

## Original Article

# Knowledge and Opinions of Nursing Students Regarding Complementary and Alternative Medicine for Cancer Patients

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## Abstract

**Background:** Cancer patients and their families resort to complementary and alternative medicine practices in order to cope with the effects of the difficult conventional treatments. Student nurses are aware of these practices.

**Aim:** The current study aimed to determine nursing students' knowledge and opinions regarding complementary and alternative medicine practices in cancer patients, and the factors influencing the students' opinions on this issue.

**Methodology:** This descriptive study was carried out with 148 students. Data collection was implemented by means of a literature-based questionnaire developed by the researchers.

**Results:** Students were more knowledgeable about complementary and alternative medicine practices such as acupuncture (39.2%), and religious practices (34.5%). Only 20.9% of them expressed that they often received information via media and internet, but 58.8% of them thought that this information was insufficient. A majority were in favor of the integration of complementary and alternative practices in the nursing curriculum. Many of them considered they could be implemented together with other medical practices within a multidisciplinary approach, and stated that they did not know if any nursing practice included complementary and alternative treatments.

**Conclusions:** Student nurses had insufficient knowledge about complementary and alternative medicine practices, but they wanted to learn about them. In general, students had positive opinions towards the use of complementary and alternative medicine for cancer patients. Therefore, complementary and alternative practices could be included in the nursing curriculum and nursing practices.

**Keywords:** Cancer; nursing; nursing students; complementary practices.

## Introduction

Recently, an increasing number of patients have become interested in complementary and alternative medicine (CAM). CAM is defined as various practices and products that are not considered part of conventional medicine. Complementary medicine refers to practices and products that are used together with conventional

medicine, while alternative medicine refers those that are used in place of it (NCCAM, 2011).

Patients use CAM practices to cure their disease or to relieve their symptoms. In particular, cancer patients with life-threatening conditions who are faced with difficult treatments such as chemotherapy and radiotherapy commonly use these practices (Molassiotis et al., 2005).

Previous studies determined that 35.9% - 91.0% of cancer patients had used various CAM practices such as homeopathy, vitamins/minerals, medicinal teas, mushrooms, herbs, shark cartilage, spiritual therapies and relaxation techniques (Hyodo et al., 2005; Molassiotis et al., 2005; Yates et al., 2005;). In addition, it was found that the patients had insufficient information regarding CAM practices and that they used them upon recommendations of their friends/family or the media instead of health care providers (Hyodo, 2005; Molassiotis et al., 2005).

A reason for this phenomenon could be health care providers' knowledge and attitudes towards CAM (Sewitch et al., 2008). Nurses' knowledge and perceptions regarding CAM practices are particularly essential, because their responses require both holistic and individual care, which includes assessing the situation of patients and providing them with information. Importantly, some nursing interventions include certain CAM practices such as massage and relaxation techniques. As a result, nurses, therefore hold critical responsibilities, including status assessments of the patients' use of CAM practices, the effects thereof, and keeping the patients and the families informed of these practices. Thus, it is important for nurses to have an awareness of CAM practices and the respective knowledge and skills in order to become capable of fulfilling the aforementioned responsibilities (Richardson, 2001).

However, a number of studies stated that first nurses had both positive and/or negative perceptions regarding CAM practices; second, they had insufficient knowledge about these practices; and third, wanted to increase their knowledge in this area (Risberg et al., 2004; Chu & Wallis, 2007; Holroyd, 2008; Shorofi & Arbon, 2010; Bjerså, Victorin & Olsén, 2012; Trail-Mahan, Mao & Bawel-Brinkley, 2013; Bal Ozkaptan & Kapucu, 2014). Given the increasing number of cancer patients who commonly use these practices, positive perceptions and sufficient knowledge may be achieved with effective CAM training during nursing education. Thus, respective comprehensive information presentations could be included within basic nursing education, and

opportunities for clinical application experiences could also be provided (Wyatt & Post-White, 2005).

