

Complementary and Alternative Medicine: Oncology Nurses' Experiences, Educational Interests, and Resources

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Purpose/Objectives: To describe oncology nurses' experiences with patients communicating interest in or use of complementary and alternative medicine (CAM) therapies along with oncology nurses' CAM resources and educational interests.

Design: National mailed survey.

Setting: A national medical center and research institute.

Sample: A random sample of 850 Oncology Nursing Society (ONS) members who are RNs involved in direct patient care.

Methods: Respondents completed a demographic questionnaire and the Nurse Complementary and Alternative Medicine Knowledge and Attitude Survey. Initial analysis compared the demographics of the sample to the ONS membership. Descriptive analysis was used to further describe nurses' experiences with patients communicating interest in or use of CAM, nurses' interest in CAM education, and nurses' use of CAM resources.

Main Research Variables: Experiences, resources, interests, and CAM therapies.

Findings: Oncology nurses reported their experiences with patients who communicated interest in or use of CAM therapies. Respondents demonstrated considerable interest in learning more about specific CAM therapies and used a variety of resources to find information on CAM therapies.

Conclusions: Assessing oncology nurses' experiences, resources used, and interest in learning about CAM therapies is the first step in determining the learning needs of oncology nurses in the direct patient care environment. The next step is to obtain baseline information on oncology nurses' CAM knowledge and attitudes for developing and providing appropriate education. CAM education will provide nurses with knowledge to support and advocate for their patients.

Implications for Nursing: Oncology nurses are the bridge to help patients safely integrate evidence-based CAM therapies into conventional treatment.

Key Points . . .

- Reports of complementary and alternative medicine (CAM) therapy use by patients with cancer range from 28%–85%, yet surveys indicate patient reluctance to initiate communication regarding CAM with healthcare professionals.
- Nurses reported that patients rarely asked or occasionally disclosed using CAM therapies. CAM topics that were discussed tended to be the more conservative and well-known therapies, such as prayer, vitamins, and special diets.
- Nurses used an average of four different resources to find CAM therapy information. Books, professional journals, and patients were the top three resources of CAM information.
- Nurses indicated naturopathic medicine, ayurveda medicine, and traditional Chinese medicine to be their prominent educational interests, whereas dance therapy was the least.

mentary medicine denotes therapies used in conjunction with conventional medicine, whereas **alternative** medicine denotes therapies used instead of conventional medicine. The most recent phrase to appear is **integrative** medicine, which is a combination of conventional medicine and complementary and alternative therapies that have a strong scientific base for use and safety (NCCAM).

Researchers have reported CAM use among many patient populations (Baldwin, Long, Kroesen, Brooks, & Bell, 2002; Hsiao et al., 2003; Jordan et al., 2000; Keenan et al., 2003; Loman, 2003; Poss, Jezewski, & Stuart, 2003; Sirven et al., 2003; Wang, Caldwell-Andrews, & Kain, 2003) as well as the potential harmful effects that may occur inadvertently

Complementary and alternative medicine (CAM) is an encompassing phrase that describes a multitude of modalities used to promote health, prevent disease, assist healing, and support rehabilitation. The National Center for Complementary and Alternative Medicine (NCCAM, 2001) defined CAM as "a group of diverse medical and health care systems, practices, and products that are not presently considered to be part of conventional medicine." **Conventional** medicine is defined as "medicine as practiced by holders of MD [medical doctor] or DO [doctor of osteopathy] degrees and by their allied health professionals, such as physical therapists, psychologists, and registered nurses." **Comple-**

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Digital Object Identifier: 10.1188/06.ONF.581-588

to patients using combinations of conventional and CAM therapies (Ang-Lee, Moss, & Yuan, 2001; Norred, 2002; Tsen, Segal, Pothier, & Bader, 2000). However, communication patterns between healthcare providers and patients are not well documented in the literature. Many studies describe the CAM therapies used by patients and reasons for patients not disclosing CAM use to their physicians (Ashikaga, Bosompra, O'Brien, & Nelson, 2002; Eisenberg et al., 2001; Navo et al., 2004; Rao et al., 1999), but none was found that directly asked nurses to describe how often their patients communicated interest in or used specific CAM therapies. The survey described in this article sought to identify reported patterns of CAM communication between oncology nurses and patients along with nurses' educational interests in CAM and the informational resources employed by oncology nurses.

