

Should CAM and CAM Training Programs Be Included in the Curriculum of Schools That Provide Health Education?

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Key Words

applications, complementary medicine, disease, students, Turkey

Abstract

Objectives: This study aimed to determine the knowledge levels and attitudes of School of Health and Vocational School of Health students toward complementary and alternative medicine (CAM).

Methods: Three hundred thirty-three (333) students studying at the Mehmet Akif Ersoy University School of Health and the Golhisar Vocational School of Health in Burdur, Turkey, were included in the study. Research data were collected by using a survey method based on the expressed opinions of the participants.

Results: Of the participants, 69.7% were female and 97% were single (unmarried). Of cigarette users and those with chronic illnesses, 46.8% and 47.8%, respectively, used CAM. Those using CAM were statistically more likely to be female ($P < 0.021$), to have higher grades ($P < 0.007$), to be single ($P < 0.005$), to be vocational school of health graduates ($P < 0.008$), and to have fathers at work ($P < 0.021$). While 9.6% of the students thought CAM to be nonsense, 10.8% thought that the methods of CAM should be tried before consulting a doctor.

Conclusion: A majority of the students in the study pop-

ulation were found to use complementary and alternative medicine, but that they lacked information about its methods. As a way to address this, CAM should be included in the curriculum of schools that provide health education, and CAM training programs should be given to healthcare professionals to improve their knowledge of CAM. In Turkey, many more studies should be performed to determine nurses' and doctors' knowledge of and attitudes about CAM methods so that they can give correct guidance to society and take more active responsibility in improving patient safety.

1. Introduction

Today, in addition to "modern" medicine, "traditional" complementary or alternative medicine methods offer a holistic perspective [1]. Alternative medicine continues to attract the attention of patients, physicians, policymakers, and administrators [2]. According to National Health Statistical reports, complementary and alternative medicine (CAM) is being increasingly used for treatment throughout the world. Between 2002 and 2007, increased use of acupuncture, deep breathing exercises, massage therapy, meditation, naturopathy, and yoga was seen among adults [3]. Patients seek CAM therapy for many reasons, and those reasons can be used to explain the rise in its use. When assessing the patient's reason for choosing CAM treatment, the attitude of the patient toward that treatment must be considered [4].

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In Turkey, many CAM treatments and methods have been in use since ancient times. Although modern medicine is resistant to the use of these traditional practices, they are still available in circumstances where modern medicine has been inadequate or unable to convince people of its efficacy [5]. In Turkey, the Ministry of Health has only recently formulated and submitted new laws relating to use of CAM. Thus, data at the national level are lacking. In addition, in Turkey, only doctors are permitted to treat patients by using CAM methods. Therefore, this study aimed to examine the knowledge about and the attitudes toward

CAM among health school students.

2. Material and Methods

This research was approved by the Mehmet Akif Ersoy University Ethics Committee (15/06/2015-E.22648). After the necessary permits had been obtained from the faculty administration, verbal and written consent was obtained from each student who voluntarily agreed to participate

Table 1 Effects of socio-demographic factors on the use of complementary and alternative medicine (Have you ever used?)

Personel specialities	Using complementary and alternative medicine			P	
	n (%)	Yes	No		
Gender	Girls	232 (69.7)	133 (57.3)	99 (42.7)	0.021*
	Boys	101 (30.3)	44 (43.6)	57 (56.6)	
Class	Class 1 [†]	132 (39.9)	58 (43.6)	75 (56.4)	0.007*
	Class 2 [†]	134 (40.2)	73 (54.5)	61 (45.5)	
	Class 3 [†]	39 (11.7)	27 (69.2)	12 (30.8)	
	Class 4 [†]	27 (8.1)	19 (70.4)	8 (29.6)	
Branch	Nursing	66 (19.8)	37 (56.1)	29 (43.9)	0.327
	Child development	132 (39.6)	77 (58.3)	55 (41.7)	
	Pharmacy services	38 (11.4)	16 (42.1)	22 (57.9)	
	Medical documentation	48 (14.4)	22 (45.8)	26 (54.2)	
	Medical secretaries	49 (14.8)	25 (51.0)	24 (49.0)	
Graduated secondary school names	Health colleges	54 (16.2)	37 (69.8)	16 (30.2)	0.008*
	Other secondary schools	279 (83.8)	140 (50.0)	140 (50.0)	
Father's educational level	Primary school graduate and under	145 (43.5)	65 (44.8)	80 (55.2)	0.064
	Secondary school	67 (20.1)	39 (58.2)	28 (41.8)	
	High school graduate	82 (24.6)	49 (59.8)	33 (40.2)	
	Graduated from a university	39 (11.7)	24 (61.5)	15 (38.5)	
Mother's educational level	Primary school graduates and under	225 (67.6)	114 (50.7)	111 (49.3)	0.392
	Secondary school	40 (12.0)	21 (52.5)	19 (47.5)	
	High school graduate	55 (16.5)	35 (63.6)	20 (36.4)	
	Graduated from a university	13 (3.9)	7 (53.8)	6 (46.2)	
Father's work status	Working	206 (61.9)	121 (58.7)	85 (41.3)	0.021*
	Not working	35 (10.5)	13 (37.1)	22 (62.9)	
	Retired	92 (27.6)	43 (46.7)	49 (53.3)	
Mother's work status	Working	46 (13.8)	27 (58.7)	19 (41.3)	0.369
	Not working	278 (83.5)	147 (52.9)	131 (47.1)	
	Retired	9 (2.7)	3 (33.3)	6 (66.7)	
Smokes cigarettes	Yes	62 (18.6)	29 (46.8)	33 (53.2)	0.265
	No	271 (81.4)	148 (54.6)	123 (45.4)	
Chronic disease status	Yes	23 (6.9)	11 (47.8)	12 (52.2)	0.596
	No	310 (93.1)	166 (53.5)	144 (46.5)	
Total		333 (100.0)	177 (100.0)	165 (100.0)	-

* $P < 0.05$; $P < 0.001$; [†]Classes 1, 2, 3, and 4 are students educational level degrees, respectively.

