

Symptoms, Symptom Beliefs, and Quality of Life of Older Breast Cancer Survivors: A Comparative Study

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Purpose/Objectives: To compare symptoms, symptom beliefs, and quality of life (QOL) of older breast cancer survivors to those of older women without breast cancer.

Design: Descriptive, correlational study.

Setting: Urban and rural communities in the Midwest United States.

Sample: 18 breast cancer survivors and 24 women without breast cancer, older than age 64 (\bar{X} age = 76 years).

Methods: In-home interviews using structured instruments.

Main Research Variables: Symptom distress (number of and distress from symptoms), symptom beliefs, chronic health problems, and QOL.

Findings: No group differences existed in demographic characteristics, symptom number, symptom bother, chronic health conditions, or QOL. Women in both groups most often attributed the cause of their symptoms to aging, chronic illness, or unknown, but rarely to breast cancer. Attributing symptoms to chronic illness or breast cancer was significantly related to more pain, depression, role impairment, and poorer mental health. Not knowing the cause of symptoms was significantly related to poorer social functioning, mental health, and purpose in life; less energy; and higher levels of depression and anxiety.

Conclusions: The symptom experience and QOL of older breast cancer survivors are similar to those of older women with other chronic health problems. Beliefs about symptoms influence QOL in older women.

Implications for Nursing: A broader assessment of symptoms is needed to assist older breast cancer survivors with symptom management. Symptom interventions in older women should address patients' beliefs about symptoms if QOL is to be enhanced.

Key Points . . .

- Most symptoms reported by older breast cancer survivors are symptoms common to aging and other chronic health conditions.
- Older breast cancer survivors attribute most of their symptoms to aging and other chronic health problems.
- Older breast cancer survivors are similar to older women without breast cancer in terms of symptoms and quality of life.
- Older women's beliefs about the cause of symptoms are related to their quality of life.

health conditions that can affect physical function and QOL. However, older women without breast cancer may experience the same symptoms and comorbid conditions. Whether the addition of a cancer diagnosis and treatment to the chronic symptoms and health problems of old age influences QOL in older breast cancer survivors is not known.

Older Breast Cancer Survivors

Age is the single most important risk factor for developing breast cancer. Incidence and death rates increase with age, with the majority of breast cancers occurring after age 50 and the highest incidence occurring in women aged 75–79 (Ries et al., 2002). The number of breast cancer cases in women older than 65 is expected to grow because a large cohort of middle-aged women will reach old age in the next 10–20 years. Also, life expectancy for women has increased, so older women will live longer with the disease (Byrne, Smart, Chu, & Hartmann, 1994; Peer, Verbeek, Mravunac, Hendriks, & Holland, 1996). Thus, the number of older women dealing with breast cancer survivor issues also will grow.

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Although the burden of cancer falls disproportionately on older people, little research has focused on the biologic, medical, or psychosocial aspects of cancer in older people (National Institute on Aging & National Cancer Institute, 2001). The importance of the issue has been noted. For instance, interventions to target multiple symptoms, identify symptom clusters, and address long-term survivorship issues were named priority research areas by the Oncology Nursing Society (2003). Enhancing quality of life (QOL) in older cancer survivors has been described as a critical component of gerontologic nursing practice (Hodgson, 2002). Researchers have hypothesized that older women with breast cancer face unique survivorship issues because of the joint impact of a cancer diagnosis and its treatment and the physical and health changes commonly associated with aging (Yancik et al., 2001). The changes include multiple, often chronic, overlapping symptoms caused by comorbid chronic

Symptoms and Quality of Life

In old age, two powerful determinants of QOL are the symptoms and functional impairments that arise from chronic health problems (Heidrich, 1994, 1998, 1999; Heidrich & Ryff, 1993). In older patients with cancer, symptom severity has been related to poorer QOL and to declines in physical functioning (Given, Given, Azzouz, & Stommel, 2001; Given, Given, & Stommel, 1994; Kurtz, Kurtz, Stommel, Given, & Given, 1999, 2001; Vinokur, Threatt, Vinokur-Kaplan, & Satariano, 1990). However, in a study comparing patients with breast cancer to healthy, age-matched controls, younger women with breast cancer fared worse in terms of functional decline and QOL than older women with or without breast cancer (Kroenke et al., 2004). However, the study did not examine whether symptoms played a role in the relationships.

