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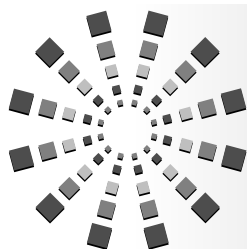
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What Matters Most? Predictors of Quality of Life and Life Satisfaction Among Young Breast Cancer Survivors

KEY WORDS

Adjustment
Breast cancer
Quality of life
Satisfaction with life
Young survivors
Young women

Background: Younger breast cancer survivors face unique challenges, and research is needed to better understand how to optimize their quality of life (QoL) and satisfaction with life (SwL). **Objective:** The aim of this study was to examine a biopsychosocial model of QoL and SwL in young breast cancer survivors. Biological, psychological, and social/practical factors were hypothesized to be associated with both distressing and adaptive reactions during survivorship, which in turn were hypothesized to be associated with QoL and SwL. **Methods:** Young (age = 19-45 years at diagnosis) breast cancer survivors (N = 284) completed an online survey assessing demographic and biopsychosocial factors, QoL, and SwL. Latent variables were created for adaptive and distressing reactions, and structural equation modeling was used to test the hypothesized relationships. **Results:** The model fit the data ($\chi^2(100) = 332.92, P < .001$, comparative fit index = 0.86, root mean square error of approximation = 0.09, standardized root mean square residual = 0.05) and accounted for large proportions of variance in QoL ($R^2 = 0.86$) and SwL ($R^2 = 0.62$). Social support, parenting concerns, and fertility concerns each significantly predicted adjustment. Adaptive reactions positively predicted SwL ($\beta = 0.58, P < .001$) but not QoL. Distressing reactions negatively predicted SwL ($\beta = -0.26, P < .01$) and QoL ($\beta = -0.87, P < .001$). **Conclusions:** Adjustment in survivorship mediated the association of social support, parenting concerns, and fertility concerns on QoL and SwL in young breast cancer survivors. **Implications for Practice:** To support the psychological adjustment of young breast cancer survivors, attention should be given to survivors' social context including survivors' available social support and their concerns about fertility and parenting.

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Breast cancer is the most common cancer in women younger than 50 years.¹ It was estimated that 276 480 women were given a diagnosis of invasive breast cancer in the United States in 2020,¹ with approximately 11% of those women younger than 45 years.² Breast cancers in younger women tend to be fast growing, of a higher grade, and hormone receptor–negative, thus requiring more aggressive treatments (eg, chemotherapy)³ with greater adverse effects (eg, “chemo brain”). Younger women are also more likely to possess a *BRCA* mutation, which often leads to additional concerns about the increased risk of cancer in family members.⁴ A cancer diagnosis may impact younger women's stage of life goals (eg, forming a family, establishing a career), resulting in unique concerns (ie, fertility, early menopause, body image, child rearing, financial stability). Consequently, younger breast cancer survivors report greater depressive symptoms, distress, anxiety, and fear of recurrence and decreased quality of life (QoL) compared with older survivors (aged >50 years).^{5–7} Recognizing that younger breast cancer survivors have specific physical, emotional, and social/family challenges, which may be complex and multifactorial, it is necessary to develop comprehensive interventions designed to optimize QoL and satisfaction with life (SwL).

Adjustment to chronic illness is an ongoing process that consists of positive (adaptive) and negative (distressing) reactions.⁸ Positive psychosocial adjustment in the context of breast cancer may be signified by positive mood, hope, meaning making, benefit finding, deepened relationships, and spiritual or religious engagement. Negative adjustment may be characterized by symptoms of anxiety and depression, and heightened cancer-specific distress.⁹ In the last decade, research has examined distinct trajectories of psychological adjustment in women recently given a diagnosis of breast cancer and found substantial heterogeneity in adjustment from diagnosis to recovery.^{9,10} A large proportion of breast cancer survivors experience positive adjustment either from the time of diagnosis or after a period of recovery.⁹ Many women are able to find benefits (eg, enhanced feelings of self-worth or mastery, greater appreciation for life) from their cancer experience, and younger women are particularly likely to report these positive changes.¹¹ Furthermore, young breast cancer survivors who are mothers have also reported positive effects of parenthood (eg, finding meaning, social support),^{12,13} which may relate to lower levels of distress.¹⁴ Still, approximately 15% of survivors are at risk for relatively poor psychosocial adjustment from diagnosis into survivorship.⁹ Predictors of negative adjustment in the context of breast cancer include mental health comorbidities such as clinical depression,⁵ hopelessness,¹⁵ symptom burden post treatment,¹⁶ and socioeconomic factors (ie, low income, underinsured or uninsured).^{17,18}

