Patterns of Symptom Distress in Older Women After Surgical Treatment for Breast Cancer

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Purpose/Objectives: To describe patterns of symptom distress over time in older women receiving surgical treatment for breast cancer and to examine the relationship of selected patient and clinical characteristics to symptom distress.

Design: Secondary analysis of breast cancer data from a prospective, longitudinal study of older patients with several types of cancer.

Setting: Large mid-Atlantic teaching hospital.

Sample: 57 patients with breast cancer participated. Subjects had a mean age of 68 and were predominantly white, not Hispanic, married, Protestant, retired, and in stage I or II. A total of 55 subjects completed the study.

Methods: The Symptom Distress Scale was used. Data were collected on discharge and at three and six months postdischarge. Descriptive statistics, t test, analysis of variance, correlation coefficients, and stepwise multiple regression were analyzed.

Main Research Variables: Total symptom distress and 13 individual symptom scores.

Findings: Fatigue, frequency of pain, outlook, and insomnia consistently were most prevalent and severe. Symptoms decreased gradually. Younger, more educated, and married women experienced more distress.

Conclusions: Interactions among symptoms are complex. Later symptom distress may be predicted by early experience and demographic characteristics.

Implications for Nursing: Clinicians should inquire about symptom distress at each encounter, expect multiple symptoms, and anticipate greater symptom distress in patients who are younger, more educated, or married or living with a partner. In women with more severe, earlier symptom distress, nurses should intervene promptly. Research should determine interrelationships of symptoms and how they might be affected by contextual variables, describe critical attributes of the nurse-patient interaction that might mitigate symptom distress, characterize the relationship of symptom intensity and distress, clarify the mechanism of the relationship between marital status and symptom distress, and identify the effect of symptoms, individually and collectively, on survival and quality of life.

Key Points . . .

- ➤ Most new cases of invasive breast cancer occur in older women who will be treated with surgery.
- ➤ Fatigue, frequency of pain, outlook, and insomnia were the most distressing postsurgical symptoms reported and were experienced by more than half of the women throughout six months.
- ➤ Although individuals have unique patterns of postsurgical symptom distress, women who are younger, better educated, or married may experience greater distress.
- ➤ Later symptom distress can be predicted from knowledge of earlier symptom distress.

Breast cancer, the leading cause of cancer deaths among women worldwide (World Health Organization, 2006), is the most commonly diagnosed invasive cancer among women in the United States (Jemal et al., 2005). Of the approximately 200,000 American women diagnosed with invasive breast cancer each year, about 78% are older than 50 years (Department of Defense, 2005). Most of the women who seek treatment for breast cancer will undergo surgery, either lumpectomy or mastectomy with or without axillary node dissection.

Women experience an array of symptoms throughout the course of their diagnosis, treatment, and recovery, such as insomnia, mood disturbances, fatigue, and difficulties with concentration (Carpenter et al., 2004; Cimprich, 1999; Nail & Winningham, 1995). Treatment-related fatigue, sleep disturbances, pain, hot flashes, nausea, and vomiting occur during and after breast cancer treatment (Bower et al., 2000; Graf & Geller, 2003). Following treatment, in addition to the previously listed symptoms, women report lymphedema and decreased arm mobility, sexual difficulties, problems with memory and attention, being unhappy with their appearance, and having hot flashes, aches and pains, and muscle stiffness (Ganz et al., 2004).

Symptom management is a core aspect of nursing practice. Understanding is necessary to plan and carry out effective interventions to relieve symptoms. Measurement, using reliable and valid instruments, allows nurses to learn about the frequency and intensity of symptoms, how the phenomena change over time, and their relationship to other variables.

The purpose of the current study was to describe the patterns of symptom distress over time in older women receiving surgical treatment for breast cancer and to examine the

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relationship of selected patient and clinical characteristics to symptom distress. Because breast cancer incidence and mortality increase with age (Lacey, Devesa, & Brinton, 2002), an understanding of the nature of the symptom experience of older women following initial surgical treatment for breast cancer is necessary to plan interventions that are appropriate, acceptable, and effective in mitigating symptom distress and improving quality of life. Such understanding will allow identification and remediation of the difficulties that older women have at home, potentially diminishing undesirable effects of burdensome symptom distress.