The long-term effects of symptoms on QOL in breast cancer survivors have received less attention, even though long-term breast cancer survivors report continued problems with physical symptoms, depression, fears of disease recurrence, sexuality, and communication with family members and healthcare providers (Dow, Ferrell, Leigh, Ly, & Gulasekaram, 1996; Ferrell, Dow, Leigh, Ly, & Gulasekaram, 1995; Ferrell, Grant, Funk, Otis-Green, & Garcia, 1997; Ganz et al., 1996; Hoskins, 1997; Omne-Ponten, Holmberg, & Sjoden, 1994; Polinsky, 1994; Schag et al., 1993; Spiegel, 1997; Wyatt & Friedman, 1996). On the other hand, breast cancer survivors have reported an increase in one dimension of QOL: a sense of purpose and meaning in life (Dow et al., 1996; Dow, Ferrell, Haberman, & Eaton, 1999; Ferrell et al., 1997; Taylor, Lichtman, & Wood, 1984). In gerontologic studies, purpose in life has been identified as a core dimension of QOL in older adults (Heidrich, 1998; Ryff & Singer, 1998; Zebrack, 2000).

Research indicates that symptoms influence physical function and QOL in older people with cancer and in breast cancer survivors specifically, but the studies suffer from a number of shortcomings. First, the measurement of symptoms and symptom distress was limited to symptoms related to cancer and its treatment (e.g., cancer-related pain, nausea, fatigue, lymphedema) but neglected the symptoms that are prevalent in older people generally (e.g., joint pain, stiffness, memory deficits). Second, the time frame was limited to the measurement of symptoms and symptom distress during treatment or shortly thereafter, not in the long term. Third, few studies included comparison groups of older people, making it difficult to draw conclusions as to which effects may be the result of aging versus cancer. Finally, to understand the symptom experience of older breast cancer survivors, researchers must examine the role that beliefs about symptoms play.

Gerontologic research indicates that older people often believe that symptoms that may be a result of disease or the consequence of cancer and its treatment are a part of normal aging and, therefore, can be ignored (Morgan, Pendleton, Clague, & Horan, 1997). If an older person believes that a symptom is caused by aging, he or she is less likely to engage in self-care behaviors (Dill, Brown, Ciambrone, & Rakowski, 1995; Haug, Wykle, & Namazi, 1989; Heidrich, 2002; Keller, Leventhal, Prohaska, & Leventhal, 1989; Prohaska, Leventhal, Leventhal, & Keller, 1985), which may influence subsequent QOL. Increased depression and lower levels of well-being have been found in patients with cancer generally and in patients with breast cancer who perceive their illness as chronic,

regardless of the actual stage of disease (Heidrich, Forsthoef, & Ward, 1994; Rabin, Leventhal, & Goodin, 2004; Ward, Viergutz, Tormey, DeMuth, & Paulen, 1992).

In summary, although studies have suggested that the experience of older breast cancer survivors is unique, few have examined whether age-related symptoms, beliefs about symptoms, and QOL differ between older women with and those without breast cancer. The purpose of the current study was to compare the symptoms, symptom beliefs, and QOL of older breast cancer survivors and older women without a history of breast cancer. Specific questions were

- What are the symptoms experienced by older women with and without breast cancer?
- Do differences exist in the number and severity of symptoms experienced by older women with and without breast cancer?
- What do women with and without breast cancer believe is the cause of their symptoms?
- Are symptoms related to QOL?
- Are beliefs about symptoms related to QOL?

