2	2	1

Note. Because of rounding, not all percentages total 100.

things have been with them during the past four weeks. This 36-item measure contains eight subscales: physical functioning, role-physical, pain, general health perception, energy, social functioning, role-emotional, and mental health. The five-item mental health subscale is as follows: (a) Have you been a very nervous person? (b) Have you felt so down in the dumps that nothing could cheer you up? (c) Have you felt calm and peaceful? (d) Have you felt downhearted and blue? (e) Have you been a happy person? Mental health subscale items are rated using a six-point Likert-type scale (1–6), with higher scores indicating better mental health status. In the current study, Cronbach alpha coefficients for the SF-36 mental health subscale were excellent and ranged from 0.82–0.86 according to ethnicity.

Data Analyses

Descriptive analyses, including means, standard deviations, ranges, and percentages, were calculated to examine the characteristics of the variables. Correlation analyses were conducted to examine the relationships of emotional items measured by the FACT-G and SF-36. For the primary purpose of this study, the lowest quartile scores (the 25th percentile of the distribution) were calculated from standardized FACT-G and SF-36 scores by demographic characteristics. Next, the percentages of survivors reporting low emotional outcome levels from participants scoring in the lowest HRQOL quartile were obtained. Responses of *not at all* or *a little bit* to each FACT-G emotional well-being item, as well as *all of the time*, *most of the time*, or *a good bit of the time*, to each SF-36 mental health item were classified as a low emotional outcome level. For the total standardized emotional outcome score (ranging from 0–100), the cutoff score was

set at 50; therefore, the authors defined scores less than or equal to 50 as a low total emotional outcome level. Chi-square tests were used to compare proportions of low emotional outcome levels among patients scoring in the lowest HRQOL quartile by demographic characteristics. Data were analyzed using SPSS®, version 15.0. All hypotheses were tested with a *p* < 0.05 criterion of significance for a two-sided test.

Results

Of the 1,219 accessible breast cancer survivors, 134 were ineligible (cancer-free status, cancer stage, or years since diagnosis), 382 refused, and 703 (58%) completed the survey. Table 1 shows participants’ demographic and medical information by ethnicity. The age of all participants ranged from 29–91 years, with a mean age of 55 (SD = 11.3). The majority of respondents (86%) had completed either high school or college. The mean years since cancer diagnosis was 3, and most participants were diagnosed with cancer stages I or II.

Emotional Items for Breast Cancer Survivors

Correlation analyses of all FACT-G and SF-36 emotional items indicated moderately significant interrelationships for the entire sample (see Table 2). Overall, correlation coefficients from the SF-36 mental health items were better than those from the FACT-G emotional well-being items. In particular, four SF-36 mental health items (“Have you felt so down in the dumps that nothing could cheer you up?” “Have you felt calm and peaceful?” “Have you felt downhearted and blue?” and “Have you been a happy person?”) were highly correlated, indicating that these items may share similar

Table 2. Correlations of the Functional Assessment of Cancer Therapy–General (FACT-G) and SF-36® Emotional Outcome Subscale Items

Item	FACT 1	FACT 2	FACT 3	FACT 4	FACT 5	FACT 6	SF 1	SF 2	SF 3	SF 4	SF 5
\bar{X}	3.02	3.07	3.86	3.2	3.19	2.95	4.88	5.28	4.29	4.95	4.38
SD	1.1	1.2	0.5	1	1.1	1.2	1.2	1.1	1.3	1.2	1.3
FACT 2	0.261	–	–	–	–	–	–	–	–	–	–
FACT 3	0.235	0.139	–	–	–	–	–	–	–	–	–
FACT 4	0.52	0.198	0.287	–	–	–	–	–	–	–	–
FACT 5	0.345	0.24	0.226	0.516	–	–	–	–	–	–	–
FACT 6	0.368	0.186	0.181	0.5	0.618	–	–	–	–	–	–
SF 1	0.42	0.27	0.21	0.515	0.321	0.33	–	–	–	–	–
SF 2	0.572	0.26	0.241	0.401	0.275	0.322	0.561	–	–	–	–
SF 3	0.447	0.308	0.172	0.396	0.331	0.366	0.435	0.508	–	–	–
SF 4	0.594	0.263	0.211	0.371	0.287	0.343	0.499	0.676	0.524	–	–
SF 5	0.428	0.278	0.172	0.318	0.276	0.324	0.375	0.534	0.628	0.482	–