Related Literature

Symptoms

Symptoms are perceived indicators of change in healthy functioning as experienced by patients (Hegyvary, 1993). They are multidimensional, having subjective, perceptional, and experiential characteristics (Dodd, Janson, et al., 2001; Teel, Meek, McNamara, & Watson, 1997). These characteristics include both the physiologic sensations that signal patients that some internal condition is different and the interpretive processes that motivate patients to construct meanings for the symptoms and decide how to respond to them (Dabbs et al., 2004). Symptoms disrupt function, most notably social function and communication. Symptom outcomes include functional and emotional status, healthcare service use, mortality, morbidity, financial status, self-care, and self-management (Caldwell & Miaskowski, 2000; Dodd, Miaskowski, & Paul, 2001; Kenefick, 1999, 2004; Reishtein, 2005).

Symptom Distress

Symptom distress is the degree of perceived discomfort experienced in relation to a symptom (McCorkle & Young, 1978). Symptom distress affects the quality of life and survival of patients with cancer (Fu, LeMone, & McDaniel, 2004), and increased symptom distress has been associated with increased mortality (Degner & Sloan, 1995). The term *symptom distress* implies more than intensity. Symptom distress reflects symptom experience. The extent of symptom distress is determined by a person's sense of departure from healthy function, sensation, or experience in combination with the individual's interpretation of the importance of these events (McDaniel & Rhodes, 1995). The experience of multiple simultaneous symptoms has a synergistic effect on symptom distress (Lenz, Pugh, Milligan, Gift, & Suppe, 1997). Symptom distress is affected by and influences activities performed by patients or their advocates to relieve the symptom or prevent it from occurring. Symptom distress is an outcome indicator for symptom management.

Methods

Design

This article reports a secondary analysis of data from a larger study of the effect of a short-term nursing intervention on the quality of life of older patients newly diagnosed with several types of cancer (McCorkle et al., 2000). Secondary analysis contributes to knowledge development by allowing an opportunity for the researcher to examine previously collected data for a new purpose. Secondary analysis is an efficient and economic technique used to explore a particular subgroup of the original sample (Polit & Hungler, 1995). The current study's analysis focuses on the symptom distress of older women with breast cancer. The purpose of the present analysis is to describe the patterns of symptom distress over time in older women receiving surgical treatment for breast cancer and to examine the relationship of selected patient and clinical characteristics to symptom distress. In contrast, the purpose of the parent study was to examine the effect of home nursing care interventions on clinical and psychosocial outcomes among 375 participants with lung, breast, colorectal, head and neck, prostate, urologic, or gynecologic cancer. The parent study's design was longitudinal, with data collected from the same subjects on discharge from the hospital and three and six months postdischarge by the same researcher using standardized procedures and instruments. In this type of study, the same group of subjects supplies data at multiple points in time, allowing patterns of change to be revealed. This approach is useful to identify the effect of conditions and characteristics on health outcomes (Polit & Hungler).

Sample

The original study had 375 subjects aged 60–92 years who were newly diagnosed with solid cancers. The subjects were recruited from a large mid-Atlantic teaching hospital, and institutional review board approval and subject informed consent were obtained. Subjects for the study described in this article were those from the original study who had breast cancer. The patients had had definitive primary surgical treatment for breast cancer and a prognosis of greater than six months. They were 60 years of age or older and discharged from the hospital with a physician's order for follow-up care related to one or more high-technology, complex procedure or treatment.

Instrument

The outcome measure of interest in this study was symptom distress (i.e., the degree of discomfort from specific symptoms as reported by the patient). The **Symptom Distress Scale** (McCorkle & Young, 1983) is a reliable and valid measure of this outcome (McCorkle, Cooley, & Shea, 1998). The scale contains 13 cards, each representing a different symptom and including a five-point Likert-type scale of distress severity. Items used in the scale are appetite, insomnia, frequency of pain, severity of pain, fatigue, bowel pattern, concentration, appearance, breathing, outlook, cough, frequency of nausea, and severity of nausea. The items reflect symptoms described as follows. *Appetite* reflects a subject's enjoyment of food. *Insomnia* reflects the ability to initiate and maintain sleep. *Frequency of pain* ranges from almost never to almost constantly. *Severity of pain* ranges from very mild to almost unbearable. *Fatigue* reflects frequency and severity of tiredness or exhaustion. *Bowel pattern* reflects discomfort related to changes in the usual bowel pattern. *Concentration* ranges from the normal ability to concentrate to perceived inability to concentrate at all. *Appearance* ranges from basically unchanged to drastically changed and includes elements of concern related to appearance. *Breathing* ranges from usually breathing normally to almost always having severe difficulty. *Outlook* includes being fearful, worried, and scared. *Cough* ranges from seldom to frequent, persistent, and severe. *Frequency of nausea* ranges from seldom to continually, whereas *severity of nausea* ranges from mild to being as sick as possible. For each

item, the scale of distress severity ranges from 1 (normal or no distress) to 5 (extreme distress). Subjects respond by circling the number that corresponds to their experience for that day. A total symptom distress score is the unweighted sum of the 13 items, ranging from 13–65. In this article, data related to individual items are reported using the item names found in the Symptom Distress Scale.