Understanding survivors' psychosocial adjustment after cancer provides key insight into their QoL. Younger breast cancer survivors experience worse physical (ie, pain, vasomotor symptoms, fatigue, and sleep disturbance), mental (ie, particularly in the psychosocial and emotional domains), and global QoL than older survivors.^{5,19–21} Furthermore, decreased QoL due to pain, physical roles, social functioning, and mental health has been shown to persist for up to 4 years post diagnosis in breast cancer survivors 40 years and younger.²² Unlike measures of QoL, SwL is a subjective evaluation of general well-being unrelated to

specific domains.²³ Research has shown that breast cancer survivors have lower life satisfaction than the general population²³; however, to the best of our knowledge, no studies have used the Satisfaction with Life Scale in young breast cancer survivors.

Few studies have reported which of the aforementioned concerns “matter most” regarding young breast cancer survivors' QoL and SwL. Using a biopsychosocial framework,²⁴ this research examined the direct effects of important biological, psychological, and social variables on young breast cancer survivors' adjustment to survivorship and their indirect effects on QoL and SwL. The biopsychosocial variables included were chosen based on the current literature and the authors' clinical experiences with this population. We defined “young” survivors as women who were given a diagnosis between the ages of 19 and 45 years to represent women who are no longer adolescents and are likely premenopausal,²⁵ and our sample included only women who had completed primary treatment. We hypothesized that adaptive and distressing reactions would mediate the influence of biopsychosocial factors on QoL and SwL. In this way, the current study was designed to identify predictors of QoL and SwL in young breast cancer survivors.

■ Methods

Sample Recruitment

Participants (N = 284) were recruited from multiple cancer centers in the United States, as well as online support groups, email blasts, listservs, message boards, and social media sites. Inclusion criteria were female, nonrecurrent breast cancer, age of 19 to 45 years and premenopausal at diagnosis, posttreatment (with the exception of hormone or antibody therapies), English speaking, and access to the Internet. Interested women completed a Qualtrics survey that assessed eligibility, explained the study's purpose and lack of financial compensation, provided comprehension questions to ensure understanding, and obtained consent before study measures were assessed. All procedures were approved by the Colorado Multiple Institutional Review Board (Protocol #12-1565).

Recruitment took place in 2 phases, with the first phase between June 2013 and November 2013 (n = 153) and the second phase between January 2015 and April 2015 (n = 131). The first phase included qualitative questions to assess whether there were important psychosocial variables related to QoL and life satisfaction that were not included in the original model. On the basis of qualitative feedback from participants that cognitive changes such as “chemo brain” should be included, the second survey included all of the same questions plus a measure of perceived cognitive functioning. The sample that was analyzed included 284 participants, 37 of whom provided partial responses. Facebook was the primary method of recruitment (60.9%), as well as online support groups (15.5%). Young Survival Coalition, a national nonprofit organization specifically focused on young women's breast cancer, was the primary organization involved in recruitment; 39% of participants reported that they learned about the survey through Young Survival Coalition.

Measures

DEMOGRAPHICS

Participants self-reported demographic variables including age, marital status, income, number of children, state of residency, level of education, and employment status.

BIOLOGICAL CONCERNS

BRCA, Stage, Menopause, and Time Since Treatment. Participants self-reported whether they were carriers of *BRCA1* and/or *BRCA2* mutations, their stage of breast cancer (0/DCIS to IV), whether they began menopause as a result of treatment (yes/no), and time since treatment, with the exception of hormone and endocrine therapies.

Comorbidities. The Charlson Comorbidity Index was used to assess for medical comorbidities, and it has been validated in breast cancer patients.²⁶ The Charlson Comorbidity Index provides a score using weights based on severity and risk of mortality based on 19 preexisting medical conditions.

PSYCHOLOGICAL CONCERNS

Psychological Diagnoses. Participants indicated whether they had a history of depression, anxiety, eating disorders, bipolar disorder, schizophrenia, panic disorder, obsessive-compulsive disorder, or any other psychological disorder.

