

# Relief of Symptoms, Side Effects, and Psychological Distress Through Use of Complementary and Alternative Medicine in Women With Breast Cancer

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**Purpose/Objectives:** To identify use of complementary and alternative medicine (CAM) for relief of symptoms and side effects among women diagnosed with breast cancer and to identify demographic and clinical factors associated with the use of CAM in these patients.

**Design:** A descriptive, cross-sectional survey.

**Setting:** Clinics and community groups in the Tampa Bay area and community groups in a rural midwestern area.

**Sample:** A convenience sample of 105 predominantly Caucasian women ( $\bar{X}$  age = 59 years) with a diagnosis of breast cancer was recruited from the Tampa Bay area and a rural midwestern area.

**Methods:** The instrument used to gather the data was the Use of Complementary Therapies Survey. The reasons for choosing 33 individual CAM treatments were tabulated. The frequency of use was calculated according to four reasons: (a) to reduce physical symptoms or side effects, (b) to reduce psychological distress, (c) to gain a feeling of control over treatment, or (d) because of dissatisfaction with traditional medical care. Least-squares regression models were fit to identify independent demographic and clinical predictors of CAM therapy use.

**Main Research Variables:** Use of CAM for relief of physical and psychological distress.

**Findings:** Patients used all categories of CAM therapies to reduce physical symptoms and side effects. The most frequently cited reason for use of CAM was to reduce the symptom of psychological distress, whereas the lowest frequency of CAM use was because of dissatisfaction with traditional medical care. Traditional and ethnic medicines frequently were used to reduce physical symptoms and side effects, followed by diet and nutritional supplements. The most frequently used CAM therapy category cited for gaining a feeling of control over treatment was use of diet and nutritional supplements. Previous chemotherapy and having more than a high school education were associated with more frequent use of diet and nutritional supplements and stress-reducing techniques.

**Conclusions:** Frequency of specific use according to type of CAM was higher and more specific than reported in other studies. Patients who had undergone chemotherapy were most likely to use CAM.

**Implications for Nursing:** Oncology nurses are in a key position to identify which symptoms or side effects patients are experiencing and which CAM therapies may be helpful to relieve patients' symptoms related to treatment and psychological distress related to their cancer.

## Key Points . . .

- Complementary and alternative medicine (CAM) therapies are being used for symptom and side-effect relief, to reduce psychological stress, to gain control over treatment among women, and because of dissatisfaction with traditional medical care.
- Use of diet and nutritional supplements and stress-reducing techniques was associated with previous chemotherapy and having more than a high school education.
- Assessment of reasons for CAM use is an important consideration and may have implications for the cancer treatments patients are receiving.
- Effective implementation of CAM therapies may relieve physical symptoms or psychological distress or give patients a feeling of control over their illness.

ment and the effectiveness of CAM treatments in this context have not been well documented. Complementary medicine is defined as therapy that is used for symptom management and to improve quality of life while patients with cancer are

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Although several studies reporting use of complementary and alternative medicine (CAM) in patients with breast cancer have been carried out in North America and Europe, patterns of use of CAM in symptom manage-

receiving conventional medical treatment (Cassileth, 1999). Alternative therapy is viewed as any therapy other than mainstream or conventional medicine and may include unproven therapies that are promoted for cancer cure, cancer treatment, or symptom management (Cassileth).

Symptom management in the context of cancer care traditionally has focused on use of medical treatment (e.g., medications for relief of symptoms). However, alternative therapies are being used for symptom management by patients with cancer (Cassileth, 1999). Studies indicate that users of CAM in general tend to be younger and of higher social class and are more likely to be women (Adler & Fosket, 1999; Downer et al., 1994; Hauser, 1991; Lerner & Kennedy, 1992).

## **Trends in the Use of Complementary and Alternative Medicine**

Use of alternative therapies increased in the general population from 34% in 1990 to 42% in 1997 (Eisenberg et al., 1998). CAM has been reported to be used by 25%–50% of the general population in industrialized nations (Ernst, Willoughby, & Weihmayer, 1995; Fisher & Ward, 1994; Gray, Tan, Pronk, & O'Connor, 2002; MacLennan, Wilson, & Taylor, 1996). The reasons for increasing use are very complex and include (a) increased options and control (Begbie, Kerestes, & Bell, 1996), (b) alternatives to traditional therapies that do not diminish symptoms or suffering (Fawcett, Sidney, Hanson, & Riley-Lawless, 1994; Furnham & Rawlinson, 1996), and (c) whether patients have a lack of hope for a medical cure (Ernst et al.).

### **Symptom Management and Relief in Breast Cancer**

Women with breast cancer reportedly are using CAM in an attempt to manage symptoms of cancer and cancer treatment. In a review of studies that identified patterns of use of CAM, Crocetti et al. (1998) reported that women used CAM before and after diagnosis for physical distress ( $n = 24$ , 62%), psychological distress ( $n = 8$ , 21%), pressure from relatives ( $n = 2$ , 5%), and other motivations ( $n = 5$ , 13%). Fatigue was reported as a reason for CAM use in a qualitative study by Boon, Brown, Gavin, Kennerd, and Stewart (1999). In a second study by this group, users of CAM (67% of 411 women) believed that CAM would relieve their symptoms (Boon et al., 2000). Although patients used CAM to relieve symptoms of cancer or cancer treatment in a study of 714 breast cancer survivors, the relief of specific symptoms was not reported in the results of the study (Rees et al., 2000). Similarly, in another study, although users of alternative therapies reported negative feelings and more physical symptoms, this study did not report which specific CAM therapies were used for symptom relief (Burstein, Gelber, Guadagnoli, & Weeks, 1999).