Statistical Procedures

Data were analyzed using the SPSS® (SPSS Inc., Chicago, IL) statistical package. Patient-related and clinical data were summarized with descriptive statistics, including frequencies, means, and standard deviations. Analysis of variance and t tests were used to assess differences in mean symptom scores among groups of subjects defined by demographic or clinical characteristics. Paired t-test analysis was used to examine symptom distress over time. Correlation coefficients identified relationships between symptoms. Stepwise multiple regression analysis was used to identify predictors of symptom distress.

Results

Description of the Sample

The study began with 57 patients with breast cancer. Attrition was minimal, with the loss of one subject by the second data collection point and an additional subject by the third data collection point. The sample was predominantly white, not of Hispanic origin, married, Protestant, and retired and did not live alone. The average subject was 68 years old, had completed 13 years of education, and had an annual income of more than $35,000 per year. Most of the subjects had been diagnosed with stage I or II breast cancer and two comorbidities. On average, they spent nearly three days in the hospital for a surgical treatment and experienced two initial complications of treatment (see Table 1).

Table 1. Demographic Characteristics of the Sample

Variable	n	%
Race		
White, not Hispanic	35	61
Black	21	37
Asian	1	2
Martial status		
Never married	5	9
Married	30	53
Separated or divorced	5	9
Widowed	17	30
Religion		
Protestant	28	49
Catholic	17	30
Jewish	8	14
None	3	5
Other	1	2
Employment		
Full-time	12	21
Part-time	4	7
Unemployed	2	4
Disabled	3	5
Retired	29	51
Homemaker	7	12
Lives alone		
No	41	72
Yes	16	28
Income ($)		
Less than 35,000	28	49
More than 35,000	29	51
Stage of disease		
I or II	54	95
III or IV	3	5

N = 57

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

Symptom Distress Over Time

Mean total symptom distress scores were 23.81 (SD = 6.60) at discharge, 20.52 (SD = 5.04) at three months postdischarge, and 18.60 (SD = 4.50) at six months postdischarge. Scores remained near the upper limit of the range defined in the literature as "low" (i.e., 13–24) (McCorkle et al., 1998). The decrease in total symptom distress was statistically significant ($p < 0.01$) between each of the three measurement points. From discharge to three months postdischarge, the difference was 3.34 (SD = 7.11). From three to six months postdischarge, the mean change was less in amount and variability (1.98, SD = 4.63). The greatest mean change and greatest variability were noted when comparing the discharge scores to the six-month scores (5.45, SD = 7.30) (see Figure 1).

The mean number of symptoms per subject remained the same (six) at discharge and three months, dropping to four at six months postdischarge. At each of the three points, the most severe and frequently occurring symptoms were fatigue, frequency of pain, outlook, and insomnia, in that order (see Figure 2). Relative severity of the four symptoms remained constant over time. Absolute severity of the four symptoms diminished over time (see Figure 3); however, more than half of the sample continued to experience the symptoms throughout the study period. Fatigue distress diminished significantly (total mean difference = 0.40, $p < 0.04$) from discharge to six months postdischarge but not from discharge to three months postdischarge or from three to six months. Distress cause by pain frequency (total mean change = 0.49, $p < 0.05$) and outlook (total mean change = 0.60, $p < 0.01$) showed the same pattern. Distress caused by insomnia decreased significantly from discharge to three months postdischarge (mean difference = 0.39, $p < 0.05$) and from discharge to six months postdischarge (mean difference = 0.62, $p < 0.01$), but not appreciably from three to six months.

Correlations Among Symptoms

Pearson correlations with a p value of less than 0.05 were noted at all three times (see Table 2).

Appearance: Distress caused by appearance correlated with distress resulting from outlook at all three measurement points.

Appetite: Subjects with distress related to appetite were likely to experience a large number of other symptoms, including insomnia, nausea, fatigue, bowel pattern, and distress caused by concentration, appearance, and outlook.

Fatigue: Subjects with fatigue were likely to experience distress caused by bowel pattern, concentration, and outlook. Four of the six correlates of fatigue at three months were associated with the digestive system: appetite, bowel pattern, nausea frequency, and nausea severity.