Cognitive Symptoms. To assess subjective cognitive functioning, participants in phase 2 of recruitment ($n = 112$) completed the first 3 subscales (30 items) of the Functional Assessment of Cancer Therapy-Cognitive Function Version 3²⁷ ($\alpha = .90$).

SOCIAL AND PRACTICAL CONCERNS

Fertility. Concerns about fertility were measured by the 14-item Reproductive Concerns Scale²⁸ ($\alpha = .90$), which is designed specifically for young cancer survivors.

Social Support. Participants reported on 3 domains (ie, friends, family, significant other) of perceived social support using the 12-item Multidimensional Scale of Perceived Social Support²⁹ ($\alpha = .95$).

Parenting. Participants who had dependent children (younger than 18 years) at the time of diagnosis ($n = 145$, 51%) answered the Parenting Concerns Questionnaire³⁰ ($\alpha = .92$), a 15-item measure of distress specifically related to parenting during cancer. Specifically, participants indicated their practical and emotional concerns regarding their children, the impact of an illness on their child(ren), and, if they co-parent, the co-parent's ability to care for the child(ren).

Finances. Participants completed the Financial Problems subscale of the Quality of Life in Adult Cancer Survivors instrument³¹ ($\alpha = .89$), which consists of 4 items measuring cancer-specific financial concerns.

ADAPTIVE REACTIONS

Benefit Finding. Participants completed the 15-item Benefit Finding Scale³² ($\alpha = .86$), which assessed diverse potential benefits (ie, family and social relationships, life priorities, spirituality, career goals, self-control, acceptance) that result from the otherwise distressing nature of cancer.

Hope. Participants also completed the 11-item Adult Hope Scale³³ ($\alpha = .88$), which assesses perceived capability to reach one's goals.

Positive Impact of Children. The Positive Impact of Children Scale was developed for the current study to measure the positive effects of dependent children during cancer. The scale items were written based on themes within the qualitative literature about motherhood during breast cancer. The Positive Impact of Children Scale contains 5 items including "my children gave me a reason to fight the cancer" and "having children helped me focus on the positive." The scale had good internal consistency ($\alpha = .83$) among participants who had dependent children at the time of diagnosis.

DISTRESSING REACTIONS

Anxiety and Depression. The 2 subscales of the 14-item Hospital Anxiety and Depression Scale³⁴ (anxiety, $\alpha = .90$; depression, $\alpha = .86$) were used to assess anxiety and depression symptoms during the past week.

Distress. The 22-item Impact of Events Scale Revised³⁵ ($\alpha = .94$) measured distress associated with participants' cancer diagnosis.

Fear of Recurrence. Participants also completed the first 4 items of the Concerns about Recurrence Scale³⁶ ($\alpha = .94$) to assess the frequency, potential for upset, consistency, and intensity of fears about cancer recurrence.

QUALITY OF LIFE AND SWL

Quality of Life. Quality of life was assessed using the 37-item Functional Assessment of Cancer Therapy for Breast Cancer³⁷ ($\alpha = .94$). There are 5 subscales, which are added together to create a global measure of health-related QoL. These subscales measure 16 more discrete parts of QoL, including physical well-being, social/family well-being, functional well-being, and additional concerns.

Satisfaction With Life. Participants reported perceived life satisfaction on the 5-item Satisfaction with Life Scale²³ ($\alpha = .92$), which has been found to correlate highly with other measures of subjective well-being.

Data Analysis

Descriptive statistics were run using SPSS software to examine distributions of study variables. Correlations among predictors and between predictors and outcomes were examined. Once statistical assumptions necessary for structural equation modeling were considered, a confirmatory factor analysis was run using Mplus 8 to determine the fit of the data with the hypothesized latent variables. All models used full information maximum likelihood to handle missing data. Upon confirming that the 2 hypothesized latent variables fit the data well, the entire hypothesized structural model was estimated.

■ Results

Sample Description

In our sample of nonrecurrent young breast cancer survivors, mean age was 40 years. Most participants were White (88.7%),

partnered (73.6%), working full- or part-time (79.9%), and college educated (73.6%). Participants were from 39 different states, with the largest proportions being from Colorado (14.4%) and California (9.2%). The vast majority of participants were diagnosed with nonmetastatic disease (94.7%), which is to be expected because women who were in active treatment were not eligible to participate. Participants were several years from diagnosis (mean, 5.4 years), and 58.9% completed treatment within the past 3 years. Many treatment combinations were reported including chemotherapy (80.3%), mastectomy (76.1%), and radiation (55.6%). Only 3.85% of women were still undergoing hormone and/or antibody therapy. Demographic and medical characteristics of participants are presented in Table 1.