In the literature, there are a number of studies which investigated the knowledge and opinions of nursing students regarding CAM practices (Baugniet, Boon & Østbye, 2000; Kreitzer et al., 2002; Halcón et al., 2003; Uzun & Tan, 2004; Yıldırım et al., 2010; Avino, 2011; Çamurdan & Gül, 2013; Khorasgani & Moghtadaie, 2014). However, there is limited information about CAM practices for cancer patients specifically (Öztekin et al., 2007). The knowledge and opinions of nursing students about CAM practices for cancer patients are of great importance for two reasons. First, nursing students may have to direct the care of their patients themselves. Second, this information would also shed light on the arrangement of the nursing education curriculum.

### **Aim of the Study**

The current study has two overall aims. First, it aims to investigate nursing students' knowledge and opinions of CAM for cancer patients. Second, it aims to identify the factors influencing the nursing students' opinions regarding the issue.

### **The Research Questions**

1. What is the nursing students' knowledge regarding the use of CAM for cancer patients?
2. What are the nursing students' opinions regarding the use of CAM for cancer patients?
3. What are the factors influencing the nursing students' opinions regarding the use of CAM for cancer patients?

### **Methodology**

#### **Population and Sample**

This descriptive study was conducted with the nursing students who were studying at the Nursing Department of Health Sciences of a state university in Ankara, Turkey. The population consisted of 192 students, and the sample was the 148 nursing students who accepted to participate in the study.

#### **Instruments**

Data were collected by means of a literature-based questionnaire developed by the researchers

(Baugniet, Boon & Østbye, 2000; Kreitzer et al., 2002; Uzun & Tan, 2004; Yıldırım et al., 2010). The questionnaire included three sections: (1) the demographical characteristics and experiences on CAM practices; (2) the knowledge of CAM and attitudes towards general CAM; and (3) the opinions regarding CAM for cancer patients. The first section of the questionnaire consisted of 12 questions, for example age, gender and place of residence; having a relative with cancer; using CAM practices for relatives with cancer; encountering with cancer patients during nursing education; and asking about the state of patients' CAM usage. The second section included eight questions, for example knowledge about any particular CAM practices; knowledge about any nursing interventions including CAM practices; resources receiving information about CAM; the sufficiency of the participants' knowledge about CAM; recommendation of CAM methods to their relatives with cancer; and the integration of CAM within the nursing curriculum. The last section had five-point Likert-type 17 items (agree, partly agree, uncertain, partly disagree, disagree) regarding CAM practices for cancer patients. This section was not a scale, but was designed according to the literature by the researchers in order to collect data systematically.

### Data Collection

Data were collected before the common courses of the nursing students by the researchers. After the purpose of the study was expressed, the nursing students who accepted to participate in the study were asked to complete the questionnaire.

### Ethical Considerations

The study was conducted after formal permissions for the study were obtained from the directorate of the nursing department and the Board of Research on Social and Human Sciences of Baskent University. The informed consent of the nursing students was provided.

### Data Analysis

Descriptive statistics and chi-square test were calculated using SPSS version 15.0 program. Chi-square test was applied to compare the students' socio-demographical characteristics,

experiences thereof on CAM practices both among their relatives, and among the patients, they had encountered throughout clinical practices, with their opinions on CAM practices. The significance level was .05.

## Results

### Demographical characteristics and experiences on CAM in cancer

The mean age of the participants was  $21.09 \pm 1.54$ , of which 98.6% were female, 25.7% senior students, and 65.5% living at the city center. In addition, 74.3% of the participants described themselves as "income equal to expenses". Some participants (20.9%) indicated that they had a relative with cancer, 45.2% of them were their second-degree relatives, and 51.6% of them did not know if they had used any CAM practices. Nearly half (48.6%) of the participants stated that they had encountered individuals who had been undergoing cancer treatments during their nursing education, and half of them had assessed if the patients used any CAM practices (Table 1).