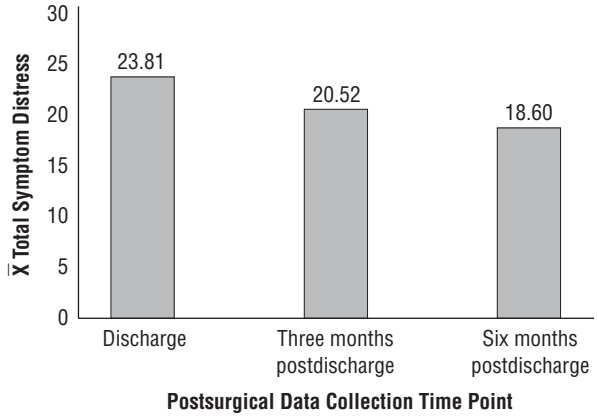

Figure 1. Mean Total Symptom Distress Over Time

Insomnia: Subjects with insomnia were likely to experience distress related to pain frequency and severity, fatigue, bowel pattern, concentration, appearance, breathing, and outlook. Individuals expressing distress related to insomnia by six months postdiagnosis were likely to have any of nine different symptoms.

Nausea: Significant correlations were found between severity and frequency of nausea at each of the three measurement points. Subjects with nausea were likely to experience distress related to appetite, insomnia, frequency of pain, fatigue, bowel pattern, breathing, and outlook.

Outlook: Outlook was associated with distress related to concentration and appearance at all three measurement points. Subjects distressed by their appearance on discharge from the hospital also expressed distress related to outlook. Distress related to outlook at six months was associated with distress caused by appearance, appetite, bowel pattern, concentration, insomnia, nausea frequency, and pain frequency.

Pain: Frequency and severity of pain correlated strongly with one another. Subjects with pain were likely to report distress related to fatigue, concentration, breathing, and outlook.

Persistent correlations: In addition to severity or frequency of pain and nausea, three sets of correlations persisted over the three measurement times: (a) concentration and fatigue, (b) concentration and outlook, and (c) appearance and outlook. The complexity of interactions among symptoms is not well described by the calculation of correlation coefficients.

Relationship of Selected Characteristics to Symptom Distress

Education correlated with total symptom distress at discharge ($r = 0.34$, $p < 0.01$), whereas age correlated negatively with total symptom distress at discharge ($r = -0.27$, $p < 0.05$). Thus, more education and younger age were associated with greater symptom distress at discharge.

Analysis of variance and t tests were used to assess differences in mean symptom scores among groups of subjects defined by demographic or clinical characteristics. The only significant findings concerned the analysis of data on marital status. To achieve adequate group size to allow analysis, groups were collapsed. Subjects who never married, were separated or divorced, or were widowed were combined into one group called "single" for purposes of analysis. Subjects who were married or living with a partner were combined into a group called "married" for the purpose of analysis. At six months postdischarge, married subjects showed a greater variability in symptom distress and significantly higher mean scores for total symptom distress ($p = 0.0001$), insomnia ($p = 0.0001$), frequency of pain ($p = 0.026$), fatigue ($p = 0.039$), bowel pattern ($p = 0.032$), and concentration ($p = 0.019$). No significant difference was found in total symptom distress among single and married subjects at discharge and three months postdischarge, but married subjects reported significantly more distress related to frequency of nausea ($p = 0.018$) and frequency of pain ($p = 0.018$) at three months postdischarge (see Table 3).

Predicting Variance in Symptom Distress

Stepwise multiple regression analysis revealed a statistically significant model for predicting total symptom distress at each of the three measurement points. Education predicted 11.5% ($p = 0.01$) of the variance in symptom distress at discharge. The symptom distress score at discharge predicted 8.1% ($p = 0.03$) of the variance in symptom distress at three months postdischarge, and the symptom distress score at three months predicted 29.5% ($p < 0.00$) of the variance in symptom distress at six months postdischarge (see Table 4).

Discussion

Symptom Prevalence and Intensity

At all three measurement points, fatigue, frequency of pain, outlook, and insomnia had the highest mean scores,