Researchers have reported that CAM is being used for general symptoms in patients with cancer; however, specific therapies are not always identified. CAM was reported to be used for "treatment-related medical conditions, such as hair loss, nausea, weakness, and vomiting," although "depression, anxiety, and insomnia associated with having cancer were also bothersome" (Sparber et al., 2000, p. 626). In 226 patients with cancer, Richardson, Sanders, Palmer, Greisinger, and Singletary (2000) found that 44% expected CAM to relieve

their symptoms: The patients were 3.1 times more likely to expect CAM to relieve their symptoms if no evidence of disease was present.

Studies have been conducted to examine the effectiveness of specific alternative therapies for the relief of side effects and symptoms in women with breast cancer. Acupuncture, relaxation, visualization, music therapy, biofeedback, hypnosis, spirituality, and support groups have been tried in an attempt to relieve a variety of side effects and symptoms such as pain, anxiety, depression, nausea, and vomiting. Some of the investigators reported significant differences because of the effects of various CAM therapies (Arathuzik, 1994; Beck, 1991; Dundee, Ghaly, Fitzpatrick, Abram, & Lynch, 1989; Dundee & Yang, 1990; Filshie & Redman, 1985; Halstead & Hull, 2001; Molassiotis, 2000; Richardson et al., 1997; Segar et al., 1998; Sims, 1986; Spiegel & Bloom, 1983).

Menopausal symptoms are reported to be a common complaint of women with breast cancer (Carpenter et al., 1998); however, no studies were found that examined the prevalence of use of specific CAM therapies related to relief of menopausal symptoms. One study examined symptom management for hot flashes used by 74 women; the women reported using vitamins (51%), exercise (23%), nonhormonal medications (16%), diet (15%), and behavioral methods (14%) (Carpenter et al.). Vitamin E was found to decrease hot flashes minimally in breast cancer survivors (Barton et al., 1998). The use of soy supplementation remains controversial, with limited evidence showing that dietary soy relieves hot flashes. In a study that looked at control of hot flashes in 123 women with breast cancer (Van Patten et al., 2002), hot flashes were reduced in the experimental group that received 90 mg of soy daily as well as the placebo control group that received a rice beverage. However, no significant differences in hot flashes existed between the two groups. Similarly, in another study that examined the effects of 150 mg of soy daily in 155 women with breast cancer, soy was no more effective in reducing hot flashes than a placebo (Quella et al., 2000). Although investigators have reported that menopausal symptoms are a significant problem among breast cancer survivors (Carpenter & Andrykowski, 1999; Couzi, Helzlsouer, & Fetting, 1995; Knobf, 2001), prevalence of menopausal symptoms and the most frequently used CAM therapies have not been identified. Taken together, rates of use of specific well-defined CAM therapies and their perceived usefulness for related symptom relief have not been well documented among women with breast cancer.

### **Relief of Psychological Distress**

A limited number of studies have examined psychological symptoms and mental distress and use of alternative therapies or nonproven therapies. Burstein et al. (1999) found that women who reported new use of CAM experienced more depression, less sexual satisfaction, greater fear of recurrence, and more somatic symptoms than women who were either continuous users or nonusers of alternative therapies. In contrast, Alferi, Antoni, Ironson, Kilbourn, and Carver (2001) found that women who had more mood distress and more depression were more likely to use psychotherapy and that those in psychotherapy also experienced more sexual disturbances. In that study, psychotherapy was identified as a CAM therapy. In a comparison study of 55 patients with breast cancer who reported using alternative therapies compared to 62 nonusers,

Moschen et al. (2001) found that patients who used a larger number of CAM therapies adopted a more depressive coping style and appeared to have adjustment problems.

Mood has been examined in women with breast cancer related to the effects of specific interventions, such as support groups, cognitive behavior therapy, guided imagery, nursing care guided by self-regulation theory, and coping skills programs (Classen, Koopman, Angell, & Spiegel, 1996; Johnson, Fieler, Wlasowicz, Mitchell, & Jones, 1997; Richardson et al., 1997; Ritz et al., 2000; Spiegel & Bloom, 1983). Mood disturbance or psychological adjustment and symptom distress have been examined in several studies (Bleiker, Pouwer, van der ploeg, Leer, & Ader, 2000; Cimprich, 1999; Lehto & Cimprich, 1999; Pasacreta, 1997; Taylor et al., 1985); however, little research data at this time have identified relief of distress and associated CAM use among women with breast cancer.

## Sense of Control Over Treatment

Desire for control has been reported as one of the variables consistently linked to CAM use (Balneaves, Kristjanson, & Tatarzyn, 1999; Kelner & Wellman, 1997; Montbriand, 1995, 1997; Truant & Bottorff, 1999; Vincent & Furnham, 1996; Yates et al., 1993). Use of complementary therapies is grounded in a common philosophy and tenet: CAM use usually is focused on health and improving well-being rather than disease, and that use requires active participation in management of the cancer by the patients rather than passive acceptance of treatment (Verhoef, Hagen, Pelletier, & Forsyth, 1999). These two elements are very attractive to patients with cancer and allow for a highly individualized, patient-centered healing process.

Health locus of control in women with breast cancer has been examined extensively (Barroso et al., 2000; Bourjolly, 1999; Bremer, Moore, Bourbon, Hess, & Bremer, 1997; De Brabander, Gertis, & Hellermans, 1997; Smiley, McMillan, Johnson, & Ojeda, 2000). Control has been examined as a coping strategy and as a factor related to treatment, information-seeking behavior, and decision making in patients with breast cancer (Beaver et al., 1996; Classen, Koopman, Angell, & Spiegel, 1996; Erwin, Spatz, Stotts, Hollenberg, & Deloney, 1996; Lavery & Clarke, 1996; Meyer & Mark, 1995; Miller & Champion, 1997; Truant & Bottorff, 1999).