Background Literature

CAM use by patients with cancer has been reported in multiple studies. In a review of the literature (Ernst & Cassileth, 1998), the prevalence of CAM use was 31%. Subsequent studies reported CAM therapy use ranged from 28%–85% among patients with cancer (see Figure 1). CAM communication patterns between physicians and their patients, as viewed by patients, also have been documented. Eisenberg et al. (2001) found that 63% of respondents (N = 831) did not disclose at least one CAM therapy to their physicians. Richardson, Sanders, Palmer, Greisinger, and Singletary (2000) surveyed 453 patients at a comprehensive cancer center and found that 61% did not disclose their use of CAM therapies. Sparber et al. (2000) noted that 57% of patients (N = 100) involved in clinical trials reported that their physicians did not inquire about their use of CAM. Coss, McGrath, and Caggiano (1998) indicated that 33% of the patients surveyed (N = 503) believed that their physicians

would not approve of CAM therapies. Edgar, Remmer, Rosberger, and Fournier (2000) found that 80% of patients (N = 156) were unaware of their physicians' beliefs regarding CAM. When patients were asked where they learned about CAM resources, the majority reported that information was obtained from family and friends (Boon et al., 2000; Edgar et al.; Kelly et al., 2000).

To assess the state of oncology nurses' experiences with patients communicating interest in or use of CAM therapies, as well as oncology nurses' CAM resources and educational interest, published literature was sought from 1998–2002 via the CINAHL®, PsycINFO, and MEDLINE® computerized databases. The key words used were *nursing* and *complementary therapies*. Thirteen studies were found with varying degrees of information regarding experiences, interests, and resources used (see Table 1). In the studies, the most common themes identified were the (a) need for CAM education, (b) predominantly positive attitudes of the nurses toward CAM therapy use in relation to their professional nursing role, (c) importance of open communication among nurses and patients regarding CAM therapies, (d) need for reputable CAM information and referral sources, and (e) need for nursing role definition regarding CAM therapies. The findings reveal that nurses believe communicating with patients about CAM therapies is important, gaps in CAM knowledge are prevalent, high interest in CAM education exists, role uncertainty is common, and most nurses welcome the integration of CAM therapies into their professional practice.

Although policy and consensus have recommended that healthcare providers be educated in CAM therapies (Hospice and Palliative Nurses Association, 2002; Oncology Nursing Society [ONS], 2002; White House Commission on Complementary and Alternative Medicine Policy, 2002), no studies were found in the literature that assessed the level of education or training required by nurses. The descriptive study discussed in this article will serve to establish a foundation to identify CAM learning and interest needs of oncology nurses involved in direct patient care. The purpose of the current study was to describe oncology nurses' CAM communication experiences, educational interests, and resources used in professional practice.

Methods

Sample

ONS members who were RNs involved in direct patient care (N = 15,289 in July 2002) were the identified target population. Several factors were used to determine the size of the sample needed. A 5% randomized sample would provide a response from 764 nurses, which is sufficient to be representative of the population (Burns & Groves, 1993). In addition, the sample size was based on response rates reported by other researchers surveying ONS members. Young, Volker, Rieger, and Thorpe (1993) reported a 61% response rate; Matzo and Emanuel (1997) reported a 73% response rate; and Ferrell, Virani, Grant, Coyne, and Uman (2000) reported a 40% response rate. At a conservative 40% response rate, a mailing to 1,910 members was needed to obtain a sample of 764. That sample size was sufficient to provide at least five respondents for each question, which is ample when conducting psychometric analysis (Ferketich, 1991).

