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Evaluation of the Quality of Life in Adult Cancer Survivors (QLACS) scale for early post-treatment breast cancer survivors

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Abstract

Purpose—The end of primary treatment for cancer patients is increasingly recognized as an important time of adjustment that may impact quality of life (QoL). A psychometrically sound QoL instrument that assesses the mix of acute and longer-term concerns present during this unique time has not yet been identified. This article evaluates the Quality of Life in Adult Cancer Survivors (QLACS) scale, originally developed for long-term (5 years) cancer survivors, as an appropriate QoL measure for this transition period.

Methods—Psychometric properties of the QLACS were evaluated in a sample of post-treatment breast cancer survivors 18–24 months post-diagnosis. This observational study consisted of women ($n = 552$) aged 25 years and older (mean = 55.4 years) who were diagnosed with stage I, II, or III breast cancer. The 47 items of the QLACS comprise 12 domains: seven domains are generic, and five are cancer specific.

Results—The QLACS demonstrated adequate internal consistency (Cronbach's alpha for the 12 domains ranged from 0.79 to 0.91) and good convergent and divergent validity (assessed by comparison with the Functional Assessment of Cancer Therapy and other measures).

Conclusions—The QLACS appears to be consistent with other widely accepted measures in capturing QoL, while also allowing for more inclusive measurement of specific issues relevant to post-treatment cancer survivors. These data, in addition to previous data supporting use of the QLACS across different cancer sites, suggest that the QLACS is a promising comprehensive QoL measure appropriate for breast cancer survivors transitioning off active treatment.

Keywords

Cancer; Oncology; Quality of life; Survivorship; Measurement

Introduction

Breast cancer mortality rates in the United States have significantly declined since 1975 [1] due in large part to improvements in therapy [2]. As a result of these declines, and in combination with an aging population, the number of breast cancer survivors has grown and is projected to continue increasing. There are approximately 2.9 million women living with breast cancer in the USA as of 2011, and 89.2 % of the estimated 232,670 women diagnosed with breast cancer in 2014 are projected to be alive 5 years after diagnosis [3]. As defined by the National Cancer Institute, “a person is considered to be a survivor from the time of diagnosis until the end of life” (www.cancer.gov/dictionary). As breast cancer survivors live many years post-cancer diagnosis, quality-of-life (QoL) issues related to continuing symptoms or problems among cancer survivors have become increasingly important [4].

To address an increased emphasis on QoL, a large number of cancer-specific QoL measures have been developed [5, 6]. Commonly used cancer-specific QoL measures, such as the Functional Assessment of Cancer Therapy-Breast (FACT-B; [7]) and the European Organization for Research and Treatment of Cancer (EORTC) Breast Cancer-Specific Quality of Life Questionnaire (QLQ-BR23; [8]), were designed primarily for cancer survivors in active treatment and have a predominance of items relevant to immediate effects of cancer diagnosis and treatment (e.g., nausea, shortness of breath). The impact of cancer on QoL during the acute diagnostic and treatment phases has been well studied [e.g., 9–11].

Quality of life among long-term cancer survivors (i.e., 5 years post-treatment) is also a growing area of study that aims to identify the long-term and late effects of cancer treatment. These studies typically compare cancer survivors to healthy controls using a generic QoL measure such as the SF-36 [4, 12, 13]. However, such generic measures do not characterize issues relevant to post-treatment cancer survivors such as cognitive problems, financial concerns, or fears of recurrence.

The Quality of Life in Adult Cancer Survivors (QLACS) scale was developed for long-term cancer survivors in response to limitations of QoL scales that focused mostly on acute diagnostic- and treatment-related effects and to limitations of generic measures to assess QoL in cancer survivors [14]. Scale development was based on research among survivors of cancers at various sites (breast, bladder, colorectal, gynecologic, head and neck, and prostate) who were at least 5 years post-diagnosis. The QLACS was designed to measure seven domains that capture quality-of-life components that reflect issues of importance to cancer survivors (e.g., cognitive problems, fatigue, sexual problems), but purposely do not mention cancer to allow comparison between survivors and the general population. The QLACS developers thus refer to these domains as generic. In addition, five of the QLACS domains are cancer specific and refer to cancer-related concerns. A review of QoL instruments for long-term breast cancer survivors noted that the QLACS had good

psychometric properties such as high internal consistency, high validity, and good responsiveness compared to other QoL instruments used in this population [5]. The psychometric properties of the QLACS scale were further evaluated in long-term (8-year) breast cancer survivors [15] and demonstrated good test–retest reliability, high internal consistency, high responsiveness to life changes, and good validity.