The need for control related to treatment decisions in women with breast cancer has been examined by Balneaves et al. (1999). Results showed that of the 35 women who used CAM (users), 94% preferred a more active and collaborative role in treatment decisions compared to 56% of 17 nonusers or those who preferred only conventional medical treatment. When interviewing 16 women, Truant and Bottorff (1999) found that decision making related to the use of CAM was perceived as a means of regaining control over patients' disease, treatment, and well-being while undergoing traditional cancer treatment.

## Methods

### Study Sample and Design

A descriptive, cross-sectional survey was used to determine the frequency of use of CAM therapies in women and reasons for use with breast cancer. Participants included women with a diagnosis of breast cancer. After the women had been diagnosed, their use of CAM was recalled retrospectively in a clinic or community support group. Women were recruited from

midwestern community groups, breast cancer clinics at H. Lee Moffitt Cancer Center and Research Institute in Tampa, FL, and community groups in Tampa. RNs recruited participants and explained the study to them. Institutional review board approval was attained prior to initiation of the study. Subjects had the option to complete the survey when the nurse explained the study to them or to return it by mail. The survey was anonymous, and the principal investigators maintained data in a locked file. The only inclusion criteria were a diagnosis of breast cancer and that women could read English.

## Instrument

The **Use of Complementary Therapies Survey** (Lengacher, Bennett, Kip, Berarducci, & Cox, 2003) was designed for patients with cancer based on an original study completed using the Complementary Therapy Rating Scale (CTRS) (Bennett & Lengacher, 1999). The original CTRS was modified by adding items based on the classifications of complementary therapies identified by the Office of Alternative Medicine, which was established in 1992 and became the National Center for Complementary and Alternative Medicine (NCCAM) in 1998 (Richardson & White, 2000). According to NCCAM, alternative medical practices can be loosely grouped into six basic categories: diet and nutritional lifestyle changes, herbal medicine, bioelectromagnetic applications, manual healing, mind-body control, and pharmacologic and biologic treatments. Content validity of the CTRS first was determined by a content validity index (CVI) and found to be 0.89. Thirty-two items had a CVI of 1.0, and six items had a CVI of 0.33 and were deleted from the final survey. One item, aromatherapy, was added because it was a CAM therapy recommended by reviewers. Based on the review of the content areas, the 33 items were grouped into three major subscales: diet and nutritional supplements, stress-reducing therapies, and traditional and ethnic medicines. Use of each CAM therapy was rated with a four-point Likert scale (1 = never, 2 = once, 3 = several times, and 4 = on a regular basis), and scores ranged from 33–132 points. For each CAM therapy used, additional information was asked related to reasons for choosing the CAM treatment. Each woman was asked if she used the specific CAM therapy (a) to reduce physical symptoms or side effects, (b) to reduce psychological distress, (c) to gain a feeling of control over treatment, or (d) because of dissatisfaction with traditional medical care. Subjects could check any or all of the items that they believed applied to their situation or leave this question blank if none of the reasons applied.

Reliability coefficient alpha for the entire survey was 0.86. For the individual subscales, alphas were 0.67 for the 6 items in the diet and nutritional supplements subscale, 0.79 for the 11 items in the stress-reducing techniques subscale, and 0.80 for the 16 items in the traditional and ethnic medicines subscale.

Exploratory factor analysis was completed using a principle component analysis. Results identified a two-factor solution with one factor conceptualized as dietary and physical manipulation and the other as stress and anxiety reduction; the remaining items were interpreted as equivocal items (Lengacher et al., 2003). Patient demographics (i.e., age, ethnicity, education, employment status, marital status, religion, income, reported clinical treatments, and family history of breast cancer) also were collected.



### Data Analysis

The reasons for choosing CAM treatments were tabulated for the three survey-defined subscales of CAM therapies (diet and nutritional supplements, stress-reducing techniques, and traditional and ethnic medicines). The frequency of use was calculated according to the reason for use.

In addition, ordinary least-squares regression models were fit to identify independent predictors of CAM therapy use. The three dependent variables consisted of the proportion of participants who used diet and nutritional supplements, stress-reducing techniques, and traditional and ethnic medicines. Predictors were selected by stepwise regression using entry and retainment p values of 0.1. Because of the small sample size, a p value of less than 0.1 was used to identify whether any potential significant effects existed. All analyses were performed with the SAS System, version 8.0 (SAS Institute, Inc., Cary, NC).

### Results

#### Study Participants

Analysis of the demographic characteristics revealed that 105 of the 125 women asked to participate completed the surveys (86% response rate). Demographics are shown in Table 1.

#### Reasons for Use of Complementary and Alternative Therapies

Participants were asked to identify which CAM therapies were used to reduce physical symptoms and side effects (see Table 2). For reduction of physical symptoms and side effects, the most frequently used therapy was traditional and ethnic medicine, followed by use of stress-reducing techniques and diet and nutritional supplements.

Participants also were asked which CAM therapies they used to reduce psychological distress. The most frequently used CAM category for reducing psychological distress was stress-reducing techniques; traditional and ethnic medicine also was used often. The least used category was diet and nutritional supplements.