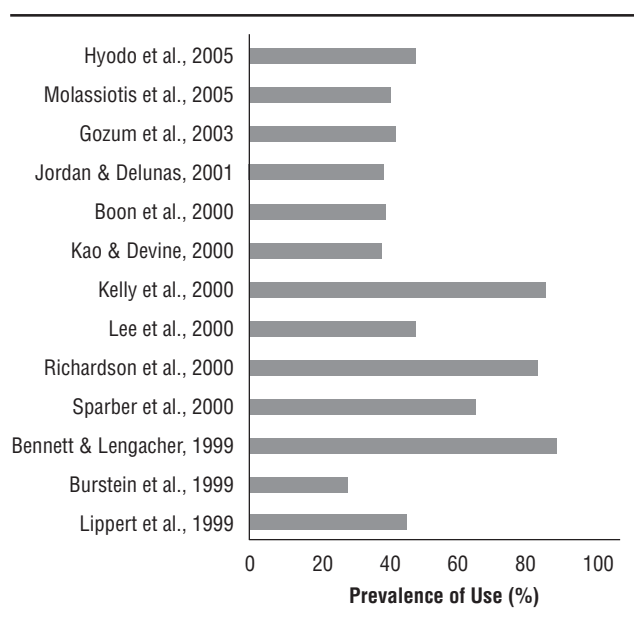


Figure 1. Chronologic Literature Review Assessing the Prevalence of Complementary and Alternative Medicine Use in Patients With Cancer

Table 1. Studies Assessing Oncology Nurses' Experiences With Complementary and Alternative Medicine

Study	Sample	Concentration	Conclusion
Allaire et al., 2000	82 American certified nurse midwives	Knowledge and attitude	Open complementary and alternative medicine (CAM) communication existed between patients and certified nurse midwives.
Baugniet et al., 2000	422 Canadian nursing, medical, physiotherapy, occupational, and pharmacy students	Knowledge and attitude	CAM is useful.
DeKeyser et al., 2001	369 Israeli staff nurses	Knowledge and attitude	No CAM communication existed between patients and staff nurses.
Fitch, Gray, Greenberg, Douglas, et al., 1999	48 Canadian staff nurses	Knowledge and attitude	Open CAM communication is important.
Fitch, Gray, Greenberg, Labrecque, et al., 1999	20 Canadian staff oncology nurses	Knowledge and attitude	CAM integration is important.
Hayes & Alexander, 2000	202 American nurse practitioners	Knowledge and attitude	Nurse practitioners but not physicians communicated with patients about CAM.
King et al., 1999	467 American nurses	Knowledge and attitude	CAM communication increased with nurses' knowledge.
Kreitzer et al., 2002	627 medical, pharmacy, and nursing faculty and students	Knowledge and attitude	CAM communication is important.
Peltzer & Khoza, 2002	84 South African nurse practitioners	Knowledge and attitude	CAM is perceived positively.
Salmenpera et al., 1998	92 Finnish staff nurses	Knowledge and attitude	CAM knowledge is required when communicating with patients.
Sohn & Loveland Cook, 2002	151 American nurse practitioners	Knowledge and attitude	Nurse practitioners were interested in CAM.
Taylor et al., 1998	142 staff nurses, physicians, nurse practitioners, and other healthcare providers	Personal use and recommendations	CAM was recommended frequently.
Wilkinson & Simpson, 2001	271 Australian nursing, pharmacy, and biomedical students	Personal use of CAM	No CAM communication occurred with healthcare providers.

Procedures

ONS provided the mailing labels of the randomized national sample. The first mailing of 1,910 self-administered surveys was sent to the nurses' homes from August–September 2003. Reminder postcards were sent in October. In total, 429 surveys were returned. A second mailing of 1,727 surveys was sent in December 2003. Reminder postcards were sent in January 2004, with a total of 436 surveys returned. The combined response rate was 24%, with 865 surveys returned; 850 surveys were eligible and included in the descriptive data analysis.

Instruments

Mailed packets included an invitation to participate, a demographic questionnaire, the **Nurse Complementary and Alternative Medicine Knowledge and Attitude Survey**, and a self-addressed, stamped envelope for anonymous return of completed data. The authors developed the survey after several unsuccessful searches in the literature for a nurse-specific survey measuring CAM knowledge and attitudes. Using three sources (Decker, 1999; Hayes & Alexander, 2000; NCCAM, 2001), the authors developed the survey, which sought to identify oncology nurses' knowledge, attitudes, resources, communication experiences, and educational interest in CAM therapies. Initial pilot testing was carried out using an expert council of two nurse research scientists and two senior research specialists from a National Cancer Institute–designated comprehensive cancer center. Pilot test directions included seeking clarification for any specific questions, identifying the length of time required