FACT 1—I feel sad; FACT 2—I am satisfied with how I am coping with my illness; FACT 3—I am losing hope in the fight against my illness; FACT 4—I feel nervous; FACT 5—I worry about dying; FACT 6—I worry that my condition will get worse; SF 1—Have you been a very nervous person?; SF 2—Have you felt so down in the dumps that nothing could cheer you up?; SF 3—Have you felt calm and peaceful?; SF 4—Have you felt downhearted or blue?; SF 5—Have you been a happy person?

Note. All FACT and SF items are *p* < 0.001.

Table 3. Demographic Factors of Survivors With Low Total Functional Assessment of Cancer Therapy–General (FACT-G) and SF-36® Emotional Well-Being Scores Among Survivors in the Lowest Quartile

Characteristic	FACT-G					SF-36®				
	N ^a	n ^b	%	χ ²	p	N ^a	n ^b	%	χ ²	p
Age (years)	–	–	–	1.463	> 0.05	–	–	–	6.375	< 0.05
49 or younger	67	22	33	–	–	62	26	42	–	–
50–59	60	14	23	–	–	52	22	42	–	–
60 or older	74	20	27	–	–	61	14	23	–	–
Marital status	–	–	–	0.024	> 0.05	–	–	–	0.001	> 0.05
Partnered	117	35	30	–	–	107	40	37	–	–
Unpartnered	71	22	31	–	–	62	23	37	–	–
Income (U.S. \$)	–	–	–	17.835	< 0.001	–	–	–	24.136	< 0.001
Less than 25,000	56	28	50	–	–	49	29	59	–	–
25,000–45,000	40	10	25	–	–	38	9	24	–	–
45,001–75,000	41	9	22	–	–	38	7	18	–	–
More than 75,000	56	9	16	–	–	45	9	20	–	–
Education	–	–	–	7.547	< 0.05	–	–	–	9.075	< 0.05
Less than high school	15	6	40	–	–	15	10	68	–	–
High school	31	15	48	–	–	29	12	41	–	–
More than high school	134	33	25	–	–	130	38	29	–	–
Employment status	–	–	–	0.372	> 0.05	–	–	–	5.18	< 0.05
Yes	52	12	23	–	–	85	22	26	–	–
No	105	29	28	–	–	90	38	42	–	–
Language	–	–	–	14.673	< 0.001	–	–	–	17.166	< 0.001
English	174	35	20	–	–	134	36	27	–	–
Other	38	19	50	–	–	38	24	63	–	–
Ethnicity	–	–	–	15.636	< 0.01	–	–	–	4.341	> 0.05
European American	34	7	14	–	–	42	12	29	–	–
African American	51	7	21	–	–	34	9	27	–	–
Latin American	48	23	48	–	–	48	22	46	–	–
Asian American	54	18	33	–	–	52	18	35	–	–

^a The total number of participants in the lowest health-related quality-of-life quartile by demographic characteristics

^b The number of participants reporting low emotional outcome levels (less than 50) among survivors in the lowest health-related quality-of-life quartile

conceptual meanings. In terms of the FACT-G emotional well-being subscale, three of the six items showed strong correlation coefficients ($r > 0.5$; $p < 0.001$), including “I feel nervous,” “I worry about dying,” and “I worry that my condition will get worse.”

For each ethnic group, correlation coefficients showed slightly different results according to ethnicity. For example, the responses of European Americans indicated that the item of “I am losing hope in the fight against my illness” (FACT-G) was not significantly related to most other FACT-G and SF-36 emotional items. The responses of African and Latina Americans did not show significant relationship for the items “I am satisfied with how I am coping with my illness” (FACT-G) and “I am losing hope in the fight against my illness” (FACT-G). For Latina and Asian Americans, responses did not demonstrate a significant relationship for the items “I am satisfied with how I am coping with my illness” (FACT-G) and “I feel nervous” (FACT-G).