Methods

Sample, Setting, and Procedure

To be eligible for the study, women had to be aged 65 or older, be living independently, be able to understand English, and have no cognitive impairment that would preclude participating in an interview in the opinion of the research nurse. Women with a history of breast cancer had to have no metastatic disease by self-report. No restriction was put on the length of cancer survivorship, consistent with the National Institutes of Health Office of Cancer Survivorship definition of survivor, to capture the breadth of older women's experiences. The sample consisted of 42 women, 18 with a diagnosis of breast cancer and 24 with no history of breast cancer.

The Health Sciences Institutional Review Board at the primary investigator's university approved the study. Women were recruited via flyers and advertisements in senior centers, independent living facilities, and community newspapers. Those who wished to participate contacted the research office; the study was explained, eligibility determined, and an appointment made for an interview with a research nurse in the woman's home or in a private room in a senior center. Two experienced nurse practitioner master's students were trained in and carried out the study protocol. After obtaining written informed consent, the research nurses administered a series of self-report, structured questionnaires. Women could choose whether to complete the self-report instruments on their own or with the assistance of a nurse. Most completed them without assistance. The average time of the session was 104 minutes, with a range of 45–190 minutes. At the end of the session, women answered 12 questions about participant burden and satisfaction with the study. More than 95% reported that the study was important, relevant, worthwhile, and positive for them. Three women (7%) reported that it was too long. Recruitment took about six months. No women withdrew from the study.

Measurements

Table 1 lists the variables measured, the corresponding instruments, and their reliability (alpha) in the current study.

Demographic and breast cancer information: Women were asked their age, education, income, and living arrangement.

Table 1. Description of Concepts, Associated Instruments, Variables, and Reliability Information

Concept	Instrument	Variable	Reliability in This Sample
Symptom distress	Symptom Bother Scale–Revised (SB-R) (Heidrich, 1993)	Number of symptoms Mean degree of bother from symptoms	Not applicable 0.89
Symptom beliefs	SB-R and attribution questions	Frequency of attributions to aging, breast cancer, other illness, or unknown	Not applicable
Quality of life: physical function	Medical Outcomes Study Short Form-36 subscale scores (Ware & Sherbourne, 1992)	General health Physical functioning Social functioning Role–emotional Role–physical Vitality Pain Mental health	0.76 0.85 0.78 0.76 0.86 0.87 0.75 0.87
Quality of life: existential	Purpose in Life Scale (PIL) (Ryff, 1989)	Purpose in life	0.89
Quality of life: mental health and mood	Center for Epidemiological Studies Depression Scale (Radloff, 1977) State-Trait Anxiety Inventory (STAI) (Spielberger et al., 1970)	Depression Anxiety	0.85 0.91
Chronic health problems	Older Americans Resources Service Schedule of Illnesses (Duke University Center for the Study of Aging and Human Development, 1978)	Health problems	Not applicable

Women with breast cancer were asked the date of diagnosis, whether they were taking tamoxifen, and length of time on tamoxifen.

Symptom distress: Number and distress from symptoms were measured with **Heidrich’s Symptom Bother Scale–Revised (SB-R)**. The original Symptom Bother Scale was a 13-item scale of distress related to symptoms common to aging and age-related chronic conditions. Respondents are asked whether they have each symptom and how much they are bothered by it on a 0 (don’t have) and 1 (have, but not at all bothered) to 5 (extremely bothered) scale. The original scale demonstrated validity and reliability in a number of cross-sectional and longitudinal studies of older adults and adults with cancer (Heidrich, 1993, 1994, 1998). The reliability (alpha) coefficient in past studies ranged from 0.78–0.86. For the current study, 24 items that tapped symptoms related to effects of breast cancer and its treatment (including hormonal) were identified and added to the original scale after reviewing symptom distress scales common in cancer research and the literature on cancer side effects and symptoms. The total number of symptoms (0–37 possible) and mean degree of bother (symptom distress) were computed. The reliability (alpha coefficient) in the current sample for symptom distress was 0.89. Evidence of construct validity in the current study includes significant negative correlations between the SB-R and many of the QOL measurements and a significant positive correlation with a number of health problems.