to complete the survey, and requesting recommendations regarding content and format. Content validity was established further with a group of community hospital–based nononcology nurses, a panel of oncology nurse researchers, two doctorally prepared nursing researchers, two psychologists, two nurse research scientists from a National Cancer Institute–designated comprehensive cancer center, and a CAM advanced practice nurse. The researchers compiled and evaluated the panel's comments and made revisions. The final version of the survey consisted of two sections. The first section contains questions that assess CAM knowledge, attitude, and resources used. The second section contains questions that assess nurses' interest in learning more about specific CAM therapies, as well as their experiences with patients who request information about or disclose use of specific CAM therapies. After institutional review board approval, the Nurse CAM Knowledge and Attitude Survey was ready for validation testing.

Results

Demographic data presents characteristics of the survey respondents (see Table 2). The demographic characteristics of the sample were compared to the ONS total membership to ensure that it was representative. Analysis of variance showed no differences between the sample and total ONS membership in relation to years in nursing, work setting, present position, and specialty area. Differences were found between the sample and total ONS membership regarding highest degree completed (respondents had a higher percentage of baccalaureate-prepared nurses) and years in oncology nursing

Table 2. Demographic Characteristics

Characteristic	n	%
Age (years)		
\bar{X} = 45	—	—
Range = 22–70	—	—
Gender		
Female	814	96
Male	32	4
No response	4	1
Ethnicity		
Caucasian	767	90
Asian	31	4
African American	19	2
Hispanic	14	2
Native American	3	1
Other	9	1
No response	7	1
Educational degree		
Bachelor's	418	49
Associate's	180	21
Master's	128	15
Diploma	106	12
Doctorate	1	1
No response	17	2
Years in nursing		
\bar{X} = 19	—	—
Range = 1–46	—	—
Years in oncology		
\bar{X} = 12	—	—
Range = 0–38	—	—
Primary position		
Staff nurse	667	79
Clinical nurse specialist	57	6
Nurse practitioner	15	2
Nurse manager or coordinator	13	2
Educator	5	1
Researcher	5	1
Case manager	3	1
Multiple positions	80	8
No response	5	1
Patient population		
Adult	741	87
Adult and pediatric	92	11
Pediatric	12	1
None	—	—
No response	5	1
Primary work setting		
Inpatient oncology specialty	638	75
Multiple work setting	152	18
Inpatient medical-surgical unit	35	4
Inpatient intensive care unit	9	1
Outpatient home care	8	1
Corporate or industry	3	1
No response	5	1
Primary specialty		
Multiple	519	61
Medical oncology	201	24
Radiation oncology	66	8
Bone marrow transplantation	31	4
Surgical oncology	21	3
No response	12	1

N = 850

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

(respondents had a greater percentage of those with more than 11 years of oncology experience). Thus, the sample represents a group of nurses with more education at the baccalaureate level and more oncology nursing experience than the general ONS membership.

Nurses' mean age was 45 years, with a range of 22–70 years. The mean years in nursing were 19, with a range of 1–46 years. The mean years in oncology nursing were 12, with a range of 0–38 years. The primary area of practice was on an inpatient oncology unit (75%) as a staff nurse (79%). The predominant patient population was adult (87%). The predominant level of education was a baccalaureate degree (49%), followed by an associate degree (21%).

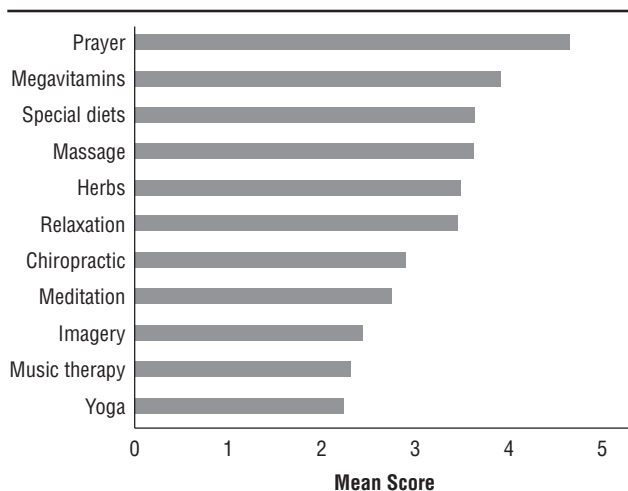
Information and results regarding oncology nurses' knowledge and attitudes contained in the first section of the survey, along with the development and psychometric testing of the survey, will be published separately. This article will focus on the oncology nurses' experiences with patients communicating CAM interest or CAM use, the nurses' learning interests about specific CAM therapies, and the resources that nurses use to find CAM information.