Findings indicate that the item “I worry that my condition will get worse” showed the lowest score of all items in the FACT-G emotional well-being subscale ($\bar{X} = 2.95$; $SD = 1.2$). In the SF-36 mental health subscale,

the item “Have you felt calm and peaceful?” obtained the lowest score ($\bar{X} = 4.29$; $SD = 1.3$).

Emotional Items by Demographic Characteristics

FACT-G emotional well-being: Table 3 depicts percentages of survivors reporting low total emotional outcome levels among women in the lowest HRQOL quartile by demographic characteristics. Overall, survivors reporting low total emotional outcome levels ranged from 14%–50%. Survivors at more than 40% representation in low total emotional outcome levels tended to be Latinas (48%) and women reporting low income (less than \$25,000 per year) (50%), low education levels (high school or less) (40%–48%), and not being proficient in English (50%). Similarly, significant differences were found in the proportion of survivors reporting low total emotional outcome levels by ethnicity, income, education, and language. Differences by marital status, employment status, and age were not found.

Table 4 shows the percentages of survivors reporting low emotional outcome levels among women in the lowest quartile of the overall FACT-G scores by

demographic characteristics. Overall, survivors categorized in low emotional outcome levels in specific items ranged from 0%–54%. The majority of survivors in the lowest quartile were more likely to respond to “I feel sad” (13%–54%) and “I worry that my condition will get worse” (12%–53%) items. In terms of demographic characteristics, ethnicity, income, and language showed significant differences in the three emotional well-being items. Therefore, survivors who self-identified as Latina, with low income, and who were monolingual (speaking Spanish) were more likely to respond to “I feel sad,” “I am satisfied with how I am coping with my illness,” and “I worry that my condition will get worse,” specifically. Only one of these items showed a significant association with age, indicating that survivors who are younger than age

49 are more likely to worry that their condition would get worse.

SF-36 mental health: Findings from the total SF-36 mental health subscale score showed different patterns compared to the total FACT-G emotional well-being score (see Table 3). Unlike the FACT-G, employment status and age showed significant differences in the proportion of survivors reporting low total emotional outcome levels among women in the lowest HRQOL quartile; however, ethnicity did not show significant differences. Income, education, and language still were significant. Overall, survivors reporting low total emotional outcome levels ranged from 18%–67%. Survivors at greater than 40% in low total emotional outcome levels were women who self-identified as Latinas (46%), reported low-income (less than \$25,000) (59%), had low

Table 4. Functional Assessment of Cancer Therapy–General (FACT-G) Emotional Well-Being Item Scores by Demographic Characteristics

			FACT 1		FACT 2		FACT 3		FACT 4		FACT 5		FACT 6	
Variable	25% Score	N ^a	n	%	n	%	n	%	n	%	n	%	n	%
Ethnicity														
European American	56	51	11	22	5	10	—	—	5	10	9	18	15	29
African American	56	34	9	27	3	9	1	3	7	21	5	15	4	12
Latina American	53	48	26	54	14	29	2	4	11	23	14	29	23	48
Asian American	57	54	14	26	10	19	—	—	13	24	11	20	14	26
X ²	—	—	14.761**		8.56*		4.093		4.19		3.113		13.169**	
Marital status														
Partnered	56	117	33	28	25	21	1	1	25	21	27	21	42	36
Unpartnered	54	71	27	38	11	16	2	3	14	20	14	20	22	31
X ²	—	—	1.962		0.985		1.083		0.05		0.292		0.475	
Income (U.S. \$)														
Less than 25,000	52	56	29	52	15	27	3	5	17	30	17	30	26	46
25,000–45,000	54	40	11	28	10	25	—	—	8	21	10	25	9	23
45,001–75,000	56	41	7	17	2	5	—	—	6	15	7	17	12	29
More than 75,000	59	56	7	13	7	13	—	—	7	13	11	20	12	21
X ²	—	—	24.834***		10.341*		7.455		6.513		2.933		10.1*	
Education														
Less than high school	52	15	8	53	5	33	—	—	5	33	5	33	8	53
Graduated high school	52	31	9	29	7	23	1	3	9	29	9	29	14	45
More than high school	56	134	43	32	18	13	2	2	24	18	25	19	34	25
X ²	—	—	3.051		4.79		0.739		3.249		2.909		8.37*	
Employment status														
Yes	57	52	16	31	9	17	—	—	5	10	8	15	14	27
No	54	105	32	31	16	15	3	3	22	21	21	20	32	31
X ²	—	—	0.001		0.111		1.515		3.139		0.492		0.212	
Language														
English	57	174	42	24	19	11	2	1	26	15	27	16	40	23
Other	52	38	16	42	15	40	1	3	10	26	14	37	16	42
X ²	—	—	5.066*		18.885***		0.491		2.805		9.092**		5.864*	
Age (years)														
49 or younger	56	67	22	33	17	25	—	—	13	20	16	24	30	45
50–59	54	60	20	33	6	10	—	—	9	15	10	17	15	25
60 or older	57	74	18	24	11	15	3	4	16	22	19	26	21	28
X ²	—	—	1.712		5.673		5.227		0.975		1.677		6.668*	