When asked whether they used CAM therapies for gaining a feeling of control over their treatment, the women's frequency of responses varied for each category. The most frequently used category of CAM therapies for this purpose was diet and nutritional supplements, and the least used category was stress-reducing techniques. Traditional and ethnic medicine also was used often.

Participants were asked whether dissatisfaction with traditional medicine was a reason for choosing a specific therapy. Results showed that the frequency of responses varied for each category, although the frequencies were low. The most frequently reported category of CAM therapies used because of dissatisfaction with traditional medical care was diet and nutritional supplements, and the least used was stress-reducing techniques and traditional and ethnic medicine, with the exception of chiropractic treatment. Twenty percent of the participants indicated that they used chiropractors when they were dissatisfied with traditional medical care.

Overall reasons for CAM use varied. Results showed that the most frequent reason for CAM use was for reduction of the symptom of psychological distress, whereas the least frequent reason for CAM use was dissatisfaction with traditional medical care. Traditional and ethnic medicines were used frequently to

Table 1. Demographic and Clinical History Characteristics of Study Population

Characteristic	n	%
<b>Age (years)</b>		
X = 59	—	—
SD = 12	—	—
<b>Ethnicity</b>		
Caucasian	98	95
African American	4	4
Other	1	1
<b>Education</b>		
Less than high school	3	3
High school	25	25
Some college	27	27
Bachelor's degree	28	28
Master's degree	12	12
Doctoral degree or other advanced degree	5	5
<b>Area of residence</b>		
Urban	19	18
Suburban	44	43
Small town	31	30
Rural	9	9
<b>Work status</b>		
Employed full-time	33	32
Employed part-time	13	12
Unemployed	10	10
Retired	41	39
Disabled	2	2
Other	5	5
<b>Annual household income (\$)</b>		
Less than 25,000	14	15
25,000–50,000	28	30
50,001–75,000	26	28
75,001–100,000	16	16
More than 100,000	11	11
<b>Family history of cancer</b>	44	42
<b>Type of breast cancer</b>		
Ductal	49	57
Lobular	15	17
Unknown	22	26
<b>Clinical history</b>		
Surgery previously received	104	99
Chemotherapy previously received	57	54
Chemotherapy currently being received	10	10
Radiation previously received	55	52
Radiation currently being received	5	5
Other medical treatment previously received	20	19
Other medical treatment currently being received	15	14

N = 105

Note. Data are missing for some variables.

reduce physical symptoms and side effects, followed by diet and nutritional supplements. The most frequently used CAM therapy group related to gaining a feeling of control over treatment was diet and nutritional supplements.

A large percentage of users of stress-reducing techniques had prior experience with the therapies before diagnosis (e.g., prayer or spiritual healing, humor or laughter therapy, music therapy), whereas users of support groups and guided imagery rarely had experience with those techniques before breast cancer diagnosis.

In summary, although all of the CAM therapies were used to reduce physical symptoms and side effects, their use was varied

**Table 2. Reasons for Choosing Complementary and Alternative Medicine (CAM) Treatment According to Type of Therapy Used**

CAM Therapies	n	Reasons for Choosing CAM Treatment				Used This Treatment Before Diagnosis (%)
		Reduce Physical Symptoms and Side Effects (%)	Reduce Psychological Stress (%)	Dissatisfaction With Traditional Medical Care (%)	Gain a Feeling of Control Over Treatment (%)	
Diet and nutritional supplements						
Special diets (e.g., macrobiotic)	12	42	17	8	83	33
Vitamins and minerals (e.g., selenium)	71	38	7	4	61	53
Health foods (e.g., barley grass)	16	50	12	6	56	14
Herbs (e.g., ginkgo biloba)	20	45	30	10	65	35
Antioxidants	39	38	10	—	62	49
Stress-reducing techniques						
Art therapy	11	9	64	—	—	64
Relaxation techniques	41	51	73	—	27	46
Music therapy	30	40	73	3	23	73
Humor or laughter therapy	40	42	72	5	30	76
Guided imagery	30	43	79	—	28	23
Counseling	20	15	80	—	15	53
Support group	50	20	70	2	58	15
Prayer or spiritual healing	59	34	71	2	47	98
Yoga or meditation	18	39	67	6	33	36
Traditional and ethnic medicines						
Massage	26	58	58	—	27	48
Chiropractic	10	70	30	20	30	75
Reflexology	5	40	80	—	60	100
Therapeutic touch	6	50	100	—	83	33
Aromatherapy	7	14	86	—	14	67

N = 105

in each category. The most frequently used CAM therapies to reduce physical symptoms and side effects were health foods, relaxation techniques, massage, chiropractic treatment, and therapeutic touch. Correspondingly, the most frequently used CAM therapies to reduce psychological stress were stress-reducing techniques and traditional and ethnic medicines, with the least used being diet and nutritional supplements. Less-conventional traditional and ethnic medicines, such as reflexology and therapeutic touch, were used by participants along with traditional therapies such as counseling.

### Predictors of Use of Complementary and Alternative Medicine

When the three subscales of CAM therapies were modeled as a continuous variable (percentage of therapies used), results showed that having more than a high school education was associated with more frequent use of stress-reducing techniques. Results also showed that having received chemotherapy previously was associated with more frequent use of diet and nutritional supplements. In addition, a nonsignificant trend suggested that participants who were very satisfied or completely satisfied with their primary physicians were less likely to use stress-reducing techniques. The other sociodemographic characteristics—age, place of employment, and family history of breast cancer—were not associated with any use of CAM therapies.