Measurement Models


First, a confirmatory factor analysis tested the measurement of the 2 latent variables: distressing reactions and adaptive reactions. Hope, benefit finding, and positive impact of children were indicators of adaptive reactions. All factor loadings were significant

($P < .001$). Hope had the strongest standardized loading ($\beta_{\text{Hope}} = 0.72$, $\beta_{\text{Benefit finding}} = 0.59$, $\beta_{\text{PositiveImpactofChildren}} = 0.35$). Overall model fit indices were not produced as the model was just-identified.

The “distressing reactions” measurement model fit the data well: $\chi^2(2) = 25.70$, $P < .001$, comparative fit index = 0.94, and standardized root mean square residual = 0.047. Anxiety, traumatic distress, depression, and fear of recurrence were indicators of distressing reactions. All path estimates were significant at $P < .001$. Standardized factor loadings for the indicators of distressing reactions were as follows: $\beta_{\text{Anxiety}} = 0.93$, $\beta_{\text{TraumaticDistress}} = 0.79$, $\beta_{\text{Depression}} = 0.68$, and $\beta_{\text{FearofRecurrence}} = 0.62$.

Correlations

Correlations between latent variables and the measured predictors in the model with QoL and life satisfaction were examined and can be found in Table 2. Nearly all model constructs significantly correlated with QoL and SwL and were in the hypothesized direction.

<div>  Table 1 • Demographic and Medical Characteristics of Participants (N = 284) </div>			
Variable	Total	Variable	Total
Race/ethnicity	n (%)	Time since treatment	n (%)
White	252 (88.7)	≤6 mo	41 (15.8)
Hispanic	14 (4.9)	7–11 mo	26 (8.6)
Asian/Pacific Island	6 (2.1)	12–23 mo	50 (17.6)
Black	5 (1.8)	2 y	29 (10.2)
Other	7 (2.5)	3 y	19 (6.7)
		4 y	28 (9.9)
		≥5 y	68 (23.9)
Age, years	Mean (SD)		Mean (SD)
Time of survey	40.0 (6.7)	Time since diagnosis, years	5.4 (4.6)
Time of diagnosis	35.5 (5.3)		
Relationship status	n (%)	Current treatment	n (%)
Partnered	209 (73.6)	None	273 (96.1)
Single	75 (26.4)	Antibody therapy	6 (2.1)
		Hormone therapy	4 (1.4)
		Antibody and hormone	1 (.35)
Education	n (%)	Menopause onset ^a	n (%)
College degree	209 (73.6)	Due to treatment	70 (24.6)
No college degree	75 (26.4)	Not due to treatment	60 (21.1)
Employment status	n (%)	BRCA	n (%)
Employed full-time	183 (64.4)	No mutation	197 (69.4)
Employed part-time	44 (15.5)	Unsure	34 (12)
Unemployed	38 (13.3)	BRCA1 mutation	20 (7.0)
Unable to work	19 (6.7)	BRCA2 mutation	20 (7.0)
Stage	n (%)	Past treatment ^b	n (%)
0/DCIS	19 (6.7)	Mastectomy	216 (76.1)
I	64 (22.5)	Chemotherapy	223 (80.3)
II	135 (47.5)	Lumpectomy	97 (34.2)
III	51 (18)	Radiation	158 (55.6)
IV	9 (3.2)	Antibody therapy	57 (20.1)
Unsure	6 (2.1)	Hormone therapy	112 (39.4)
		Reconstruction	196 (69.0)
		Prophylactic surgery	66 (22.2)

^aThe question to assess menopause onset as a result of cancer treatment was only shown to a subset of the sample (n = 130).

^bParticipants selected all treatments they had received; these totals will not equal 100%.