To date, QoL research has focused primarily on cancer survivors during active treatment and long-term survivors. However, the time of transition immediately following completion of adjuvant treatment (i.e., chemotherapy, radiation) when patients lose ready access to health care and are reestablishing new normal life patterns has not been well studied. Researchers and clinicians are increasingly interested in this time period, which is considered to be particularly stressful due to new issues that may develop such as financial worries, concern about the family's future, fear of recurrence, lack of preparedness for lingering side effects of treatment (e.g., pain, fatigue, sexual problems, cognitive difficulties, psychological distress), and/or possible changes in social support [16–20]. How one handles the stress experienced during this time period is related to long-term adjustment [21–23]. Cancer survivors may also begin to report positive outcomes of their disease that result from the process of coping with this challenging transition. For example, women have reported better personal relationships, a change in priorities, and/or an increased appreciation for life [24–26], which may be perceived as benefits resulting from being diagnosed with breast cancer.

A recent review of QoL scales for cancer survivors [5] identified a particular need for psychometrically sound QoL instruments appropriate for cancer survivors who are post-primary treatment and 1–5 years post-diagnosis, in order to capture the mix of symptoms that arise during treatment and new issues that develop during the transition off primary treatment. Although originally developed for long-term cancer survivors, the QLACS targets issues pertinent as well to those new to post-treatment and thus may also be appropriate for early-transition cancer survivors. However, the validity of the QLACS for this survivorship period has not been evaluated. The present study was designed to address the gap in measures suitable for early-transition survivors by evaluating some of the psychometric properties of the QLACS in a sample of breast cancer survivors who were 18–24 months post-diagnosis.

Methods

Setting and population

The data reported in these analyses were derived from an observational study conducted among women aged 25 years and older who were newly diagnosed with stage I, II, or III breast cancer. The study was developed to evaluate age differences in adjustment to breast cancer. Study design has been previously described [27–29]. Briefly, eligibility criteria included first time breast cancer diagnosis, cancer stage I–III, completion of baseline survey within 8 months of diagnosis, at least 18 years of age (although no one in the study was younger than age 25), and ability to read and understand English. Recruitment was conducted at Memorial Sloan Kettering Cancer Center and the University of Texas–Southwestern Center for Breast Care from 2002 to 2006. Women were recruited through

hospital clinics and advertisements and initially screened by chart review or telephone for eligibility.

Eligible women were mailed a baseline questionnaire to complete and return to the Coordinating Center at Wake Forest University. Baseline questionnaires were completed within 8 months of diagnosis. Follow-up surveys were sent at 6, 12, and 18 months following completion of the baseline survey. The analyses below focus on responses to the QLACS at the last follow-up survey when respondents were post-primary treatment and between 18 and 24 months post-diagnosis. To evaluate convergent and divergent validity of the QLACS, we selected additional measures to include in analyses because they assessed constructs similar to the various QLACS domains. These other measures were administered at all surveys. All sites obtained approval from their Institutional Review Boards.

Measures

Quality of Life in Adult Cancer Survivors (QLACS)—The QLACS contains 47 items scored on a 1 (*never*)-to-7 (*always*) scale [14]. The 47 items are grouped into 12 domains: seven are referred to as generic and five as cancer specific. Generic domains address issues relevant to cancer survivors, but do not ask specifically about cancer, and can be answered by general population samples: negative feelings, positive feelings, cognitive problems, sexual problems, physical pain, fatigue and social avoidance. A generic summary score (QLACS Generic Summary) is calculated by adding the seven constituent domain scores (reversing the score for positive feelings) so that a lower score (i.e., more frequent reports of “never”) corresponds to higher QoL [14]. Cancer-specific domains relate specifically to having had cancer and include financial problems, family-related distress, distress about recurrence, appearance concerns, and benefits of having cancer. A cancer-specific summary score (QLACS Cancer-Specific Summary) is calculated by adding the constituent domain scores of all but the benefits domain. The benefits domain did not load with the other cancer-specific domains in scale development factor analyses and is reported separately from the Cancer-Specific Summary score [14].