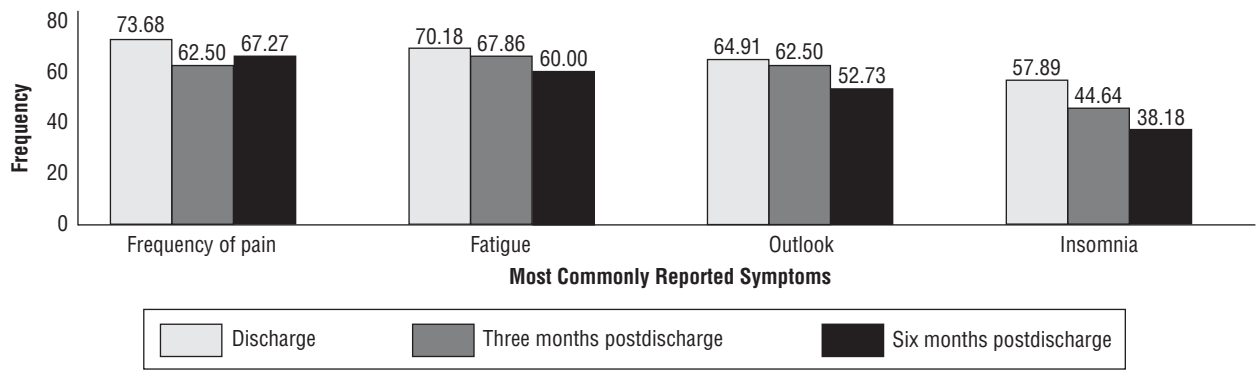

Figure 2. Frequency of the Most Commonly Reported Symptoms Over Time

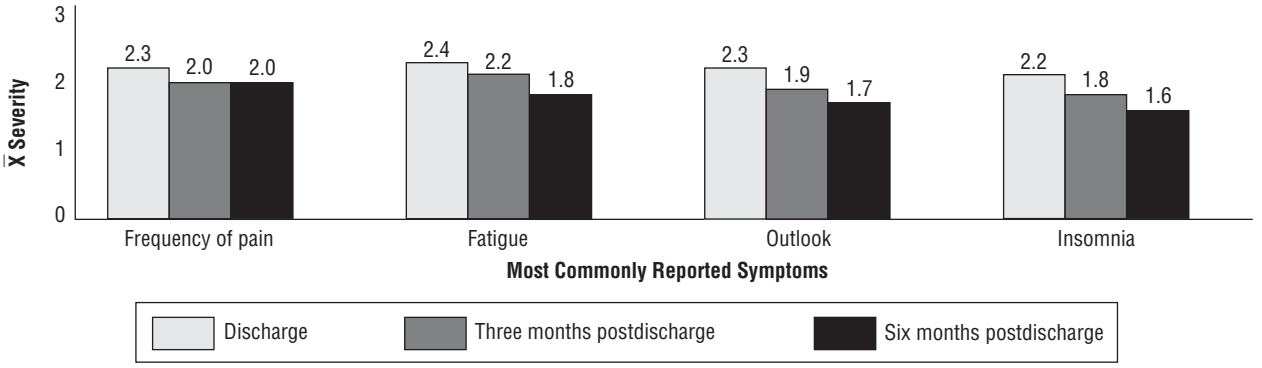

Figure 3. Mean Severity of the Most Commonly Reported Symptoms Over Time

representing primary sources of symptom distress. Pain and fatigue commonly are ranked as the most distressing symptoms by patients with cancer of other types (e.g., lung, breast, genitourinary system) (Cooley, Short, & Moriarty, 2003). These findings are similar to the lack of energy, worry, pain, and nausea reported by seriously ill patients with cancer (Tranmer et al., 2003). Findings have been similar in patients posthysterectomy who reported pain, sleep disturbances, depressed mood, and anxiety (Kim & Lee, 2001) and in patients with early-stage breast cancer who reported fatigue, appearance, insomnia, and concentration (Boehmke, 2004). Among patients with lung cancer, fatigue has been reported as the most frequent, intense, and limiting symptom (Gift, Jablonski, Stommel, & Given, 2004). Insomnia is a well-known problem among newly diagnosed or recently treated patients with cancer (Savard & Morin, 2001). In addition, pain is a common postoperative phenomenon.

Extent of Symptom Distress Over Time

Levels of symptom distress in the current study's sample generally were low and diminished over the six months of study data. Although the absolute intensity of distress related to fatigue, frequency of pain, insomnia, and outlook decreased over time, the symptoms continued to be experienced widely throughout the study period, each affecting half to two-thirds of the subjects at any time. However, the number of symptoms decreased during the period of the study.

The greatest decrease in total symptom distress occurred from hospital discharge to the three-month measure. Consistent with this research, other studies have shown that symptom distress levels in women with early-stage breast cancer generally are low. For example, a study of women prior to their first chemotherapy treatment showed a mean symptom distress score of 23 with a standard deviation of 4.2 (Boehmke, 2004). The present study of women following initial surgical treatment demonstrated a similar mean symptom distress score at the first measurement point (23.8) but showed greater variability at each of the three data collection points (standard deviations of 6.50, 5.04, and 4.50). Mean symptom distress scores at all three measurement points in this study (23.81, 20.52, 18.60) were higher than the pretreatment score ($\bar{X}$ = 18.10) reported for women older than 55 by Cimprich (1999).