Table 2 • Bivariate Correlations Between Modeled Variables and Outcomes of Quality of Life and Life Satisfaction

Variable	Quality of Life	Life Satisfaction
Quality of life		0.70 ^a
Life satisfaction	0.70 ^a	
Adaptive reactions		
Hope	0.63 ^a	0.66 ^a
Benefit finding	0.40 ^a	0.47 ^a
Positive impact of children	0.18 ^b	0.25 ^a
Distressing reactions		
Depression	-0.81 ^a	-0.64 ^a
Anxiety	-0.71 ^a	-0.50 ^a
Fear of recurrence	-0.49 ^a	-0.24 ^a
Traumatic distress	-0.65 ^a	-0.42 ^a
Financial concerns	-0.49 ^a	-0.38 ^a
Social support	0.46 ^a	0.37 ^a
Parenting concerns	-0.71 ^a	-0.64 ^a
Fertility	-0.29 ^a	-0.34 ^a
Psychological diagnoses	-0.34 ^a	-0.28 ^a
Cognitive decline	-0.64 ^a	-0.32 ^a
Stage	-0.17 ^a	-0.18 ^a
Charlson comorbidity index	-0.22 ^a	-0.19 ^a
Time since diagnosis	0.22 ^a	0.11
BRCA positive	0.07	0.06

^a $P < .01$.

^b $P < .05$.

Structural Equation Model

The hypothesized structural model is illustrated in the Figure. The model incorporates each of the aforementioned biopsychosocial factors that were hypothesized to impact the 2 adjustment constructs, which in turn were expected to predict QoL and SwL. The biopsychosocial factors were individually measured variables; they are grouped together in the Figure for ease of understanding the model. Circles indicate latent (ie, unmeasured) variables. The absence of a connecting line between 2 variables implies that there is no direct effect hypothesized between those 2 variables. All exogenous variables in the model were allowed to correlate with one another. The model fit the observed data adequately: $\chi^2(100) = 332.92$, $P < .001$, comparative fit index = 0.86, root mean square error of approximation = 0.09, and standardized root mean square residual = 0.05. The final model accounted for 86% and 62% of the variance in QoL and SwL, respectively. The Figure shows standardized estimates.

Three of the 4 social factors significantly predicted both adaptive and distressing reactions. Higher levels of social support ($\beta = 0.30$, $P < .0001$), fewer parenting concerns ($\beta = -0.36$, $P < .01$), and fewer concerns about fertility ($\beta = -0.19$, $P < .01$) all significantly predicted more adaptive reactions. These same 3 variables significantly predicted distressing reactions: lower levels of social support ($\beta = -0.25$, $P < .0001$), more concerns about parenting ($\beta = 0.58$, $P < .0001$), and more concerns about fertility ($\beta = 0.17$, $P < .01$). The other social factors did not significantly predict either latent variable. Adaptive and distressing reactions were significantly negatively associated with one another

($\beta = -0.67$, $P < .0001$). None of the biological or psychological factors was a significant predictor of either adaptive reactions or distressing reactions. That is, having a *BRCA* mutation, later stage of cancer, onset of menopause due to treatment, greater medical comorbidity, and length of time since completing treatment were not significant predictors of the latent variables, nor were greater cognitive decline or psychological diagnoses.

Adaptive reactions were positively associated with SwL ($\beta = 0.58$, $P < .0001$), but it was not significantly related to health-related QoL when considered as a predictor with distressing reactions in the model. Distressing reactions were negatively related to both SwL ($\beta = -0.26$, $P = .01$) and health-related QoL ($\beta = -0.87$, $P < .001$). The 2 outcomes of QoL and SwL were significantly associated with one another, even after controlling for the variance accounted for by their shared predictors in the model ($\beta = 0.19$, $P < .05$).

Discussion

This study tested a model of psychosocial adjustment among young breast cancer survivors to understand which biopsychosocial factors predict adjustment and, in turn, have the greatest influence on QoL and SwL. Of the biological, psychological, and social/practical predictors examined (see Figure), only social support, parenting, and fertility concerns were significantly related to adjustment. Although the findings that social support, parenting, and fertility concerns have a significant influence on adjustment are consistent with previous research,^{5,12,13,28} it is notable that nonmodifiable biological variables, such as presence of *BRCA* mutation and stage of cancer, may be less impactful to young survivors than possibly expected. It may seem that more aggressive cancers would largely impact psychological adjustment, but our findings suggest that adjustment is more influenced by social rather than biological variables. This may be due, in part, to the sample being several years post diagnosis and treatment. Thus, social factors may be more salient than biological factors to young survivors after treatment is complete.