Functional Assessment of Cancer Therapy Breast (FACT-B) was used as a comparison measure because it is one of the most commonly used measures of QoL for cancer survivors during active treatment. Also, it is often used for cancer survivors who have recently completed treatment since there is no measure specifically designed to assess QoL during the transition period of interest [7]. The FACT-B consists of the FACT General (FACT-G) and the Breast-Specific Concerns subscale (BSC). The FACT-G [30] is a cancer-specific QoL measure containing a total of 26 items consisting of four subscales: physical well-being, functional well-being, emotional well-being, and social/family wellbeing. A total FACT-G score is calculated by summing the subscales ($\alpha = 0.91$). The BSC is a separate breast cancer-specific subscale that contains nine items focusing on breast cancer ($\alpha = 0.69$). All items are rated on a 5-point Likert scale and the respondent is asked to refer to the past seven days. Higher scores reflect better QoL.

Medical Outcomes Short-Form Health Survey (SF-36) is a 36-item measure of health status for use in a general population [31]. The SF-36 consists of eight domains and two summary

scores: the Physical Component Summary (PCS) and Mental Component Summary (MCS) score. Higher scores on the SF-36 indicate a better health status.

Global Quality of Life—A 100-mm visual analog scale was used to assess global QoL. The visual analog scale is a validated, single-item measure that asks respondents to rate their overall QoL in the past 2 weeks on a scale of 1–100 where 1 represents the lowest possible QoL and 100 represents the highest QoL. It has shown excellent validity and test–retest reliability [32].

Symptoms—Women completed a 39-symptomlist as used in the Women’s Health Initiative [33] and based on the Breast Cancer Prevention Trial Symptom scale [34] consisting of a wide range of symptoms that can be a result of cancer treatment and aging, including symptoms that are physical (e.g., mouth ulcers, headaches, diarrhea, nausea, joint pains), emotional/psychological (e.g., mood changes, feeling depressed, forgetfulness), menopausal (e.g., hot flashes, vaginal dryness), and related to role difficulties (e.g., lowered work performance, avoidance of social affairs, decreased efficiency). All symptoms were rated on a four-point ordinal scale ranging from none to severe. Symptom scores were summed to provide an overall score with higher scores indicating higher levels of symptoms. In addition, scores for the fatigue and social avoidance items and a composite score of cognitive symptoms (mean of scores for forgetfulness and difficulty concentrating) were used in the analyses.

Self-assessed health—Respondents rated their health on the widely used one-item measure asking about their overall health today on a five-point scale (excellent, very good, good, fair, poor). Self-assessed health has been shown to be highly related to both morbidity and mortality [35].

Psychosocial variables—The *Illness Intrusiveness Ratings Scale* assessed the degree to which breast cancer diagnosis and treatment affected thirteen life areas: health, diet, paid work, active recreation, passive recreation, financial situation, relationship with spouse, sex life, family relations, other social relations, self-expression, religious expression, and community [36]. Total scores can range from 13 to 91 [37], with higher scores indicating more intrusiveness. The internal consistency for the scale in this sample was $\alpha = 0.90$. *Perceived attractiveness* was measured by three items from the Lasry body image scale that assess how a woman perceives her attractiveness [38]. Women were asked to rate their agreement with three statements: feeling attractive to others, attractiveness has changed due to surgery, and fear of being unattractive sexually. Scores can range from 3 to 15, and higher scores indicate greater perceived attractiveness (coefficient alpha in our sample was 0.54). *Post-traumatic Growth*, or positive outcomes from coping with a life challenge, was assessed with the Post-traumatic Growth Inventory developed by Tedeschi and Calhoun [39], with demonstrated validity [40] and high internal consistency in our sample ($\alpha = 0.94$). Higher scores indicate more growth.

Sociodemographic variables—We considered age, race, the ability to pay for basics, education, marital/partner status, and presence of children under age 18 in the home in our analyses.

Cancer-related variables—The following variables were obtained from medical chart review performed at the end of primary treatment: cancer stage at diagnosis (I, II, or III), type of surgery (lumpectomy or mastectomy), radiation therapy (yes/no), chemotherapy (yes/no), hormonal therapy (yes/no), and time since diagnosis.

Analyses—Our analytic sample consisted of women who had scores on all of the QLACS domains at the 18-month follow-up ($n = 552$). Psychometric properties of the QLACS domains were examined in terms of floor and ceiling effects and internal consistency, as measured by Cronbach's alpha, for each domain and summary score. To assess convergent validity of the QLACS, we computed Pearson's correlation coefficients for the associations between QLACS domain and summary scores and other measures of related constructs that were administered at the 18-month follow-up.