Symptom beliefs: For each symptom on the SB-R that women responded that they had (i.e., any score other than 0), women were asked what they perceived to be the cause of the symptom: breast cancer, other illness, aging, or “don’t know.” For each cause, the total number of symptoms attributed to it was computed.

Quality of life: A comprehensive and multidimensional assessment of QOL requires the use of multiple measurements. QOL was measured using instruments validated in

epidemiologic investigations of health-related QOL in older adults with chronic conditions. Functional QOL was measured using the **Medical Outcomes Study Short Form-36 (SF-36)**, a 36-item scale that includes eight subscales tapping physical and mental health: physical functioning, role–physical, role–emotional, vitality, mental health, social functioning, pain, and general health (Ware & Sherbourne, 1992). Subscale scores are computed using specific scoring instructions. The scale was chosen because it has been used in hundreds of studies, is valid for use with older patients, has demonstrated validity and reliability, and has documented, published norms for general and disease-specific populations that can be used for comparison purposes (Ware, Snow, Kosinski, & Gandek, 2000). The form also has been used in numerous clinical trials with patients with breast cancer as a QOL measurement (Schlenk et al., 1998; Ware & Sherbourne). Internal consistency reliability coefficients for subscales have ranged from 0.62–0.96 with a median of 0.80. Test-retest reliabilities range from 0.43–0.90 at two weeks and six months. In terms of validity, the SF-36 is positively related to other health measurements (e.g., Katz Activities of Daily Living Scale, Duke Health Profile, Sickness Impact Scale) as well as use of healthcare measurements and mental health measurements. In the current study, the alpha reliabilities of the subscales were higher than 0.74, except for the depression subscale, which was not used in further analyses because of low reliability (alpha = 0.36) and because another measurement of depression was available. Higher scores on the SF-36 indicate better QOL.

Existential QOL was measured with the 14-item **Purpose in Life Scale (PIL)** (Ryff, 1989). The scale was chosen because of its basis in adult developmental theory and its significant correlations with important physical and mental health outcomes in gerontologic studies. In addition, the PIL taps dimensions related to spirituality and finding meaning, both of which have demonstrated important relationships with

adaptation to breast cancer. The PIL has been used in cross-sectional, longitudinal, and cross-cultural studies; is reliable (alphas range from 0.86–0.93 and test-retest reliability over six weeks ranges from 0.81–0.88); and is related to other indexes of well-being (i.e., affect balance, life satisfaction, self-esteem, morale, depression, and internal locus of control) (Heidrich, 1993, 1994, 1998; Heidrich & Powwattana, 2004; Ryff; Ryff & Keyes, 1995). Participants respond to items on a six-point (strongly agree to strongly disagree) scale. Higher scores indicate higher levels of purpose in life. The alpha reliability in the current study was 0.89.

Mental health QOL was assessed with the **Center for Epidemiological Studies Depression Scale (CES-D)** (Radloff, 1977) and the **State-Trait Anxiety Inventory (STAI)** (Spielberger, Gorsuch, & Lushene, 1970). The CES-D was developed for community-based studies and has been used extensively with older samples and patients with cancer because of its focus on affective rather than somatic symptoms. It has had extensive psychometric testing with demonstrated reliability and validity (see George [1989] for a review). Respondents answer each item based on how often they felt or behaved that way in the past week (on a 0–3 scale), with higher scores indicating higher levels of depression. The internal consistency (alpha) coefficient in the current sample was 0.85. Scores higher than 15 on the CES-D are considered indicative of clinical depression.

The STAI state anxiety scale is a 20-item inventory that is used widely in health and social-psychological research and in community and patient populations (Spielberger et al., 1970). Extensive psychometric testing has been reported for reliability (internal consistency = 0.83–0.92) and validity (convergent and discriminant). Respondents rate on a scale of 1 (not at all) to 4 (very much) how they feel “right now” for 20 mood items. Higher scores indicate higher anxiety. The alpha reliability in the current study was 0.91.