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

^a The total number of participants in the low quartile of overall health-related quality-of-life score

FACT 1—I feel sad; FACT 2—I am satisfied with how I am coping with my illness; FACT 3—I am losing hope in the fight against my illness; FACT 4—I feel nervous; FACT 5—I worry about dying; FACT 6—I worry that my condition will get worse.

Table 5. Survivors With Low SF-36® Mental Health Item Scores by Demographic Characteristics

Variable	25% Score	N ^a	SF 1		SF 2		SF 3 ^b		SF 4		SF 5 ^b	
			n	%	n	%	n	%	n	%	n	%
Ethnicity												
European American	63	42	7	17	6	14	27	64	15	37	26	62
African American	56	34	9	27	7	21	19	58	9	27	21	62
Latina American	49	48	18	38	18	38	34	71	21	44	32	67
Asian American	64	52	16	31	14	27	29	56	12	23	31	60
X ²	—	—	5.003		6.893		2.816		5.742		0.554	
Marital status												
Partnered	60	107	30	28	27	25	66	62	34	32	70	65
Unpartnered	54	62	19	31	20	32	37	61	25	40	34	55
X ²	—	—	0.13		0.965		0.017		1.168		1.857	
Income (U.S. \$)												
Less than 25,000	43	49	23	47	26	53	37	76	26	53	37	76
25,000–45,000	60	38	8	21	7	18	25	66	12	32	23	61
45,001–75,000	61	38	7	18	2	5	19	50	8	22	19	51
More than 75,000	73	45	9	20	4	9	20	44	8	18	20	44
X ²	—	—	12.875**		37.329*		11.483**		16.019**		10.673*	
Education												
Less than high school	40	15	7	47	8	53	12	80	8	53	14	93
Graduated high school	44	29	8	28	10	35	21	72	10	35	16	55
More than high school	63	130	34	26	26	20	74	57	41	32	76	59
X ²	—	—	2.803		9.467**		4.777		2.779		7.352*	
Employment status												
Yes	66	85	18	21	13	15	47	55	17	20	53	62
No	49	90	32	36	30	33	62	69	40	45	57	63
X ²	—	—	4.429*		7.675**		3.439*		12.281*		0.018	
Language												
English	60	134	29	22	28	21	77	58	42	32	71	53
Other	52	38	21	55	18	47	29	76	17	45	33	87
X ²	—	—	16.23*		10.59**		4.256*		2.264		14.196*	
Age (years)												
49 or younger	62	62	22	36	20	32	33	53	24	39	37	60
50–59	53	52	16	31	15	29	33	64	19	37	34	65
60 or older	59	61	11	18	12	20	39	65	17	28	33	54
X ²	—	—	4.926		2.628		2.068		1.592		1.485	

* $p < 0.05$; ** $p < 0.01$

^a The total number of participants in the low quartile of overall health-related quality-of-life score

^b Reverse-coding items

SF 1—Have you been a very nervous person?; SF 2—Have you felt so down in the dumps that nothing could cheer you up?; SF 3—Have you felt calm and peaceful?; SF 4—Have you felt downhearted or blue?; SF 5—Have you been a happy person?

education levels (less than a high school diploma) (67%), were unemployed (42%), were not proficient in English (63%), and were younger than age 60 (42%).