### The knowledge CAM and attitudes towards general CAM

Among the CAM practices in cancer patients, the participants were more familiar with medicinal herbs and acupuncture, and less familiar with aromatherapy, therapeutic contact, and reflexology. Moreover, the majority (75.7%) of the students did not know that some of the CAM practices, including massage, therapeutic contact were within the scope of the nursing applications. Some participants (20.9%) were accessing knowledge about CAM practices via sources such as media and internet, and more than half (58.8%) of them believed the knowledge they had obtained in this way was insufficient. Although 43.3% of the participants recommended using CAM methods if any of their relatives had been diagnosed with cancer, another 47.3% was uncertain. A majority of the participants stated positive opinions regarding the integration of CAM within the curriculum. In addition, more than half of them stated positive opinions regarding the integration of CAM to the nursing practice in the future (Table 2).

**Table 1. Students' experiences about CAM practices on their relatives and patients with cancer (n=148)**

<b>Gender</b>	<b>n</b>	<b>%</b>
Female	146	98.6
Male	2	1.4
<b>Place of residence</b>		
City center	97	65.5
Town	42	28.4
Village	9	6.1
<b>Family income status</b>		
Income less than expenses	18	12.2
Income equal to expenses	110	74.3
Income more than expenses	20	13.5
<b>Year of study</b>		
1st year	30	20.3
2nd year	42	28.4
3rd year	38	25.7
4th year	38	25.7
<b>Having a relative with cancer</b>		
Yes	31	20.9
No	117	79.1
<b>Degree of relationship (n=31)</b>		
First-degree relatives	3	9.6
Second-degree relatives	14	45.2
Third-degree relatives	10	32.3
Other	4	12.9
<b>Using CAM practices for the relative with cancer (n=31)</b>		
Yes	4	12.9
No	11	35.5
I don't know	16	51.6
<b>Encountering with cancer patients during nursing education</b>		
Yes	72	48.6
No	76	51.4
<b>Asking about state of patient's CAM usage (n=72)</b>		
Yes	36	50.0
No	36	50.0

**Table 2. Students' knowledge CAM and attitudes towards general CAM practices**

<b>Knowledge about any particular CAM practices</b>	<b>n</b>	<b>%</b>
Officinal plants	66	44.6
Acupuncture	58	39.2
Religious practices	51	34.5
Massage	27	18.2
Aromatherapy	13	8.8
Therapeutic touch	11	7.4
Reflexology	2	1.4
<b>Knowledge about any particular CAM practices</b>		
Yes	14	9.5
No	22	14.9
I don't know	112	75.7
<b>Having information about CAM practices</b>		
Yes	34	20.9
No	117	79.1
<b>Resources receiving information about CAM (n=34)</b>		
Media	23	67.6
Internet	21	61.7
Books/Journals	11	32.4
University	11	32.4
Brochures	12	35.3
Relatives/friends	11	32.4
Plant scientists	9	26.5
Patients with cancer	8	23.5
Health professionals	8	23.5
<b>The sufficiency of knowledge about CAM (n=34)</b>		
Sufficient	1	3.0
Slightly sufficient	13	38.2
Insufficient	20	58.8
<b>Knowledge about any nursing interventions including CAM practices</b>		
Yes	14	9.5
No	22	14.9
I don't know	112	75.7
<b>Recommendation of CAM methods to their relatives with cancer</b>		
Yes	70	47.3
No	8	5.4
Uncertain	70	47.3
<b>The integration of CAM within the nursing curriculum</b>		
Yes	114	77
No	7	4.7
Uncertain	27	18.3
<b>The integration of CAM within the nursing practice in the future</b>		
Yes	81	54.7
No	11	7.4
Uncertain	55	37.2