Similarly, the finding that a previous psychiatric diagnosis does not necessarily impact adjustment is notable and may be explained by several factors. Participants may have received psychiatric treatment, which may serve as a protective factor. A small number of patients endorsed a previous psychiatric diagnosis, limiting power to test this association. Participants may have been unaware of previous psychiatric diagnoses, leading to a false-negative response. Alternatively, adjustment for young survivors may, in part, be independent of previous mental health diagnoses. Therefore, in considering the biopsychosocial concerns of young survivors, healthcare providers should discuss survivors' social relationships and influences. Specifically, survivors may benefit from greater consultation regarding social support, fertility preservation (among those who wish to consider having children), and parenting concerns. Previous work²⁸ has emphasized that young survivors want greater information, support, and coordination of care when navigating the complex issues surrounding their reproductive health and parenthood. Beyond the social factors examined in this research, clinicians should also consider additional social concerns and role negotiations.

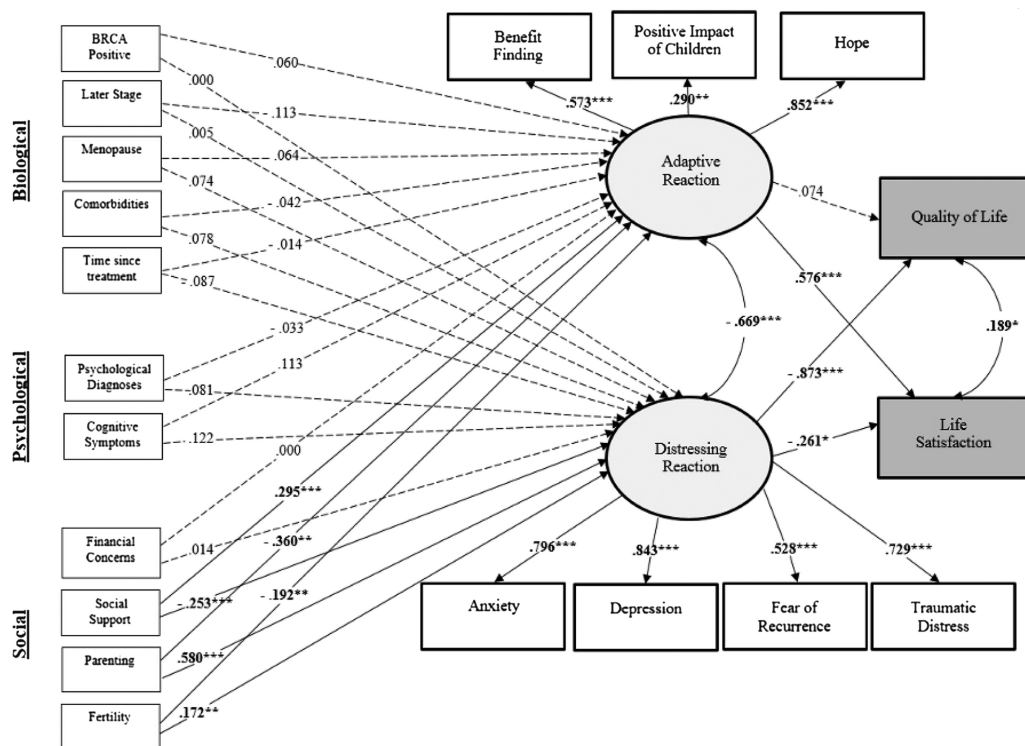


Figure 1 Results for hypothesized structural equation model of psychosocial adjustment among young breast cancer survivors, both significant and nonsignificant path estimates included (significant paths in bold). * $P < .05$, ** $P < .01$, *** $P < .001$.