In terms of the SF-36 mental health subscale item scores, the majority of survivors in the lowest HRQOL quartile negatively responded to the items “Have you felt calm and peaceful?” (44%–80%) and “Have you been a happy person?” (44%–93%), such that survivors with low emotional outcome levels are less likely to express positive emotions such as calmness or happiness (see Table 5). Regarding demographic characteristics, income, employment status, and language showed significant differences in most SF-36 mental health items; this pattern was repeated in the SF-36 total mental health score. In addition, education was significantly associated with two SF-36 mental health items (“Have

you felt so down in the dumps that nothing could cheer you up?” and “Have you been a happy person?”), indicating that survivors with low education levels were more likely to express negative emotions (i.e., feeling down and unhappiness).

Discussion

This study focused on describing the survivor’s appraisal of emotional status as assessed by individual items measured by the FACT-G and SF-36, and investigated differences by demographic characteristics within a multiethnic and multilingual sample of breast cancer survivors. In summary, findings demonstrate that the indicators of less favorable emotional outcomes were (a) ethnicity: Latina American survivors, (b) income: lower

income earners, (c) education: less-educated survivors, (d) employment status: survivors who are unemployed, (e) language: survivors who cannot speak English, and (f) age: younger survivors. Overall, worry about the condition getting worse or cancer recurrence (FACT-G), as well as negative feelings relevant to unhappiness or lack of peacefulness (SF-36), were reported as the most bothersome concern across all ethnic breast cancer survivors. Specifically, this study employed a clinically sensitive approach considering the proportion of breast cancer survivors reporting low emotional outcome levels based on the lowest quartile of total HRQOL scores. This study's analytic approach can be useful for a more clinically and culturally based assessment of emotional functioning. In addition, this methodologic approach may contribute to identifying specific emotional concerns that can inform better clinically responsive interventions.

The current study used the FACT-G and the SF-36 emotional outcome subscales to investigate each emotional item. These scales are known to be internally consistent and reliable self-report tools that have been used in numerous studies worldwide and standardized with normative populations. However, most studies have not analyzed the sensitive meaning which each item of the FACT-G and SF-36 emotional outcome subscales connote, focusing on reliability and validity within each subscale. In fact, the authors' findings demonstrated the validity for the entire sample, while convergent validity in assessing emotional outcomes with a multiethnic and multilingual population remains challenging with variance in the correlation analyses within each ethnic group. In addition, the authors found that individual items provided added value to a meaningful assessment of emotional outcomes. Such patterns emerged in the FACT-G emotional well-being subscale, specifically. This finding supports the importance of clinically sensitive approaches to identifying and dealing with relevant emotional concerns (e.g., fear, anxiety, worry, depression, sadness, uncertainty) among breast cancer survivors.

This study's analytic approach provided new and clinically sensitive data from each item beyond the composite score. Therefore, an item may provide unique information that may be clinically and conceptually informative; such that to fully appreciate one's emotional outcomes, both the total score as well as the item data must be considered. For example, in terms of the FACT-G emotional well-being subscale, the authors found that sadness and worry are major emotional concerns across all ethnic breast cancer survivors in the lowest quartile of total HRQOL scores. In the SF-36 mental health subscale, the majority of survivors in the lowest quartile (50%–80%) negatively responded to emotions such as happiness, peacefulness, or calmness. In addition, about 20%–30% of breast cancer survivors expressed

anxiety- and depression-related concerns. Therefore, healthcare providers must not overlook such psychological symptoms.