Trends in Significant Correlations Among Symptoms Over Time

A number of significant correlations among symptoms were noted, suggesting a complex network of symptom experience. Similar to this study, other research has demonstrated correlations between severe fatigue and significantly higher levels of depression, pain, and sleep disturbance (Bower et al., 2000). The nature of the complex interactions among these symptoms remains unclear; however, the pattern of the interactions likely varies from one individual to another.

Influence of Patient or Clinical Characteristics

Age and education: The current study found that older subjects reported less total symptom distress at the initial measurement than did younger subjects. Other researchers also have found a negative correlation between age and symptom distress (Degner & Sloan, 1995), with a larger number of older patients reporting less symptom distress. Whether this is an issue of perception or appraisal is unclear. Decreased perception of pain has been noted among older patients with a variety of diagnoses, and research has demonstrated slowing of pain signal processing as well as decreased sensitivity to stimuli (Fass, Pulliam, Johnson, Garewal, & Sampliner, 2000; Moore & Clinch, 2004). Diagnosis of and treatment for breast cancer may have held different meaning and significance for the younger women in this study, contributing to greater expression of symptom distress when compared to the older women. Older women may have had more experience with the healthcare system and thus may have had more opportunities to develop mastery in dealing with healthcare situations. Expectations regarding the likelihood of receiving a diagnosis of cancer might be different in older woman, whereas the diagnosis may be perceived as more shocking or threatening to younger women. Additionally, the extent of surgery might vary with age (e.g., younger women experiencing more aggressive treatment).

The concepts of perception and appraisal may explain the increased severity of symptom distress among more educated women. As in the case of age, education may contribute to a different impression of the meaning and significance of the cancer experience, resulting in more expression of symptom distress.

Marital status and symptom distress: This study found a relationship between marital status and symptom distress

Table 2. Significant Correlations Among Symptoms Over Time

	Symptom Correlates at Three Intervals		
Symptom	**Discharge**	**Three Months Postdischarge**	**Six Months Postdischarge**
Appearance	Concentration, outlook	Appetite, concentration, outlook	Outlook
Appetite	Concentration, insomnia, nausea severity, outlook, pain frequency	Appearance, fatigue, insomnia, nausea frequency, nausea severity, pain frequency	Bowel pattern, concentration, outlook
Bowel pattern	Nausea frequency, nausea severity	Fatigue, nausea severity	Appetite, nausea frequency, outlook
Breathing	–	Pain severity, nausea severity	Insomnia, pain frequency
Concentration	Appearance, appetite, fatigue, insomnia, outlook	Fatigue, outlook	Appetite, outlook, pain frequency
Fatigue	Concentration, insomnia, outlook, pain frequency	Appetite, bowel pattern, concentration, nausea frequency, nausea severity, outlook	Concentration, nausea severity, pain frequency
Insomnia	Appetite, concentration, fatigue, outlook	Appetite, pain severity	Bowel pattern, concentration, fatigue, insomnia, nausea frequency, nausea severity, outlook, pain frequency, pain severity
Nausea frequency	Bowel pattern, nausea severity	Appetite, fatigue, nausea severity, pain frequency	Bowel pattern, insomnia, nausea severity, outlook
Nausea severity	Appetite, bowel pattern, nausea frequency, outlook	Appetite, bowel pattern, breathing, fatigue, nausea frequency	Insomnia, fatigue, nausea frequency
Outlook	Appearance, appetite, concentration, fatigue, insomnia, nausea severity	Concentration, fatigue	Appearance, appetite, bowel pattern, nausea frequency, pain frequency, concentration
Pain frequency	Appetite, fatigue, pain severity	Nausea frequency, pain severity	Concentration, fatigue, insomnia, outlook, pain severity
Pain severity	Pain frequency	Breathing, insomnia, pain frequency	Pain frequency