Chronic health problems: The **Older Americans Resources Service Schedule of Illnesses (OARS)** is an instrument widely used to assess health status in community-dwelling samples of middle-aged and older adults (Duke University Center for the Study of Aging and Human Development, 1978). Three health problems (osteoporosis, depression, and hip fracture) were added to the list of illnesses because of their prevalence in older women, resulting in a 22-item, self-report checklist that has been used in numerous studies of older women’s health (Heidrich, 1993; Heidrich & Powwattana, 2004; Plach, Heidrich, & Waite, 2003). In the studies, convergent and discriminant validity was shown, with significant correlations with subjective health, symptom bother, and functional health measurements (e.g., activities of daily living). Because the OARS is a checklist, reliability (internal consistency) is not applicable. The total number of health problems was computed.

Instruments were administered in the following order: demographic and breast cancer information, SF-36, OARS, SB-R and symptom beliefs, PIL, CES-D, and STAI.

Results

Prior to answering the research questions, women with and without breast cancer were compared to determine whether they had differences in demographic characteristics, chronic health problems, or QOL using nonparametric Mann-Whitney tests (for ordinal-level variables) and chi-square tests (for frequencies) (see Tables 2 and 3). No significant group differences

existed on any variables. Across both groups, the most frequent chronic health problems were arthritis (69%), cataracts (55%), hypertension (41%), osteoporosis (41%), peripheral circulatory disorders (38%), and depression (32%). For the 18 women with breast cancer, seven (39%) were less than eight years postdiagnosis; two were more than 20 years postdiagnosis. The mean years since diagnosis was 10.6 (range = 1–25). Nine (50%) of the women with breast cancer were taking tamoxifen. The means for the QOL measurements indicated high levels of QOL and low levels of depression and anxiety.

Symptoms

Chi-square tests were conducted to determine whether significant differences existed in the frequency of each symptom by group. Of 37 symptoms, only one, aching, was reported significantly more often by women with breast cancer ($p < 0.05$). Because of the lack of differences, frequencies were collapsed over groups. Table 4 shows, in descending order, the frequency of symptoms and the frequency of each symptom belief (whether the symptom was perceived to be caused by breast cancer, chronic illness, aging, or unknown). The 10 most frequent symptoms were symptoms commonly experienced by older people. The researchers also identified the 10 most bothersome symptoms across women who reported them. The frequency of women reporting each was pain (76%), joint pain (60%), fatigue (52%), aching (45%), dry mouth (33%), weight

Table 2. Demographic Characteristics of Women With and Without Breast Cancer

Variable	With Breast Cancer (N = 18)		Without Breast Cancer (N = 24)	
	n	%	n	%
Age (years)				
With breast cancer \bar{X} (SD) = 74.16 (7.12)	—	—	—	—
Without breast cancer \bar{X} (SD) = 76.33 (5.31)	—	—	—	—
Education				
Less than high school	2	11	3	13
High school graduate	9	50	7	29
Some college	3	17	9	38
College graduate	—	—	2	8
Postgraduate	4	22	3	13
Income (\$)				
Less than 8,000	1	6	2	8
8,000–15,999	4	22	3	13
16,000–29,999	5	28	9	38
30,000–49,999	6	33	4	17
50,000 or more	2	11	3	13
Missing data	—	—	3	13
Ethnicity				
White	18	100	23	96
Nonwhite	—	—	1	4
Marital status				
Married	8	44	8	33
Widowed	8	44	12	50
Divorced or separated	2	11	4	17
Living arrangement				
Alone	8	44	15	63
Not alone	10	56	9	38

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

Table 3. Descriptive Statistics for Chronic Health Problems and Quality-of-Life Measurements for Women With and Without Breast Cancer