Figures 2 and 3 present a summary of respondents' experiences with patients asking about or disclosing the use of CAM therapies. A list of specific CAM therapies was provided to assist the nurses in answering two questions. The first question posed was, "In the last year, how often has a patient asked me about this CAM therapy?" They were asked to circle a corresponding number on a scale ranging from 0 (rarely ask) to 10 (always ask). The number of responses to each item ranged from 763–835, out of a possible 850. The three CAM therapies that patients asked about most frequently included prayer (\bar{X} = 4.57, SD = 3.44), megavitamins (\bar{X} = 3.96, SD = 3.49), and special diets (\bar{X} = 3.69, SD = 3.39).

The same list of specific CAM therapies was used to answer the second question: "In the last year, how often has a patient disclosed using this CAM therapy to me?" Participants were asked to circle the corresponding number on a scale from 0 (rarely disclose) to 10 (always disclose). The number of responses to each item ranged from 735–811, out of a possible 850. The three CAM therapies that patients disclosed using more frequently were prayer (\bar{X} = 6.12, SD = 3.24), massage (\bar{X} = 4.10, SD = 3.29), and relaxation (\bar{X} = 4.03, SD = 3.28).

Figure 4 presents a summary of the respondents' learning interests regarding specific CAM therapies. The results were obtained by providing the same list of CAM therapies to respondents and asking them to reply to the statement "I am interested in learning more about this CAM therapy." The respondents were asked to check a box if the answer was yes and to leave the box blank if the answer was no. The number of responses ranged from 781–843, out of a possible 850. The three CAM therapies that respondents were most interested in learning more about were listed under alternative medical systems and were naturopathic medicine (49%), traditional Chinese medicine (44%), and ayurveda medicine (41%).

Figure 5 presents a summary of the respondents' resources used for CAM information that was elicited by instructing respondents to "circle all the resources you use or have used to find information on CAM therapies." The respondents were given 17 options along with an opportunity to fill in the blank with other resources not provided in the list. The top three resources used were books (13%), professional journals (12%),



Note. The scale ranged from 0 (rarely asked) to 10 (always asked).

Note. The following therapies had mean scores that were less than 2: acupuncture, aromatherapy, shark cartilage, therapeutic touch, naturopathic medicine, acupressure, art therapy, biofeedback, osteopathic manipulation, reflexology, magnets, Chinese medicine, hypnosis, Reiki, tai chi, chelation therapy, light and color therapy, dance therapy, ayurveda medicine, qi gong, bovine colostrums, and hoxsey therapy.

Figure 2. Mean Scores for Oncology Nurses' Experiences With Patients Asking About Complementary and Alternative Medicine Therapies

and patients (11%). The resources least used were formal training (2%), advertisements (2%), and psychologists (1%).

Discussion

When questioned about which CAM therapies patients asked about most frequently, oncology nurses cited prayer. Some CAM therapies such as meditation, imagery, music therapy, and yoga had low-level mean scores (2.0–3.96), but the majority had the lowest level mean scores (1.75 or less), indicating that patients only sought information from nurses occasionally and, for some modalities, such as qi gong and tai chi, almost never. Responses suggest that patient-initiated conversations are rare regarding seeking information about CAM therapies and therefore must be prompted by oncology nurses. Doing so would ensure that patients receive proper information as they decide which CAM therapy works best for them in conjunction with their conventional treatments (Wilkinson & Simpson, 2001).