**Table 3. Students' opinions on CAM**

Items for CAT therapies	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree
	%	%	%	%	%
1. CAM is a branch of science.	16.9	37.2	27	5.4	13.5
2. CAM is an effective method of treatment.	11.5	45.9	30.4	4.7	7.4
3. CAM is effective when applied together with medical treatments.	48.0	31.8	13.5	3.4	3.4
4. CAM is effective when used separately.	3.4	10.8	29.1	22.3	34.5
5. CAM can be used for the disease process.	24.3	27.7	35.1	4.1	8.1
6. CAM can be applied only for patients in terminal stage.	4.1	10.2	28.4	16.2	41.2
7. The professionals who are not medical staff must practice CAM practices.	5.4	8.1	21.6	18.9	45.9
8. CAM practices are the responsibility only of physicians.	6.1	15.5	20.9	25.7	31.8
9. CAM practices are the responsibility only of nurses.	3.4	10.8	22.3	22.3	41.2
10. CAM practices required a multidisciplinary approach.	42.6	18.9	30.4	5.4	2.7
11. Nurses have an important responsibility in CAM practices.	26.4	29.7	31.1	6.1	6.8
12. CAM practices can affect medical treatment because of side effects.	26.4	27.0	35.8	5.4	5.4
13. The medical staff should inform to patients about CAM practices.	58.8	22.3	12.8	5.4	0.7
14. To request information about CAM is patient's right.	73.6	11.5	10.8	3.4	0.7
15. If patient wants to use CAM practices are his rights.	51.4	25.7	18.9	2.0	2.0
16. Patients should be able to consult medical staff about CAM practices.	73.6	14.9	8.1	2.7	0.7
17. Patients who use CAM practices should inform medical staff about the issue.	68.2	14.2	8.8	3.4	5.4

**Opinions regarding CAM**

Upon reviewing the opinions of the students regarding CAM in cancer patients, it was seen that they were generally positive. The participants frequently agreed with the opinions that CAM was a branch of science, an effective

method of treatment, effective when applied together with medical treatments, and that applications regarding CAM required a multidisciplinary approach, that it was the patient's right to be informed about CAM, and finally that the patient should be allowed to

consult with the related medical personnel with regard to CAM (Table 3).

### **The factors influencing opinions on CAM in cancer patients**

In the current study, Chi-Square analysis of the factors which affected the participants' opinions regarding CAM revealed statistical significant only between the responses of participants faced with cancer patients during nursing education and following opinions "the sole use of CAM is effective", "it should be applied only to the terminal patients", "the patients should be informed with regard to the use of CAM", and "it should be the patient who is to decide on the use of CAM" ( $p < .001$ ). There was no significant difference between the participants' opinions and other variables, such as the participants' socio-demographical characteristics, previous experiences of CAM practices among their relatives.

### **Discussion**

This descriptive study aimed to determine nursing students' knowledge about and opinions regarding complementary and alternative treatments for cancer patients, and the factors influencing them. According to the findings, the participants had positive opinions toward CAM practices for cancer patients, which is similar with results of other studies that examined general attitudes towards CAM (Baugniet, Boon & Østbye, 2000; Halcón et al., 2003; Uzun & Tan 2004; Booth-Laforce et al., 2010; Avino, 2011; Khorasgani & Moghtadaie, 2014). Furthermore, they agreed with that CAM should be integrated into nursing practice in the future, although they had limited knowledge about this.

Again, similar to the literature, the participants were more familiar with the most common CAM practices, such as massage therapy, acupuncture, and herbal medicine than the less common CAM practices, such as aromatherapy and reflexology (Baugniet, Boon & Østbye, 2000; Uzun & Tan 2004). This could be because massage therapy and herbal medicine are commonly used in Turkey both by cancer patients and other patients. However, most of the participants did not know that some of the CAM practices, especially massage and therapeutic contact, were included within the scope of nursing applications.

One explanation for this could be the sample's characteristics, because of the participants lacked professional practice of CAM practices in clinical environments and had insufficient training on this subject during their nursing education.