In addition to examining predictors of adjustment, we hypothesized that the latent variables of adaptive and distressing reactions would mediate the influence of biopsychosocial factors on QoL and SwL. Our hypothesis was partially supported by the data. Distressing reactions (measured by depression, anxiety, fear of recurrence, and traumatic distress) were strongly associated with reduced QoL and SwL, and depression accounted for the majority of the variance. Compared with other samples of young breast cancer survivors, our sample had relatively lower QoL scores, which may be a result of response bias in our recruitment strategy.³⁸ Distressing reactions were more strongly associated with reduced QoL compared with SwL, which may be due to the fact that QoL measures emotional distress whereas SwL does not. Furthermore, as QoL and SwL are unique constructs, an individual may be overall satisfied with his/her life although specific domains of QoL (eg, physical QoL) may be negatively impacted by cancer survivorship. Unlike distressing reactions, adaptive reactions (measured by hope, benefit finding, and positive impact of children) were only associated with higher levels of SwL. Adaptive reactions most strongly loaded on hope; current findings are in line with previous research³⁹ that found maintaining a hopeful outlook regarding meeting one's goals and aspirations is especially salient for young women who may be in the early stages of meeting their life goals. It is perhaps surprising that adaptive reactions were not a significant predictor of QoL. However, it is important to recognize that all 3 indicators of adaptive reactions, particularly hope, were positively correlated with QoL. In the tested model, distressing reactions were an extremely strong predictor of QoL; thus, when controlling for the effect of distressing reactions, there was little residual variance in QoL

to predict. It is of note that the positive impact of dependent children was not significantly associated with parenting concerns, suggesting that having concerns about one's children and finding meaning from parenting throughout one's cancer experience may be mutually exclusive. Finally, distressing and adaptive reactions mediated the associations of social support, parenting concerns, and fertility concerns with QoL and SwL, underscoring the importance of examining complex relationships between these psychosocial factors and variables such as fear of recurrence, depression, and anxiety.

Study Limitations

Participants self-selected to participate, and most survivors were recruited from online support groups and advocacy websites. Thus, our final sample reflects women who were motivated to share their experiences and may be systematically different from those who were uninterested in participation or were not involved in the recruitment organizations. Participants were almost entirely White and of relatively high socioeconomic status, and therefore, the results may not generalize to breast cancer survivors of ethnic minority backgrounds or those of a lower socioeconomic status. Previous research has demonstrated racial and socioeconomic disparities in breast cancer treatment and mortality rates, which may negatively impact QoL in some minority groups.^{40,41} Furthermore, few women had a *BRCA* mutation, a late-stage disease, or medical comorbidities, which may have led to insufficient power to detect significant effects between biological factors and adjustment. Similarly, few women had previous mental health diagnoses, and measures of cognitive concerns were only completed

by half of the sample ($n = 112$) because of it being added midway through the study recruitment. Furthermore, biological and psychological data were collected retrospectively by self-report; thus, survivors may have forgotten information or underreported (ie, desirability bias) psychological concerns. Because most survivors were within 5 years of treatment completion, the results may not generalize to women undergoing active treatment or in long-term survivorship. Finally, we used a cross-sectional design with data collected in 2013 and 2015, and thus, results may not generalize to the modern day. Specifically, advances in comprehensive breast cancer treatment programs addressing survivorship and overall QoL may result in different outcomes. Future research should use a longitudinal design to understand how these concerns impact adjustment throughout survivorship.

Clinical Implications

Despite the aforementioned limitations, this research is novel in several ways. To the best of our knowledge, no other study has examined young breast cancer survivors' SwL. Thus, the relationships between adaptive and distressing reactions and QoL with SwL are new to the psycho-oncology literature. Furthermore, few studies have examined parenting concerns and the impact of dependent children on young breast cancer survivors' adjustment. Our findings warrant future research on the experience of being both a mother and a survivor. Additional strengths of this work include the broad assessment of biopsychosocial functioning and the support for adjustment being a mediator of the impact of functioning on QoL and SwL. Our various recruitment methods allowed us to gather data from women with diverse treatment experiences. Finally, breast cancer research has historically focused on older women (>50 years old), and this work prioritized the unique needs of younger survivors.

In conclusion, this research used a biopsychosocial model of adjustment to examine young breast cancer survivors' QoL and SwL. Considering "what matters most" for young breast cancer survivors' adjustment, clinicians should focus on survivors' social context and inquire about survivors' social support, and their concerns about fertility and parenting. Furthermore, psychiatric treatment specifically targeting hope, including agency and confidence in one's ability to meet their life goals, and hope regarding recovery, may improve SwL. Future research should further explore these findings in more diverse samples and at various time points throughout survivorship. In addition, a greater mechanistic understanding of how survivors' social concerns influence adjustment is warranted. Young breast cancer survivors are a growing population with unique needs. As such, efforts to promote QoL and SwL in this population are critical.

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