We hypothesized that the QLACS Generic Summary score would be highly (i.e., $|r| > 0.50$) negatively correlated with the other general QoL measures (i.e., FACT-G, SF-36, Global QoL), and the QLACS Cancer-Specific Summary would have a stronger correlation with the FACT-BSC than with general QoL measures, as found in previous analyses of long-term cancer survivors [14]. In addition, we expected that both QLACS summary scores (generic and cancer specific) would be positively related to total symptoms, self-assessed health, and illness intrusiveness scores. We also hypothesized that domain-specific QLACS scores would correlate highly with specific similar domains or items of measures of related constructs (e.g., QLACS physical pain domain with the SF-36 bodily pain; QLACS appearance concerns with perceived attractiveness; and QLACS benefits with post-traumatic growth)

To further assess convergent and divergent validity of the QLACS, we computed Pearson's correlation coefficients for the associations between the subscales of the QLACS and the subscales of the FACT-B. We expected that the QLACS subscales would be highly negatively related to corresponding scales on the FACT-B (i.e., QLACS negative feelings with FACT-B emotional; QLACS physical pain and fatigue with FACT-B physical; QLACS sexual problems and social avoidance with FACT-B social; QLACS positive feelings and cognitive problems with FACT-B functional; and QLACS familyrelated distress and appearance concerns with FACT-B BSC) and reflect divergent validity with lower correlations with constructs not assessed by the FACT-B (i.e., financial problems, distress about recurrence, and benefits of having cancer). All analyses were conducted using SAS 9.3.

Results

Sample characteristics

A total of 740 surveys were mailed to women deemed eligible from chart reviews or telephone screening; 653 women completed baseline surveys for a response rate of 88 %. Of these 653 women, 565 remained in the study at the 18-month follow-up (86.5 %). Thirteen of these women did not complete the QLACS for an analytic sample of 552 women.

Table 1 shows baseline characteristics of the sample. The mean age was 55.4 (SD = 12.4), and a majority were married or partnered (73.4 %), and white (91.3 %). Over half of the women (53.1 %) were diagnosed with Stage I disease. Most participants reported previously receiving chemotherapy (67.2 %) and hormonal therapy (74.5 %). The average time since diagnosis at baseline was 4.5 months (SD = 1.3 months; range 3 days to 7.4 months). At the 18-month follow-up, the average length of time since diagnosis was 22.6 months (SD = 1.4 months). All participants had completed primary treatment by the 18-month follow-up.

Characteristics of the QLACS

Table 2 shows the mean scores, minimum and maximum values, floor and ceiling effects and Cronbach's alpha for each domain, and summary score of the QLACS. None of the domains or summary scores showed ceiling effects (i.e., concentration of scores at the maximum). Three domains (physical pain, social avoidance, and financial problems) showed floor effects, with 33.9, 35.9, and 48.9 % of the sample, respectively, reporting the minimum value. Internal consistency was good for the 12 domains (a ranged from 0.79 to 0.91).

Convergent and divergent validity

Table 3 shows results of the convergent validity analyses (all correlations were significant at $p < .001$). As hypothesized, the QLACS Generic Summary score was highly correlated in a negative direction with assessments of general QoL such as the FACT-G ($r = -0.84$), the SF-36 MCS ($r = -0.74$), and global QoL ($r = -0.67$). We also found a high correlation with the total symptom score ($r = 0.76$) and illness intrusiveness ($r = 0.64$). The QLACS Generic Summary score was somewhat less correlated with the SF-36 PCS ($r = -0.40$) and self-assessed health ($r = 0.49$). Further, as hypothesized, the QLACS Cancer-Specific Summary score was more strongly correlated with the FACT-BSC ($r = -0.73$) than with the general QoL measures (e.g., SF-36), and this correlation was stronger than the QLACS Generic Summary and the FACT-BSC.

All of the Generic QLACS domain scores were correlated highly with their similar measures. For instance, the QLACS fatigue score correlated with the SF-36 vitality score ($r = -0.82$), and both the QLACS positive feelings and negative feelings domains were correlated highly with the SF-36 mental health domain score ($r = 0.77$ and -0.74 , respectively). The QLACS cancer-specific domains of appearance problems and benefits were also correlated with related measures of perceived attractiveness and post-traumatic growth (-0.61 and 0.67 , respectively). Table 4 shows the correlations between QLACS domains and the subscales of the FACT-B. All correlations in this table, with three subscribed exceptions, were significant at $p < .001$.