Measurement	With Breast Cancer (N = 18)		Without Breast Cancer (N = 24)		Possible Range
	\bar{X}	SD	\bar{X}	SD	
Chronic health problems	5.44	4.00	4.50	2.00	0–22
Medical Outcomes Study Short Form-36 subscales					
General health	67.89	20.58	73.12	21.20	0–100
Physical functioning	71.94	18.88	74.79	24.20	0–100
Social functioning	86.11	21.39	91.15	15.85	0–100
Role–emotional	79.63	32.62	84.72	31.05	0–100
Role–physical	75.00	34.30	73.96	38.65	0–100
Vitality	60.46	25.09	66.46	19.64	0–100
Pain	72.78	27.42	76.88	22.52	0–100
Mental health	76.89	23.22	84.00	11.43	0–100
Purpose in life	4.78	0.95	4.33	0.89	1–6
Depression	9.89	9.88	8.88	5.36	0–60
Anxiety	29.28	10.37	34.04	11.84	20–80

gain (29%), inability to concentrate (26%), weakness (21%), constipation (21%), and hot flashes (17%).

Differences in Symptoms and Symptom Distress

Women in both groups reported numerous symptoms (\bar{X} = 12.2 for those with breast cancer, 11.8 for those without) but low levels of symptom distress (see Table 5). Mann-Whitney U-tests indicated no significant group differences on either variable.

Beliefs Regarding the Cause of Symptoms

Aging was the most frequently reported cause of symptoms (n = 206), followed by chronic illness (n = 171). “Don’t know” was reported 95 times and breast cancer only 16 times. Table 5 shows the mean number of beliefs about causes of symptoms across all symptoms by group. No significant differences existed, except that symptoms attributed to breast cancer were, of course, higher in the breast cancer group (t [40] = -2.89 , p < 0.01), but even women with breast cancer identified breast cancer as a cause of symptoms infrequently. Overall, women with breast cancer were as likely as women without breast cancer to attribute the majority of their symptoms to aging and chronic health problems.

Before addressing the last two research questions, the researchers first examined whether the relationship between symptoms and QOL differed for women with and without a history of breast cancer using hierarchical linear regression. In the analyses, they tested whether the interaction of group (breast cancer versus no breast cancer) and number of symptoms was a significant predictor of each QOL outcome measure, controlling for health problems. Because none of the calculations was significant, the analyses were performed on the total sample.

Symptoms Related to Quality of Life

Partial correlations, controlling for number of health problems, were computed among the symptom number, symptom distress, and QOL measures (see Table 6). Symptom number and symptom distress were significantly related to the majority of the QOL measures (r = 0.31–0.60, p < 0.05).

Table 4. Frequency of Symptoms and Beliefs About Their Cause

Symptom	Frequency of Symptom	Frequency of Belief About Cause			
		Breast Cancer	Chronic Illness	Aging	Don't Know
Pain	32	1	19	9	1
Memory problems	32	–	1	29	1
Joint pain	25	–	17	6	1
Stiffness	25	–	11	12	–
Dry skin	22	1	5	9	4
Fatigue	22	2	5	14	1
Aching	19	–	11	6	1
Decreased sex drive	18	–	2	15	10
Irritated eyes	18	–	6	6	6
Difficulty falling asleep	18	–	3	3	9
Vision changes	17	1	7	7	1
Poor hearing	16	–	1	11	3
Hair thinning or loss	16	–	1	11	2
Vaginal dryness	15	2	1	10	1
Numbness or tingling in extremities	15	1	8	1	3
Trouble concentrating	15	–	3	10	2
Dry mouth	14	2	3	–	4
Itching	14	–	8	–	5
Waking too early	14	–	2	1	7
Waking too often	14	–	6	6	2
Poor vision	13	–	7	4	1
Increased urination	13	–	1	5	2
Swelling in hands and feet	13	–	5	2	4
Incontinence	13	–	3	8	1
Weight gain	12	–	3	4	–
Shortness of breath	9	2	1	3	3
Changes in smell or taste	9	–	2	3	2
Diarrhea	9	–	6	1	–
Constipation	9	–	5	–	3
Weakness	9	–	2	5	1
Thirst	9	–	2	–	3
Dizziness	8	–	4	1	–
Nightmares or disturbing dreams	8	–	1	–	6
Hot flashes	7	3	1	–	2
Headaches	6	–	3	–	1
Mood changes	6	–	3	2	1
Vaginal discharge	6	1	2	2	1
Total number of attributions	–	16	171	206	95