### Discussion

Few studies were identified in the literature in which the investigators examined psychological symptoms and mental

distress in relationship to use of alternative therapies or nonproven therapies. Burstein et al. (1999) found differences among new users, continuous users, and nonusers with regard to depression, anxiety, and somatic symptoms. Although no difference existed in psychological test results between users and nonusers of CAM therapies before surgery for breast cancer, women who began their initial use of CAM therapy after surgery for breast cancer had greater indicators of psychological stress and poorer quality of life. This raises the possibility that women who start their initial use of CAM after diagnosis and treatment for breast cancer may be undergoing greater distress and are using CAM therapies in an attempt to relieve psychological symptoms or increase mood. Alferi et al. (2001) found that women who used psychotherapy, which they classified as a CAM therapy, also reported more distress, depression, and sexual disturbances than those who did not use psychotherapy. Moschen et al. (2001) found that patients who used a larger number of CAM therapies had a more depressive coping style and that those using many CAM therapies appeared to be struggling with adjustment problems. Healthcare professionals should be aware that women may be using stress-reducing and traditional and ethnic CAM therapies (e.g., art therapy, yoga, support group, prayer or spiritual healing, humor or laughter therapy, music therapy, guided imagery, reflexology, therapeutic touch, counseling) in an attempt to self-treat for stress, depression, or distress.

The current study supported previous research that use of CAM was used as a means to gain control over treatments (Holland, 1982; Zaloznik, 1994). In the current study, the most frequently used class of CAM therapies to gain control

over treatment was diet and nutritional supplements followed by traditional and ethnic medicine techniques such as acupuncture, massage, metabolic therapy, and aromatherapy. These therapies are readily available outside of mainstream medicine. Harpham (2001) reported that patients frequently have a need to “do something” to feel in control of their own destiny. This feeling becomes particularly strong after chemotherapy treatments are completed and the remission period is begun. Watching and waiting for signs of recurrence frequently make patients feel powerless. Use of alternative therapies at this time gives patients a feeling of taking charge, of “doing something” to prevent the cancer from recurring (Harpham). Similarly, Truant and Bottorff (1999) proposed that choosing an alternative therapy may give patients a sense of perceived control. Action helps to reduce feelings of helplessness.

Use of CAM therapies because of dissatisfaction with traditional medical care varied among categories. Some patients may believe that mainstream medical doctors are interested only in treating their disease rather than the whole person or that they do not offer much hope and encouragement. This phenomenon may lead some patients to use CAM. As practitioners develop increasingly sophisticated ways to prevent, diagnose, and treat cancer, they must keep in mind that the key to patient care is caring for the whole patient (Harpham, 2001).

## Study Limitations

This study is based on a relatively small sample of 105 women. With a larger sample size, the study could have more power to detect additional associations between clinical factors and use of CAM therapies. The study population also was primarily Caucasian and did not include many women of low socioeconomic status. Therefore, the results presented may not generalize to many other breast cancer treatment settings. The major limitation of the survey tool was that reasons for CAM therapy use need to be more specific by incorporating additional symptom categories, despite its demonstrated adequate reliability. All symptoms that women encounter during their breast cancer experience, including treatment-related symptoms, should be identified. This will help practitioners to differentiate use of CAM in relationship to disease- and treatment-related symptoms.

## Clinical Implications

The first finding that a large percentage of patients with breast cancer used CAM therapies to reduce physical symptoms and side effects, reduce psychological distress, and gain control over their treatment has implications for treatments being recommended by traditional medicine. The efficacy of traditional treatments for symptoms and problems may be challenged. A critical element now is to identify which symptoms and side effects each woman experiences and then identify which CAM treatment may be efficacious to alleviate each symptom. As patients progress in their treatment and healing, healthcare providers should monitor side effects of traditional treatments and provide information on efficacious CAM therapies.

A second important finding showed that use of specific CAM therapies was a result of dissatisfaction with traditional medical care and that those who used chiropractic treatment were the most dissatisfied with traditional care. Boon et al.

(1999) reported that one reason women with breast cancer used CAM was because of a bad experience with conventional medicine. Clinically, this is important so that physicians attain knowledge on research and treatments related to CAM therapies and breast cancer. Boon et al. (2000) reported that women with breast cancer who used CAM therapies were less likely to believe that conventional treatments would cure their cancer and believed that conventional therapies had unacceptable side effects. These beliefs could have implications for attaining effective conventional treatment and possibly could lead to recurrences. For nurses, this may mean specialized training and education to provide these therapies; however, nurses are in an excellent position to provide education and knowledge related to CAM therapies so patients believe that they are receiving a holistic approach to their diagnosis of breast cancer.

The finding that education level predicted use of CAM therapies has been supported in several studies (Astin, 1998; Boon et al., 2000; Sparber et al., 2000). If women with high educational backgrounds are known to be more frequent users of CAM and tend to be younger, then healthcare professionals could provide CAM education and information that may be related to their treatment.

The finding that prior receipt of chemotherapy predicted use of diet and nutritional supplements may relate to overall disease severity and a concomitant increased perception of susceptibility to cancer recurrence. This finding is important because use of diet and nutritional supplements may affect chemotherapy outcomes. CAM could have beneficial effects or adverse results and could influence the efficacy and safety of chemotherapy given. Currently, the National Institutes of Health is beginning to fund studies that investigate the effects of CAM therapies on various populations, and the National Cancer Institute is focusing on clinical trials involving people with cancer and the use of CAM.

If oncology nurses can determine which CAM therapies are being used and for what reasons, they will be better able to offer appropriate patient education on CAM use and conventional therapies that may help patients cope with cancer and its treatment. Nurses will have to attain more knowledge and training related to use of CAM therapies. Also, once healthcare professionals are viewed to be knowledgeable and if they indicate a willingness to listen to patients about this subject and offer a nonjudgmental attitude, patients may be more willing to talk to them about their use of CAM therapy.