at three and six months postdischarge. Subjects who were married or living with partners reported more symptom distress than did the remainder of the subjects. The mechanism of this phenomenon is unclear. The presence or absence of significant interpersonal relationships affects the appraisal of life events. Research has demonstrated relationships between symptoms and psychosocial resources, gender, and perceived stress (Leidy, 1990). In addition, Tishelman, Taube, and Sachs (1991) suggested that reinforcement from supportive individuals legitimizes the experience of symptom distress, leading to increased expression of such distress. Sources of informational, tangible, and emotional support have been found to vary with marital status. Married women have identified their husbands as their most frequent providers of informational, tangible, and emotional support. Women who were widowed, divorced, or separated identified their children as their most common emotional support sources, other professionals as their most common informational support providers, and paid helpers as their most common tangible support sources (Friedman, 1993). Marital status might affect the perception of role demand, with the partner either sharing in tasks or requiring that the patient achieves a given level of role function despite surgery. The presence of a partner might affect the patient's own demands for role performance, and the presence of a marital relationship might alter characteristics of a woman's support system. The support system for married women might be restricted to their partner or to similar couples, whereas unmarried women might have a large support system composed of friends or they might be isolated from others. In this research, no relationship was found between symptom distress and whether subjects lived alone or with others.

Other patient and clinical characteristics: The current study did not demonstrate relationships between symptom distress and any other patient characteristics such as income, employment status, religion, or race. No relationships were identified between symptom distress at any time and clinical characteristics, including the number of comorbidities or initial complications and the length of hospitalization. The variance in the sample's data on stage of disease was insufficient to permit any conclusions about its relationship to symptoms.

Comorbidities have been recognized as complicating the treatment of cancer in older adults; however, weaknesses in the development of their conceptualization and measure-

Table 3. Relationship of Marital Status to Symptom Distress

Group Statistics	n	$\bar{X}$	SD	t	df	p	$\bar{X}$ Difference	Lower 95% Confidence Interval	Higher 95% Confidence Interval
Three months postdischarge									
Frequency of nausea									
• Single	26	1.12	0.326	–	–	–	–	–	–
• Married	30	1.50	0.777	–2.473	40.053	0.018	–0.38	–0.70	–0.07
Frequency of pain									
• Single	26	1.62	0.941	–	–	–	–	–	–
• Married	30	2.37	0.964	–2.945	53.210	0.005	–0.75	–1.26	–0.24
Six months postdischarge									
Insomnia									
• Single	25	1.16	0.624	–	–	–	–	–	–
• Married	30	2.03	1.098	–3.697	47.275	0.001	–0.87	–1.35	–0.40
Frequency of pain									
• Single	25	1.56	0.651	–	–	–	–	–	–
• Married	30	2.07	0.980	–2.290	50.659	0.026	–0.51	–0.95	–0.06
Fatigue									
• Single	25	1.72	0.980	–	–	–	–	–	–
• Married	30	2.23	0.774	–2.125	45.306	0.039	–0.51	–1.00	–0.03
Bowel pattern									
• Single	25	1.04	0.200	–	–	–	–	–	–
• Married	30	1.40	0.855	–2.234	32.763	0.032	–0.36	–0.69	–0.03
Concentration									
• Single	25	1.16	0.374	–	–	–	–	–	–
• Married	30	1.57	0.817	–2.436	42.199	0.019	–0.41	–0.74	–0.07
Total symptom distress									
• Single	25	16.60	2.990	–	–	–	–	–	–
• Married	30	20.27	4.890	–3.413	48.917	0.001	–3.67	–5.83	–1.51

ment limit their applicability to research and clinical practice (Satariano & Silliman, 2003). Comorbidity has been related to prognosis (Given, Given, Azzouz, & Stommel, 2001; Satariano & Silliman), but its relationship to symptom experience remains unclear. The number of symptoms, although associated with advanced disease, is thought to affect patient outcomes, including morbidity (Dodd, Miaskowski, et al., 2001). Among older patients with lung cancer, the number of comorbidities has been correlated with symptom severity (Kurtz, Kurtz, Stommel, Given, & Given, 1999). Symptom severity in this setting, in turn, has been correlated with a loss of physical functioning, which is a healthcare outcome (Kurtz et al., 2000).

Predicting symptom distress: Stepwise multiple regression analysis was used to identify variables that predicted significant variance in total symptom distress measures at any point in time. Education accounted for a small but statistically significant amount of the variance in symptom distress at discharge. At three months postdischarge, the only significant predictor was the score for symptom distress at time 1. Likewise, at six months postdischarge, the significant predictor was the previous measure, total symptom distress at time 2. The predictive value of the three-month score for the six-month score was greater in magnitude and significance than the other predictors.