N = 42

Beliefs About Symptoms Related to Quality of Life

Few significant correlations were found between symptom beliefs and QOL variables, except for “don’t know” as a cause. Not knowing the cause of symptoms was significantly related to poorer social functioning, less energy, poorer mental health, lower purpose in life, and higher levels of depression and anxiety (see Table 6). The researchers also examined whether symptom distress was related to beliefs about symptom cause. Symptom distress was significantly (p < 0.05) related to believing that symptoms were caused by chronic illness (r = 0.42), breast cancer (r = 0.39), and “don’t know” (r = 0.52), but not by aging (r = 0.18).

Table 5. Descriptive Statistics for Symptom Distress (Number and Bother) and Symptom Beliefs for Women With and Without Breast Cancer

Variable	With Breast Cancer (N = 18)		Without Breast Cancer (N = 24)		Possible Range
	\bar{X}	SD	\bar{X}	SD	
Symptom distress	0.84	0.54	0.75	0.40	0–5
Number of symptoms	12.17	5.88	11.75	4.79	0–37
Symptom beliefs—number of symptoms caused by					
Aging	4.61	2.73	5.04	3.78	0–15
Chronic illness	4.22	3.69	3.79	3.57	0–14
Breast cancer*	0.83	1.15	—	—	0–3
Don't know	2.11	1.68	2.67	2.90	0–11

* $p < 0.004$

The study did not examine whether symptom beliefs were related to how women coped with or managed symptoms. However, a subset ($n = 14$) of women (with and without breast cancer) were asked about their self-care activities in managing symptoms. Twenty percent reported that they had never talked to a doctor or nurse about symptoms that were bothersome to them.

Discussion

Older breast cancer survivors typically experience multiple chronic health problems associated with aging and are faced with the task of making meaning of and responding to the numerous symptoms associated with such conditions. Breast cancer survivors have reported that experiencing symptoms can be stressful because any symptom might be a sign that cancer is worsening or recurring (Polinsky, 1994; Vickberg, 2003). On the other hand, the same symptom might be the result of normal age-related physiologic changes or age-related chronic conditions, such as arthritis.

Women in the current study reported that the cause of the majority of their symptoms was aging, regardless of a history of breast cancer. Attributions to chronic illness were almost as frequent, however. Very few symptoms were attributed to breast cancer or its treatment. Of interest is the number of times that women did not know a cause for their symptoms.

Some research has shown that attributions about illness or symptom causes are related to treatment seeking and adherence to medical regimens (Lau, Bernard, & Hartman, 1989; Pennebaker & Watson, 1988; Prohaska, Keller, Leventhal, & Leventhal, 1987; Raczynski et al., 1994). The behaviors, in turn, potentially influence QOL. In the current study, symptom attributions were related to QOL in very different ways. First, aging attributions were positively related to QOL, although the correlations were not significant. Conversely, the more symptoms that women attributed to chronic illness, the lower their QOL and the more they were distressed by symptoms. Few symptoms were attributed to breast cancer, but such beliefs also were negatively related to QOL, specifically poorer mental health and more pain and depression. Most compelling were the numerous significant relationships between QOL and not having a causal attribution for symptoms (i.e., “don’t know” as a response). Not knowing a cause was significantly related to poorer social functioning, less energy, poorer mental health, less purpose in life, and more depression and anxiety. Why is not having a causal attribution related to poorer QOL? Not perceiving an identified cause of a symptom may be related to QOL through its effect on symptom management activities. That is, women may not engage in symptom management under such conditions. The lack of causal attribution also may mean that women have not communicated with their healthcare providers about symptoms, which has been reported in other studies (Gill, Desai, Gahbauer, Holford, & Williams, 2001). This is an important question for future research and suggests that nursing interventions related to symptom management need to assist women in understanding the possible cause of symptoms, which may lead to more effective coping related to symptoms.