## Conclusions

Although available evidence shows that CAM therapies are used commonly by patients with breast cancer, very few studies have examined the reasons for use. Use of CAM varies widely across the studies published to date. Small study samples and the use of different survey instrumentation undoubtedly contribute to the substantial variation in prevalence estimates across studies. Given the data thus far, use of CAM therapy among patients with breast cancer appears to be common and is increasing in numbers of patients using CAM and in the different types of therapies being used; use of particular therapies also varies depending on the type of symptoms (physical or psychological) a patient is experiencing.

Education and use of chemotherapy appear to be associated with the relative frequency of use of CAM therapies, which may indicate that it was used during chemotherapy to relieve symptoms. Further investigation is needed to identify which CAM therapies are being used and under what circumstances. Documentation of the effectiveness

of these treatments for various symptoms should become a high priority.

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## References

- Adler, S.R., & Fosket, J.R. (1999). Disclosing complementary and alternative medicine use in the medical encounter: A qualitative study in women with breast cancer. *Journal of Family Practice*, 48, 453–458.
- Alferi, S.M., Antoni, M.H., Ironson, G., Kilbourn, K.M., & Carver, C.S. (2001). Factors predicting the use of complementary therapies in a multi-ethnic sample of early-stage breast cancer patients. *Journal of the American Medical Women's Association*, 56, 120–123, 126.
- Arathuzik, D. (1994). Effects of cognitive-behavioral strategies on pain in cancer patients. *Cancer Nursing*, 17, 207–214.
- Astin, J.A. (1998). Why patients use alternative medicine: Results of a national study. *JAMA*, 279, 1548–1553.
- Balneaves, L.G., Kristjanson, L.J., & Tataryn, D. (1999). Beyond convention: Describing complementary therapy use by women living with breast cancer. *Patient Education and Counseling*, 38, 143–153.
- Barroso, J., McMillan, S., Casey, L., Gibson, W., Kaminski, G., & Meyer, J. (2000). Comparison between African-American and white women in their beliefs about breast cancer and their health locus of control. *Cancer Nursing*, 23, 268–276.
- Barton, D.L., Loprinzi, C.L., Quella, S.K., Sloan, J.A., Veeder, M.H., Egner, J.R., et al. (1998). Prospective evaluation of vitamin E for hot flashes in breast cancer survivors. *Journal of Clinical Oncology*, 16, 495–500.
- Beaver, K., Luker, K.A., Owens, R.G., Leinster, S.J., Degner, L.F., & Sloan, J.A. (1996). Treatment decision making in women newly diagnosed with breast cancer. *Cancer Nursing*, 19, 8–19.
- Beck, S.L. (1991). The therapeutic use of music for cancer-related pain. *Oncology Nursing Forum*, 18, 1327–1337.
- Begbie, S.D., Kerestes, Z.L., & Bell, D.R. (1996). Patterns of alternative medicine use by cancer patients. *Medical Journal of Australia*, 165, 545–548.
- Bennett, M., & Lengacher, C. (1999). Use of complementary therapies in a rural cancer population. *Oncology Nursing Forum*, 26, 1287–1294.
- Bleiker, E.M., Pouwer, F., van der ploeg, H.M., Leer, J.W., & Ader, H.J. (2000). Psychological distress two years after diagnosis of breast cancer: Frequency and prediction. *Patient Education and Counseling*, 40, 209–217.
- Boon, H., Brown, J.B., Gavin, A., Kennerd, M.A., & Stewart, M. (1999). Breast cancer survivors' perceptions of complementary/alternative medicine (CAM): Making the decision to use or not to use. *Qualitative Health Research*, 9, 639–653.
- Boon, H., Stewart, M., Kennard, M.A., Gray, R., Sawka, C., Brown, J.B., et al. (2000). Use of complementary/alternative medicine by breast cancer survivors in Ontario: Prevalence and perceptions. *Journal of Clinical Oncology*, 18, 2515–2521.
- Bourjolly, J. (1999). Locus of control among black and white women with breast cancer: A preliminary study. *Journal of Psychosocial Oncology*, 17(1), 21–31.
- Bremer, B.A., Moore, C.T., Bourbon, B.M., Hess, D.R., & Bremer, K.L. (1997). Perceptions of control, physical exercise, and psychological adjustment to breast cancer in South African women. *Annals of Behavioral Medicine*, 19, 51–60.