In parallel with previous studies (Halcón et al., 2003; Uzun & Tan, 2004; Yıldırım et al., 2010; Avino, 2011), the participants were accessing knowledge about CAM practices via such sources as the media and internet, and they stated that the knowledge obtained in this way was insufficient. Accordingly, these findings suggest that the participants had insufficient knowledge about CAM practices, and thus would not be able to help on this matter sufficiently the cancer patients they would encounter during their education and their career. Halcón et al. (2003) indicated that a low percentage of nursing faculty and students would personally provide CAM services in their practices, and would not recommend them to the patients. On the contrary, Çamurdan & Gül (2013) stated that hot and cold application, massage and exercise were methods were often used by students in patient care and recommended to the patients. In our study, half of the students who had relatives with cancer did not know if they used any CAM practices, and half of the students who had encountered cancer patients during their nursing education had not assessed whether or not the patients had used any CAM practices.

Moreover, approximately half of the participants specified that they would recommend using CAM practices if any of their relatives had been diagnosed with cancer, although their knowledge was not sufficient as to which or how or when to use the CAM practices.

The essential knowledge and skills on CAM practices that nursing students need can be provided by way of presenting comprehensive knowledge, in addition to clinical applications. Therefore, the integration of CAM within the curriculum and the nursing applications are significantly important. Our sample and the other nursing students seem willing to learn CAM practices, because they wanted the integration of CAM within the nursing curriculum (Baugniet, Boon & Østbye, 2000; Kreitzer et al., 2002; Halcón et al., 2003; Yıldırım et al., 2010; Avino, 2011; Çamurdan & Gül, 2013; Khorasgani &

Moghtadaie, 2014). However, the integration of CAM in the curriculum should include comprehensive knowledge for evidence-based CAM practices for cancer patients that can be applied by nurses, in addition to opportunities for experiential learning (Booth-Laforce et al., 2010; Avino, 2011).

In the current study, the factors that affected the students' opinions towards CAM in cancer patients were also examined. Personality characteristics of nursing students, their values, communicative and social skills, and life goals in addition to the differences in terms of educational style between the groups of medical personnel should not be ignored, because they may affect nursing students' perceptions regarding CAM, and patient care services as well (Baugniet, Boon & Østbye, 2000).

Some studies determined a significant difference in nursing students' knowledge about CAM between classes (Uzun & Tan, 2004; Çamurdan & Gül, 2013), and it has also been found that nursing students had more positive attitudes than pharmacy and medical students (Kreitzer et al., 2002). However, in our study there was no significant difference between the participants' socio-demographical characteristics and their experiences on CAM practices with either their relatives or their clinical practice.

Only some opinions on CAM practices of participants who had encountered cancer patients during their nursing education were statistically significant. Based on this finding, it could be said that clinical experiences offer learning opportunities to nursing students and affect their opinions on CAM practices for cancer patients. Therefore, place needs to be given to comprehensive knowledge on and clinical practice with CAM in the nursing curriculum. In addition, to develop such curricula, barriers such as lack of nursing faculty members and nurses training and lack of evidence for practice should be considered (Booth-Laforce et al., 2010; Avino, 2011).

### Conclusion

In conclusion, it can be said that nurses play a critical role in the recovery of cancer patients by means of safe and accurate use of CAM practices. Thus, nursing students, being the

nurses of the future, should be equipped with adequate knowledge and education in the field of CAM practices. In the current study, it has been emphasized that nursing students reported positive opinions regarding CAM practices, but that their overall knowledge in these treatments was far from adequate. Hence, it is of critical importance to have knowledge and practice related to CAM methods integrated into the nursing curriculum in order to enable the nursing students to respond to the questions from the patients to whom they will be administering these methods.

### Recommendations

In accordance with the outcomes of the current study, it may be recommended to have CAM and the issues regarding its use integrated into the nursing curriculum, which should also emphasize the connection between these methods and nursing practices.

### Acknowledgments

The authors equally participated to all process regarding the study such as planning, data collection, analyzing, writing and had not been received any financial support for this study.

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