Table 4. Predictors of Total Symptom Distress Score (SDS) at Three Points in Time

Time Period and Predictor	R^2	β	F	p
Discharge				
Education	0.115	0.339	7.165	0.01
Three months postdischarge				
SDS at discharge	0.081	0.284	4.730	0.03
Six months postdischarge				
SDS at three months postdischarge	0.295	0.543	21.750	0.00

Conclusions

Symptom distress declined slowly in the six months following breast cancer surgery. The rate of change was greater from discharge to three months postdischarge than from three to six months postdischarge. Fatigue, frequency of pain, outlook, and insomnia remained primary sources of symptom distress throughout the six months of observation, independent of the length of time since surgery. In this study, younger women and those who were more highly educated experienced more symptom distress early in the postoperative period. Relative rankings for the type of symptom distress remained the same over time. Subjects who reported more symptom distress early in their postoperative course continued to report more symptom distress throughout the six months, whereas those who reported less early symptom distress continued to report less symptom distress throughout the six months. Subjects who were married or living with a partner reported greater distress from selected symptoms at three months and greater total symptom distress at six months postdischarge. Interactions among symptoms are complex and are not well modeled with statistical analysis.

This research is limited because it did not consider the possible effects of postoperative chemotherapy, biotherapy, radiation, or hormone therapy given during the period of the study; however, the study does describe the symptom experience of a group of older women following surgery. This population-based study sheds light on the nursing care needs of a population defined by age rather than by use of adjunct therapies. The current study's research has clinical implications for practicing nurses and theoretical implications for researchers.

Recommendations for Clinical Applications

When caring for older women having breast cancer surgery, nurses should inquire about symptom distress at each encounter and provide appropriate anticipatory guidance. Nurses should expect to find distress related to fatigue, frequency of pain, outlook, and insomnia but appreciate the individuality of the symptom distress experience. The use of a standardized instrument, such as the Symptom Distress Scale, should be accompanied by discussion with the patient. However, nurses should note that allowing or encouraging the expression of symptom distress could result in increased expression of such distress. The increased expression could be incorrectly assumed to reflect an increase in perceived symptom distress when compared to women who are less expressive. In other words, nurses cannot always assume that women who express their distress experience more distress and, conversely, women who do not express distress do not experience distress.

Because breast cancer is so prevalent, patients often are compared to others with the disease. Nurses should look for higher levels of distress in married women, particularly at three months postdischarge. Nurses should anticipate greater symptom distress in patients who are younger and more educated and in those with more severe, earlier symptom distress. Symptoms rarely occur in isolation, and their interactions are complex. Patients with one symptom are likely to have others as well. Patients should be asked about other symptoms and their impression of how the symptoms might be related. Because the greatest change in symptom distress occurs during the first three months after discharge, little change during this period of time is a matter of concern. Nurses should act to minimize symptom distress earlier to minimize it later.

Total symptom distress may be reduced substantially by a well-targeted intervention that decreases distress caused by several symptoms. Topics of interest for clinicians include methods of treating more than one symptom at a time and strategies for establishing symptom treatment priorities. Approaches in which nurses can leverage the side effects of a primary symptom treatment to diminish other symptoms are important to identify. Nurses should consider treatment options for one symptom that may result in the improvement of another symptom. For example, the side effects of one treatment may be seen as therapeutic for another symptom, such as when an analgesic medication that has a side effect of drowsiness is given at bedtime to a patient with pain and insomnia. The patient may experience pain relief while being able to fall asleep easier.

Research Implications

Researchers should study the natural history over time of symptoms relative to each other, clarifying relationships such as interaction and causation. Researchers should seek to identify contextual variables that affect the magnitude of symptoms, individually and in combination, identifying the phenomena that can be manipulated therapeutically to diminish symptom distress. To clarify the role of social support in adaptive responses to illness, the mechanisms of the relationship between marital status and symptom distress should be identified clearly.

Another topic of interest to researchers is the relationship of symptom distress to symptom intensity and the critical attributes of the nurse-patient interaction that mitigate symptom distress. A novel way of understanding patient characteristics might include determination of an individual symptom distress style (i.e., the way a person has exhibited symptom distress in the past and presumably will do so in the future). An individual's personal symptom distress style would be defined by the conditions under which distress has occurred, how it was perceived and expressed, its extent and duration, what relieved it, what exacerbated it, and its effect on the person's functional status. If research establishes that individuals have unique personal symptom distress styles, knowledge of a person's history of symptom distress might be useful in anticipating the experience in a new situation and in planning care.

This article contributes to the body of literature describing patients' experiences with symptoms associated with cancer treatment. The findings suggest a need for strategies based on understanding of the relationship between patient characteristics and symptom distress. Additional work is needed to understand the effect of symptoms, individually and in combination, on patients' survival and quality of life.

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