- Burstein, H.J., Gelber, S., Guadagnoli, E., & Weeks, J.C. (1999). Use of alternative medicine by women with early-stage breast cancer. *New England Journal of Medicine*, 340, 1733–1739.
- Carpenter, J.S., & Andrykowski, M.A. (1999). Menopausal symptoms in breast cancer survivors. *Oncology Nursing Forum*, 26, 1311–1317.
- Carpenter, J.S., Andrykowski, M.A., Cordova, M., Cunningham, L., Studts, J., McGrath, P., et al. (1998). Hot flashes in postmenopausal women treated for breast carcinoma. Prevalence, severity, correlates, management, and relation to quality of life. *Cancer*, 82, 1682–1691.
- Cassileth, B.R. (1999). Complementary and alternative cancer medicine. *Journal of Clinical Oncology*, 17(11, Suppl.), 44–52.
- Cimprich, B. (1999). Pretreatment symptom distress in women newly diagnosed with breast cancer. *Cancer Nursing*, 22, 185–194.
- Classen, C., Koopman, C., Angell, K., & Spiegel, D. (1996). Coping styles associated with psychology adjustment to advanced breast cancer. *Health Psychology*, 15, 434–437.
- Couzi, R.J., Helzlsouer, K.J., & Fetting, J.H. (1995). Prevalence of menopausal symptoms among women with a history of breast cancer and attitudes toward estrogen replacement therapy. *Journal of Clinical Oncology*, 13, 2737–2744.
- Crocetti, E., Crotti, N., Feltrin, A., Ponton, P., Geddes, M., & Buiatti, E. (1998). The use of complementary therapies by breast cancer patients attending conventional treatment. *European Journal of Cancer*, 3, 324–328.
- De Brabander, B., Gertis, P., & Hellermans, J. (1997). Self-reported locus of control is based on feelings of depression as well as on asymmetry in activation of cerebral hemispheres. *Psychological Reports*, 80(3, Pt. 2), 1227–1232.
- Downer, S.M., Cody, M.M., McCluskey, P., Wilson, P.D., Arnott, S.J., Lister, T.A., et al. (1994). Pursuit and practice of complementary therapies by cancer patients receiving conventional treatment. *BMJ*, 309, 86–89.
- Dundee, J.W., Ghaly, R.G., Fitzpatrick, K.T., Abram, W.P., & Lynch, G.A. (1989). Acupuncture prophylaxis of cancer chemotherapy-induced sickness. *Journal of the Royal Society of Medicine*, 82, 268–271.
- Dundee, J.W., & Yang, J. (1990). Prolongation of the antiemetic action of P6 acupuncture by acupressure in patients having cancer chemotherapy. *Journal of the Royal Society of Medicine*, 83, 360–362.
- Eisenberg, D.M., Davis, R.B., Ettner, S.L., Appel, S., Wilkey, S., Van Rompay, M., et al. (1998). Trends in alternative medicine use in the United States, 1990–1997: Results of a follow-up national survey. *JAMA*, 280, 1569–1575.
- Ernst, E., Willoughby, M., & Wehlmayer, T.H. (1995). Nine possible reasons for choosing complementary medicine. *Perfusion*, 11, 356–358.
- Erwin, D.O., Spatz, T.S., Stotts, R.C., Hollenberg, J.A., & Deloney, L.A. (1996). Increasing mammography and breast self-examination in African American women using the Witness Project Model. *Journal of Cancer Education*, 11, 210–215.
- Fawcett, J., Sidney, J.S., Hanson, M.J., & Riley-Lawless, K. (1994). Use of alternative health therapies by people with multiple sclerosis: An exploratory study. *Holistic Nursing Practice*, 8(2), 36–42.
- Filshie, J., & Redman, D. (1985). Acupuncture and malignant pain problems. *European Journal of Surgical Oncology*, 11, 389–394.
- Fisher, P., & Ward, A. (1994). Complementary medicine in Europe. *BMJ*, 309, 107–111.
- Furnham, A., & Rawlinson, A. (1996). Beliefs about the efficacy of complementary medicine: A vignette study. *Complementary Therapies in Medicine*, 4, 85–89.
- Gray, C.M., Tan, A.W., Pronk, N.P., & O'Connor, P.J. (2002). Complementary and alternative medicine use among health plan members. A cross-sectional survey. *Effective Clinical Practice*, 5, 17–22.
- Halstead, M.T., & Hull, M. (2001). Struggling with paradoxes: The process of spiritual development in women with cancer. *Oncology Nursing Forum*, 28, 1534–1544.
- Harpham, W.S. (2001). Alternative therapies for curing cancer: What do patients want? What do patients need? *CA: A Cancer Journal for Clinicians*, 51, 131–136.
- Hauser, S.P. (1991). Unproven methods in oncology. *European Journal of Cancer*, 27, 1549–1551.