A majority of the QLACS domains showed higher convergent validity with FACT subscales that assessed related constructs (e.g., QLACS negative feelings and FACT-B emotional well-being) and divergent validity with those FACT subscales that assessed unrelated constructs (e.g., QLACS pain and FACT-B social well-being). In addition, two QLACS domains that demonstrated somewhat divergent validity with all subscales of the FACT-B included financial problems (all $r's < 0.31$) and benefits of having cancer (all $r's < 0.22$).

Discussion

The current study reports some psychometric properties of the QLACS for QoL assessment in breast cancer survivors who are 18–24 months post-diagnosis. Specifically, the QLACS demonstrated adequate internal consistency and good convergent and divergent validity in this sample. The QLACS appears to capture QoL as similarly as other widely accepted QoL measures, while also allowing for an expanded measurement of issues relevant to post-treatment cancer survivors, such as financial issues and concerns about recurrence. Thus, the QLACS is a promising answer to the call for QoL measures for cancer survivors transitioning off active treatment [5].

Results further supported the hypothesis that the QLACS Generic Summary score would exhibit stronger convergent validity with measures designed to assess general QoL and that the QLACS Cancer-Specific Summary would have a stronger correlation with the FACT-BSC. The weakest correlation was between the SF-36 PCS and the QLACS Generic Summary score (−0.40), which is not surprising because the SF-36 PCS emphasizes physical function, a construct that is not a part of the QLACS. Results also showed that the QLACS domain-specific scores exhibited convergent validity with other measures designed to assess similar constructs.

In addition, the QLACS primarily demonstrated convergent and divergent validity with the FACT-B as hypothesized, with two QLACS subscales illustrating that they assessed more divergent constructs (financial problems, benefits of having cancer). However, the QLACS subscale of distress about recurrence was moderately correlated with the FACT-B BSC, although this was not hypothesized. Thus, the QLACS assesses QoL similar to the FACT-B with the added benefit that the QLACS allows measurement of specific, concrete issues relevant to many cancer survivors not assessed by the FACT. For example, although many of the QLACS cancer-specific domains are correlated with the FACT-BSC, the FACT-BSC is a more global assessment. The QLACS allows one to specifically assess differences in adjustment to issues such as distress about recurrence or appearance concerns.

Limitations and future directions

One limitation of this study is the sociodemographic homogeneity of the sample. Further, because these analyses were conducted on study data not specifically designed to assess psychometric properties of the QLACS (hence, they are secondary analyses), the psychometric properties presented are not exhaustive and should continue to be evaluated. However, these limitations are accompanied by the strengths of the strong response and retention rates. Future research may further explore variability in how women adjust to breast cancer by QLACS domain. This research would lead to a more detailed understanding of quality of life and could inform targeting of interventions.

Conclusion

In summary, the QLACS is a reliable and valid assessment of general QoL and cancer-specific domains in early-transition breast cancer survivors. The QLACS appears to capture QoL similar to widely accepted QoL measures (e.g., FACT-B), while also allowing for a

more specific measurement of issues relevant to post-treatment cancer survivors. Thus, these data in addition to previous data supporting use of the QLACS across different cancer sites [14] suggest that the QLACS is a promising comprehensive measure of QoL for early post-treatment breast cancer survivors. The QLACS could be particularly useful for longitudinal studies that begin assessment of cancer survivors during this transition period and continue through longer-term survivorship.

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Table 1Baseline characteristics of the total sample ($n = 552$)

Characteristic	Total sample	
	<i>N</i>	(%)
Age in years (M [SD])	552	55.4 (12.4)
Race: white	504	(91.3)
<i>Ability to pay for basics</i>		
Very hard	15	(2.7)
Somewhat hard	77	(14.0)
Not hard	460	(83.3)
Graduated college	351	(63.6)
Married or partnered	405	(73.4)
Have children under 18 years living at home	134	(24.3)
<i>Stage</i>		
I	293	(53.1)
II	213	(38.6)
III	46	(8.3)
<i>Surgery</i>		
Lumpectomy only	349	(63.2)
Mastectomy	203	(36.8)
Chemotherapy—yes	371	(67.2)
Radiation—yes	401	(72.6)
Hormonal therapy—yes	411	(74.5)
Months since diagnosis (M [SD])	552	4.5 (1.3)

Table 2
 Characteristics of the Quality of Life in Adult Cancer Survivors summary scores and domains