The findings highlight common emotional issues that breast cancer survivors express and items that contribute to unfavorable emotional outcomes. This study also explores differences in emotional items according to demographic characteristics, such as ethnicity, marital status, income, education, employment status, language, and age. Findings demonstrated that the FACT-G and SF-36 emotional outcome subscales showed different patterns in the relationship of emotional items and demographic characteristics. The FACT-G emotional well-being items varied by ethnicity, income, and language, whereas the SF-36 mental health items were found to vary by income, language, education, and employment status. Different patterns in the relationship with demographic characteristics of FACT-G and SF-36 scales might be driven by conceptually and linguistically different connotations. Indeed, the emotional well-being subscale of the FACT-G focuses on overall emotional feelings such as sadness, satisfaction, hope, anxiety, and worry, whereas the SF-36 seems to emphasize positive emotions (i.e., calmness, peacefulness, and happiness) and psychological distress (i.e., depression). For example, Asian Americans often are reported as being less likely to express their emotional feelings than European Americans; such that FACT-G measure focusing on emotional feeling rather than mental health components may be more sensitive to ethnic differences. Therefore, among this study sample, the SF-36 seems to have excellent conceptual equivalence across all ethnic groups.

Despite the different patterns in FACT-G and SF-36, income and language were significantly associated with emotional outcomes as measured by both instruments, such that breast cancer survivors who reported lower income and limited English language proficiency were more likely to show poor emotional outcomes. This finding suggests that ethnic and socioeconomic variations in emotional outcomes exist and are consistent with other studies (Casso, Buist, & Taplin, 2004; Wyatt et al., 2008). Given that language is considered a proxy for SES, cultural, linguistic, and socioecologic services may be helpful to improve overall emotional outcomes for ethnic minority populations, particularly those with socioeconomic and language challenges.

Age differences were found for the item "I worry that my condition will get worse," indicating that younger women were more likely to worry about their physical condition. This finding suggests that emotional outcomes for younger women may be more closely related to physical outcomes, and positive expectations for the future rather than negative emotional issues such as losing hope, depression, or sadness. Women who reported low education levels and lack of English proficiency

were more likely to respond to the item “I worry about dying;” providing knowledge, information, and resources regarding breast cancer may be another tool for improving emotional outcomes for multiethnic and multilingual breast cancer survivors.

Several limitations exist. The findings may not generalize to all populations despite the sample being population-based. In addition, the HRQOL data were based on self-report at one time point; therefore, the findings may be influenced by recall bias. Although this study considered the lowest quartile of overall HRQOL scores as a guide for clinical risk, a specific standard has not been established.

Findings reveal unique patterns relevant to emotional outcomes on overall HROL scores. Clinically, this study highlights the need for greater attention to emotional items that consider demographic characteristics such as ethnicity, marital status, income, education, employment status, language, and age. Information regarding the relationship of emotional items and demographic characteristics should inform interventions to match specific emotional outcomes for appropriate target populations. Findings suggest that culturally and linguistically unique meanings exist in each emotional item according to the instrument. Findings point to the need for targeted culturally and clinically responsive research methods and interventions that focus on theoretic and assessment elements to optimally address the psychological care of the diverse cancer survivor community. The current study raised other investigational issues important to advancing understanding and strategies to improve emotional outcomes, including that emotional outcome often is used interchangeably with emotional or psychological well-being, emotional or psychological status, emotional or psychological functioning, psychological outcome, and mental health in cancer

survivorship research. Therefore, the science can benefit from clearer conceptualization and instrumentation for the emotional dimension of HRQOL. In addition, the findings demonstrate that breast cancer survivors are resilient and they do not lose hope even in the face of unfavorable emotional and overall HRQOL scores.

Implications for Nursing

The authors' results draw attention to the importance of nurses and other medical practitioners to attend to their patients' levels of emotional functioning as a component of comprehensive care. The findings provide a unique observation of the use of individual item response to inform and enhance the assessment of emotional outcomes for clinical and scientific purposes. However, healthcare providers should develop more appropriate clinically useful measures of emotional outcomes; these assessment tools should have cross-cultural use. In addition, oncology nursing research and practice can benefit from evidence-base, clinically, and culturally sensitive programs to relieve emotional strains associated with cancer.

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