- Holland, J.C. (1982). Why patients seek unproven cancer remedies: A psychological perspective. *CA: A Cancer Journal for Clinicians*, 32, 10–14.
- Johnson, J.E., Fieler, V.K., Wlasowicz, G.S., Mitchell, M.L., & Jones, L.S. (1997). The effects of nursing care guided by self-regulation theory on coping with radiation therapy. *Oncology Nursing Forum*, 24, 1041–1050.
- Kelner, M., & Wellman, B. (1997). Who seeks alternative health care? A profile of the users of five modes of treatment. *Journal of Alternative and Complementary Medicine*, 3, 127–140.
- Knobf, M.T. (2001). The menopausal symptom experience in young mid-life women with breast cancer. *Cancer Nursing*, 24, 201–210.
- Lavery, J.F., & Clarke, V.A. (1996). Causal attributions, coping strategies, and adjustment to breast cancer. *Cancer Nursing*, 19, 20–28.
- Lehto, R., & Cimprich, B. (1999). Anxiety and directed attention in women awaiting breast cancer surgery. *Oncology Nursing Forum*, 26, 767–772.
- Lengacher, C.A., Bennett, M.P., Kip, K.E., Berarducci, A., & Cox, C.E. (2003). Design and testing of the use of a complementary and alternative therapies survey in women with breast cancer. *Oncology Nursing Forum*, 30, 811–821.
- Lerner, I.J., & Kennedy, B.J. (1992). The prevalence of questionable methods of cancer treatment in the United States. *CA: A Cancer Journal for Clinicians*, 42, 181–191.
- MacLennan, A.H., Wilson, D.H., & Taylor, A.W. (1996). Prevalence and cost of alternative medicine in Australia. *Lancet*, 347, 569–573.
- Meyer, T.J., & Mark, M.M. (1995). Effects of psychosocial interventions with adult cancer patients: A meta-analysis of randomized experiments. *Health Psychology*, 14, 101–108.
- Miller, A., & Champion, V. (1997). Attitudes about breast cancer and mammography: Racial, income, and educational differences. *Women and Health*, 26(1), 41–63.
- Molassiotis, A. (2000). A pilot study of the use of progressive muscle relaxation training in the management of post-chemotherapy nausea and vomiting. *European Journal of Cancer Care*, 9, 230–234.
- Montbriand, M.J. (1995). Decision tree model describing alternate health care choices made by oncology patients. *Cancer Nursing*, 18, 104–117.
- Montbriand, M.J. (1997). The 1996 Schering Lecture. An inquiry into the experiences of oncology patients who leave biomedicine to use alternative therapies. *Canadian Oncology Nursing Journal*, 7, 6–13.
- Moschen, R., Kemmler, G., Schweigkofler, H., Holzner, B., Dunser, M., Richter, R., et al. (2001). Use of alternative/complementary therapy in breast cancer patients—A psychological perspective. *Supportive Care in Cancer*, 9, 267–274.
- Pasacreta, J.V. (1997). Depressive phenomena, physical symptom distress, and functional status among women with breast cancer. *Nursing Research*, 46, 214–221.
- Quella, S.K., Loprinzi, C.L., Barton, D.L., Knost, J.A., Sloan, J.A., LaVasseur, B.I., et al. (2000). Evaluation of soy phytoestrogens for the treatment of hot flashes in breast cancer survivors: A North Central Cancer Treatment Group Trial. *Journal of Clinical Oncology*, 18, 1068–1074.
- Rees, R.W., Feigel, I., Vickers, A., Zollman, C., McGurk, R., & Smith, C. (2000). Prevalence of complementary therapy use by women with breast cancer. A population-based survey. *European Journal of Cancer*, 36, 1359–1364.
- Richardson, M.A., Post-White, J., Grimm, E.A., Moye, L.A., Singletary, S.E., & Justice, B. (1997). Coping, life attitudes, and immune responses to imagery and group support after breast cancer treatment. *Alternative Therapies in Health and Medicine*, 3(5), 62–70.
- Richardson, M.A., Sanders, T., Palmer, J.L., Greisinger, A., & Singletary, S.E. (2000). Complementary/alternative medicine use in a comprehensive cancer center and the implications for oncology. *Journal of Clinical Oncology*, 18, 2505–2514.
- Richardson, M.A., & White, J.D. (2000). Complementary/alternative medicine and cancer research: A national initiative. *Cancer Practice*, 8(1), 45–48.
- Ritz, L.J., Nissen, M.J., Swenson, K.K., Farrell, J.B., Sperduto, P.W., Sladek, M.L., et al. (2000). Effects of advanced nursing care on quality of life and cost outcomes of women diagnosed with breast cancer. *Oncology Nursing Forum*, 27, 923–932.
- Segar, M.L., Katch, V.L., Roth, R.S., Garcia, A.W., Portner, T.I., Glickman, S.G., et al. (1998). The effect of aerobic exercise on self-esteem and depressive and anxiety symptoms among breast cancer survivors. *Oncology Nursing Forum*, 25, 107–113.
- Sims, S. (1986). Slow stroke back massage for cancer patients. *Nursing Times*, 82, 47–50.
- Smiley, M.R., McMillan, S.C., Johnson, S., & Ojeda, M. (2000). Comparison of Florida Hispanic and non-Hispanic Caucasian women in their health beliefs related to breast cancer and health locus of control. *Oncology Nursing Forum*, 27, 975–984.
- Sparber, A., Bauer, L., Curt, G., Eisenberg, D., Levin, T., Parks, S., et al. (2000). Use of complementary medicine by adult patients participating in cancer clinical trials. *Oncology Nursing Forum*, 27, 623–630.
- Spiegel, D., & Bloom, J.R. (1983). Group therapy and hypnosis reduce metastatic breast carcinoma pain. *Psychosomatic Medicine*, 45, 333–339.
- Taylor, S.E., Lichtman, R.R., Wood, J.V., Bluming, A.Z., Dosik, G.M., & Leibowitz, R.L. (1985). Illness-related and treatment-related factors in psychological adjustment to breast cancer. *Cancer*, 55, 2506–2513.
- Truant, T., & Bottorff, J. (1999). Decision making related to complementary therapies: A process of regaining control. *Patient Education and Counseling*, 38, 131–142.
- Van Patten, C.L., Olivetto, I.A., Chambers, G.K., Gelmon, K.A., Hislop, T.G., Templeton, E., et al. (2002). Effects of soy phytoestrogens on hot flashes in postmenopausal women with breast cancer: A randomized, controlled clinical trial. *Journal of Clinical Oncology*, 20, 1449–1455.
- Verhoef, M.J., Hagen, N., Pelletier, G., & Forsyth, P. (1999). Alternative therapy use in neurologic diseases. Use in brain tumor patients. *Neurology*, 52, 617–622.
- Vincent, C., & Furnham, A. (1996). Why do patients turn to complementary medicine? An empirical study. *British Journal of Clinical Psychology*, 35(Pt. 1), 37–48.
- Yates, P., Beadle, G., Clavarino, A., Najman, J., Thomson, D., Williams, G., et al. (1993). Patients with terminal cancer who use alternative therapies: Their beliefs and practices. *Sociology of Health and Illness*, 15, 199–216.
- Zaloznik, A. (1994). Unproven (unorthodox) cancer treatments: A guide for healthcare professionals. *Cancer Practice*, 2, 19–24.