Subscale	N	Mean	SD	Min	% Floor	Max	% Ceiling	Cronbach's alpha
<i>Generic domains</i>								
Physical pain	552	6.00	3.69	3	33.90	22	0.36	0.81
Negative feelings	552	10.33	4.36	4	3.26	26	0.36	0.81
Positive feelings	552	18.53	3.83	5	0.36	24	4.89	0.79
Cognitive problems	552	9.51	4.19	4	12.50	25	0.18	0.87
Sexual problems	550	9.79	5.06	1	0.18	26	0.36	0.85
Social avoidance	552	7.61	4.66	4	35.87	28	0.18	0.89
Fatigue	552	11.76	5.15	4	5.25	28	0.18	0.91
Summary score	552	68.50	22.66	31	0.18	143	0.36	
<i>Cancer-specific domains</i>								
Financial problems	552	7.13	5.06	4	48.91	28	0.91	0.86
Distress family	552	11.21	6.60	4	17.75	28	3.44	0.91
Distress recurrence	552	11.42	5.48	4	5.43	28	1.81	0.87
Appearance problems	552	7.97	4.58	3	0.36	26	0.36	0.79
Summary score ^a	552	37.73	15.64	16	1.63	99	0.18	
Benefits	552	16.29	6.54	4	4.71	28	3.44	0.88

SD standard deviation, *Min* minimum value, *Max* maximum value

^a Benefits not included in summary score

Table 3

Correlations of the Quality of Life in Adult Cancer Survivors (QLACS) domains with concurrent validity measures at 18-month follow-up

Subscale	Related measure	<i>r</i>
Generic summary	FACT-G	−0.84
	FACT-BSC	−0.61
	SF-36 MCS	−0.74
	SF-36 PCS	−0.40
	Total symptom score	0.76
	Global quality of life	−0.67
	Illness Intrusiveness	0.64
	Self-assessed health	0.49
Cancer-specific summary	FACT-BSC	−0.73
	FACT-G	−0.47
	SF-36 MCS	−0.35
	SF-36 PCS	−0.29
	Total symptom score	0.51
	Global quality of life	−0.36
	Illness intrusiveness	0.55
	Self-assessed health	0.47
<i>Generic domains</i>		
Fatigue	SF-36 vitality	−0.82
Fatigue	Fatigue symptom	0.71
Positive feelings	SF-36 mental health	0.77
Negative feelings	SF-36 mental health	−0.74
Physical pain	SF-36 bodily pain	−0.71
Cognitive problems	Cognitive symptoms	0.81
Sexual problems	Sex life item from the IIRS	0.67
Social avoidance	SF-36 social role functioning	−0.60
Social avoidance	Social avoidance symptom	0.69
<i>Cancer domain</i>		
Appearance problems	Perceived attractiveness	−0.61
Benefits	Post-traumatic growth	0.67

Functional Assessment of Cancer Therapy general and breast cancer-specific concerns subscale (FACT-G, FACT-BSC) Medical outcomes short-form Health Survey (SF-36): Mental Component Summary Score (MCS), Physical Component Summary Score (PCS); Illness Intrusiveness Ratings Scale (IIRS)

All correlations were significant at $p < 0.001$.

Correlations of the Quality of Life in Adult Cancer Survivors (QLACS) domains with the Functional Assessment of Cancer Therapy-Breast subscales

Table 4

QLACS domains												
	Negative feelings	Positive feelings	Cognitive problems	Pain	Sexual problems	Social avoidance	Fatigue	Financial problems	Distress family	Distress recurrence	Appearance concerns	Benefits
FACT-B subscales												
Physical	-0.49	0.47	-0.44	-0.69	-0.32	-0.42	-0.69	-0.27	-0.24	-0.35	-0.36	0.08 ^a
Social	-0.47	0.54	-0.41	-0.24	-0.42	-0.44	-0.38	-0.12 ^{**}	-0.06 ^a	-0.28	-0.33	0.15
Emotional	-0.69	0.61	-0.43	-0.41	-0.30	-0.44	-0.50	-0.22	-0.27	-0.56	-0.40	0.19
Functional	-0.65	0.73	-0.54	-0.54	-0.37	-0.56	-0.67	-0.21	-0.20	-0.38	-0.36	0.22
BSC	-0.53	0.44	-0.46	-0.42	-0.37	-0.47	-0.46	-0.30	-0.56	-0.56	-0.65	-0.03 ^a

BSC Breast-Specific Concerns

All correlations were significant at $p < .001$ unless otherwise indicated

^aIndicates nonsignificant values;

**
 $p < .01$