Table 6. Partial Correlations of Quality of Life With Symptom Number and Distress and Symptom Beliefs, Controlling for Number of Health Problems

Quality of Life	Symptom		Belief About Symptom Cause			
	Number	Distress	Aging	Chronic Illness	Breast Cancer	Don't Know
Medical Outcomes Study Short Form-36						
General health	−0.32*	−0.45*	—	0.06	−0.14	−0.21
Physical function	−0.03	−0.08	0.21	−0.08	−0.02	−0.04
Social function	−0.44**	−0.60***	0.23	−0.16	−0.27	−0.33*
Role—emotional	−0.14	−0.22	0.28	0.02	−0.23	−0.21
Role—physical	−0.28**	0.52***	0.26	−0.31*	−0.10	−0.22
Energy	−0.52***	−0.56***	−0.09	−0.10	−0.27	−0.35*
Pain	−0.31*	−0.56***	0.22	−0.31*	−0.32*	−0.12
Mental health	−0.46**	−0.45**	0.18	−0.26	−0.46**	−0.33*
Purpose in life	−0.24	−0.27	0.07	0.10	0.07	−0.42**
Depression	0.40**	0.49**	−0.20	0.16	0.34*	0.45**
Anxiety	0.25	0.31*	−0.05	−0.09	—	0.38*

* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Note. High scores on all Medical Outcomes Study Short Form-36 subscales indicate good quality of life.

Overall, older breast cancer survivors were similar to other older women in their demographic characteristics, physical health, symptoms, symptom beliefs, and QOL. For both groups of women, the influence of symptoms on QOL was evident. The number of symptoms and distress from them were associated with poorer QOL across most of the dimensions that were measured. Of note is the sheer number of symptoms that women reported and the fact that almost all of them could, in reality, be related to any number of causes.

Limitations

The study has a number of limitations that should be considered when interpreting the findings. First, the sample size was small, which could influence the statistical results obtained as well as the generalizability of the findings. However, the demographic characteristics of the sample were somewhat similar to those of older women in the general population (U.S. Department of Health and Human Services, 2003). Second, for the women with breast cancer, the average length of time as a breast cancer survivor was 10 years. Women who have been survivors for fewer years may have responded differently. Although half of the women with breast cancer were taking tamoxifen, the number was small and precluded the researchers' ability to examine any influence of tamoxifen on symptoms. Finally, the study was cross-sectional, and longitudinal data are needed to ascertain any causal relationships among symptoms, symptom representations, and QOL.

Implications for Nursing

Although the study was small and descriptive, it has some implications for nursing practice. First, it should raise nurses' awareness that older patients with breast cancer, and probably other cancers, also are coping with numerous comorbidities and associated symptoms. Assessment of symptoms that may be distressing or bothersome to

patients should be broad enough to encompass the types of symptoms typically experienced in older age and should include some assessment of the level of symptom distress. Assessment of pain is standard for older patients with cancer and survivors, but similar attention should be paid to other common symptoms.

Asking patients with cancer about what they perceive as the cause of their symptoms may be fruitful, given the relationship between symptom beliefs and QOL in the study. Although why such beliefs influence QOL is not known, asking the question may open dialogue with older patients who may be reluctant to talk about symptoms or their emotional responses to them.

A need exists for further research examining the continuum of the cancer experience for older people. Large-scale, longitudinal, descriptive studies are needed to document the long-term effects of cancer and cancer treatment on symptomatology, physical function, cognitive function, mental health, and QOL in older adults. Nursing interventions to improve symptom management should be expanded to address the multiple, chronic symptoms commonly experienced by older people, rather than single symptoms or only symptoms related to cancer treatment. Nursing interventions aimed at improving symptom management and decreasing symptom distress could profit from the use of representational models that take into account beliefs about symptoms and provide a theoretical basis for developing and testing such interventions (Donovan & Ward, 2001).

In summary, the current study supports the premise that older women's beliefs about their symptoms are related to QOL. Because symptoms often are chronic in older breast cancer survivors and because the number of years women live with breast cancer and other chronic conditions is increasing, nursing interventions to improve well-being at this time of life are needed.

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