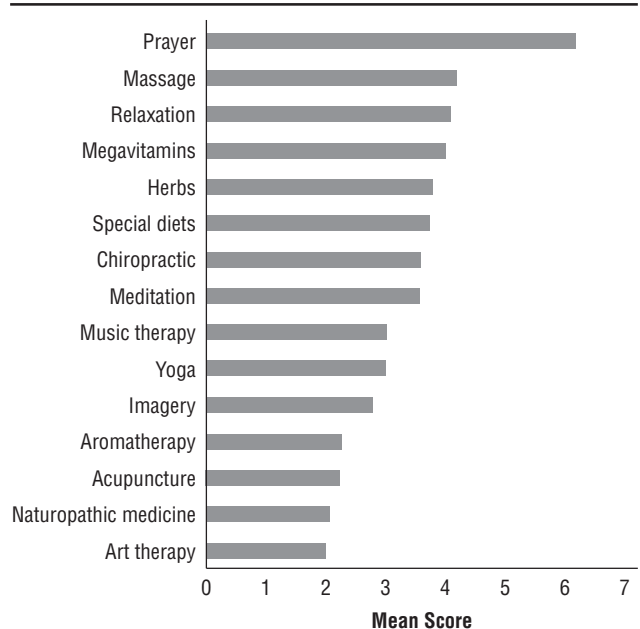
When questioned about which CAM therapies patients disclosed using most frequently, oncology nurses again cited prayer. Other CAM therapies such as herbs, special diets, chiropractors, meditation, music therapy, and yoga had low-level mean scores (3.0–3.70), whereas the lowest scoring CAM therapies, such as acupuncture, naturopathic medicine, shark cartilage, and ayurveda medicine, had mean scores of 2.77 or less. When examining the mean scores given by oncology nurses for the CAM therapies that patients ask about or disclose using, the highest scoring therapy in both categories was prayer. This may indicate that patients are uncomfortable asking about or disclosing the use of potentially controversial treatments and, therefore, only seek or disclose information

about modalities that they believe are acceptable to nurses (Hsiao et al., 2003).

Most oncology nurses demonstrated varying interest and readiness in learning about specific CAM therapies, which has been documented in previous studies (DeKeyser, Bar Cohen, & Wagner, 2001; Fitch, Gray, Greenberg, Labrecque, & Douglas, 1999; Hayes & Alexander, 2000). Although some nurses did not want training to perform CAM therapies, they reported wanting to learn more about CAM therapies so that they could communicate confidently and accurately with their patients about them (Halcon, Chlan, Kreitzer, & Leonard, 2003).

Oncology nurses used a variety of resources to find information about CAM therapies. In particular, many nurses referred to their patients (11%), as well as professional journals (12%) and books (13%). The use of patients as a source of CAM information may reflect an open and trusting relationship, but it also may reflect nurses' inability to find a variety of CAM resources that are scientific in nature. In a study by Wilkinson and Simpson (2001), nursing students typically obtained CAM information from friends, family, and magazines and rarely used scientifically sound sources such as scientific literature and other qualified healthcare professionals.

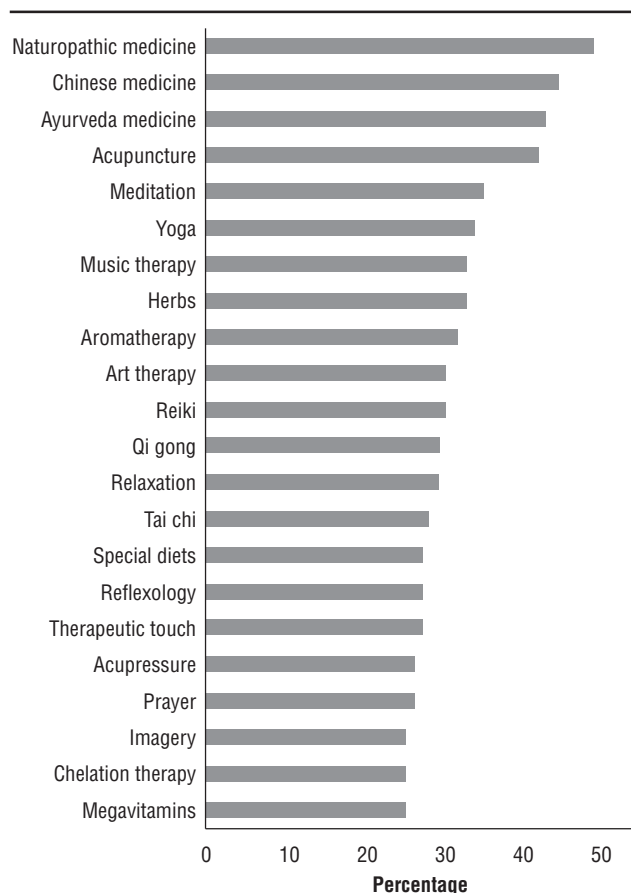
As documented in various studies (Boon et al., 2000; Edgar et al., 2000; Kelly et al., 2000; Molassiotis et al., 2005; Warlick et al., 1999), patients referred to family, friends, and the



Note. The scale ranged from 0 (rarely disclosed) to 10 (always disclosed).

Note. The following therapies had mean scores that were less than 2: shark cartilage, therapeutic touch, acupressure, osteopathic manipulation, biofeedback, magnets, Chinese medicine, reflexology, Reiki, hypnosis, tai chi, chelation therapy, dance therapy, light and color therapy, qi gong, ayurveda medicine, bovine colostrums, and hoxsey therapy.

Figure 3. Mean Scores for Oncology Nurses' Experiences With Patients Disclosing Their Use of Complementary and Alternative Medicine Therapies



Note. The following therapies had scores that were less than 25%: light and color therapy, hoxsey therapy, massage, magnets, bovine colostrums, hypnosis, shark cartilage, osteopathic manipulation, and dance therapy.

Figure 4. Percentages of Nurses Interested in Specific Complementary and Alternative Medicine Therapies

media for CAM information. As a result, many patients with cancer are vulnerable to misleading advertisements, miracle cures, and well-meaning family and friends. Nurses must provide support and education to patients who may not have complete understanding of a CAM therapy and its potential side effects when combined with conventional treatment. As patient advocates, nurses need to assist patients in making evidence-based decisions for the use of CAM therapies; therefore, without exception, nurses must be properly educated in CAM therapies.

The main strengths of the current study are its use of a randomized national sample, the use of a nurse-specific survey, and sample size. The study's main limitations were the use of a newly developed survey, the dependence on self-report of respondents, and the low response rate.

Implications for Nursing

When helping patients decide which CAM therapies to use or how to evaluate the safety and efficacy of the CAM therapy they currently are using, nurses have four main responsibilities. First, nurses must become familiar and confident in their knowledge of CAM therapies so that

they are comfortable discussing them with their patients. Second, nurses must assess whether patients are using any CAM therapies via communication techniques that promote trusting patient relationships. Third, nurses must educate patients about the potential positive and negative effects of CAM therapies on conventional treatments. Finally, nurses must be catalysts in initiating discussions with the rest of the healthcare team regarding patient interest and use of CAM therapies. This may require communication and negotiation among interdisciplinary members, which may be difficult because of the other team members' lack of knowledge and understanding.

Dialogue with physicians should target medical modalities such as chiropractic, acupuncture, and traditional Chinese medicine. Consultations with pharmacists can be used to explore the benefits or potential drug interactions with specific herbs or ingested substances. Discussions with physical and occupational therapists may include the use of tai chi or yoga to promote a tailored and well-suited recovery exercise program for patients. The essential aspects of encounters with other interdisciplinary members are to monitor the value and effect of the CAM therapy on the conventional treatment and to avoid the use of CAM therapies that may have any contraindication to the cancer therapy being used to treat patients' cancer. Other disciplines, such as social work, psychology, dietary, and pastoral care, also can be included to assist in patients' CAM interest or use. Oncology nurses are the bridge to help patients safely integrate evidence-based CAM therapies into conventional medicine.

Conclusion

The first step in determining the CAM therapy learning needs of oncology nurses working in direct patient care is to assess their experiences, resources used, and educational interests. The next step is to assess nurses' CAM knowledge and attitudes to obtain baseline information for providing appropriate educational methods. Nurses need to possess



Note. The following therapies scored 3% or less: Internet, National Cancer Institute, American Cancer Society, social workers, television, formal training, advertisements, and psychologists.

Figure 5. Complementary and Alternative Medicine Resources Used by Nurses

highly sophisticated CAM knowledge so they can quickly and accurately provide appropriate guidance and support to their patients. The current study has provided an initial foundation for building a CAM education curriculum or certification program. The next step in the initiative will

describe oncology nurses' knowledge and attitudes toward CAM.

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