Table 2 Attitudes and behaviors regarding complementary and alternative medicine

Attitudes and behaviors	Answers	n	%
Use of complementary medicine methods is helpful	Yes	178	53.5
	No	46	13.8
	Undecided	109	32.7
Status of use of complementary medicine methods	No	161	48.3
	Yes (1 method)	55	16.5
	Yes (2 methods)	38	11.4
	Yes (3 methods)	38	11.4
	Yes (4 or more different methods)	41	12.4
Methods of complementary medicine that are used [†]	Vitamins	84	25.2 [‡]
	Herbal [†]	79	23.7 [‡]
	Massage	77	23.1 [‡]
	Relaxation	59	17.7 [‡]
	Painting	48	14.4 [‡]
	Hydrotherapy	26	7.8 [‡]
Frequency of use of methods of complementary medicine	Yoga	14	4.2 [‡]
	Use	70	14.4
	Rarely use	41	12.4
	Use only when ill	61	18.3
	Do not use	161	48.3
	Effective factors for fostering the use of complementary and alternative medicine	Herbalist	30
Doctor		42	12.6
Newspaper		11	3.3
Internet		62	18.6
Television		37	11.1
Friends		53	15.9
Other		49	14.7
Reasons to use complementary and alternative medicine	Treat health problems	112	33.6 [‡]
	Hair and facial care	74	22.2 [‡]
	Reduce stress	61	18.3 [‡]
	Lose weight	50	15.0 [‡]
	Comfortable sleeping	39	11.7 [‡]
	Resolve fatigue	53	15.9 [‡]
	Sex	3	0.9 [‡]
	Cancer	1	0.3 [‡]
	Gain weight	14	4.2 [‡]
	Body building	13	3.9 [‡]
Other	16	4.8 [‡]	
Benefits of using complementary and alternative medicine	Yes. I saw the benefits	81	24.3 [‡]
	Yes. I saw part of the benefits	95	28.5
Total		333	100.0

[†]CAM methods used were ozonotherapy (n = 7, 2.1%); special diet (n = 6, 1.8%); reflexology and other methods (n = 5, 1.5%); bioenergy (n = 4, 1.2%); acupuncture, aromatherapy, hypnosis, Tai Chi, and Feng shui (n = 3, 0.9%); acupressure, homeopathy, ayurveda, and massage (n = 2, 0.6%); and shark parts and chiropractic (n = 1, 0.3%). Whether or not osteopathy and reiki methods were used is unknown. [‡]All herbal products were used as teas: Linden (n = 23, 6.97%), sage (n = 17, 5.15%), thyme (n = 6, 1.82%), and mint and lemon (n = 7, 2.12%).

[‡]Marked multiple answers.

in this research. In total, 333 students who were attending Mehmet Akif Ersoy University School of Health and Golhisar Vocational School of Health in Burdur, Turkey, were included in the study (18 November – 18 December, 2015). Burdur is located in Southeastern Turkey. Mehmet Akif Ersoy University School of Health has two departments: the Department of Nursing and the Department of Child Development, and Golhisar Vocational School of Health has three departments: the Department of Pharmacy Services, the Department of Medical Documentation, and Medical Secretaries. 1st, 2nd, 3rd and 4th class grade students of these two schools total populations were included in the sample.

A questionnaire consisting of three parts and twenty-five questions was used to collect data. The first part concerned the socio-demographic characteristics of the students, the second their attitudes and behaviors toward CAM applications, and the third their knowledge of and opinions toward CAM applications. The questionnaires were distributed to the students during class and collected at the end of the class.

Data collected from the study were analyzed using the statistical package for the social sciences (SPSS) version 17.0 for Windows. Quantitative values are given as arithmetic means \pm standard deviations. Values that were determined by counting were calculated as numbers and percentages. The Chi-square test was used to analyze the relationships between categorical variables. Results were evaluated with a 95% confidence level, and the level of significance was set at $P < 0.05$.

3. Results

The socio-demographic characteristics of the participants and a comparison of their use of CAM applications are given in Table 1. Our study included students from two different schools: 59.4% attended Akif Ersoy University School of Health and 40.6% attended Gölhisar Vocational School of Health. The use of CAM methods ($P < 0.021$) by female students and the increasing rate of this use as their grade increased ($P < 0.007$) were statistically significant. The uses of CAM practices by single students ($P < 0.005$) and by graduates of the vocational school of health ($P < 0.008$) were also found to be statistically significant. Furthermore, CAM use among students whose fathers were working was significantly higher than it was among those whose fathers were not working ($P < 0.021$).

The attitudes and the behaviors of the students with regard to CAM practices are given in Table 2. CAM applications included ozone therapy ($n = 7$, 2.1%); special diet ($n = 6$, 1.8%); reflexology and other methods ($n = 5$, 1.5%); bioenergy ($n = 4$, 1.2%); acupuncture, aromatherapy, hypnosis, Tai Chi, and Feng Shui ($n = 3$, 0.9%); acupressure, homeopathy, ayurveda, and massage ($n = 2$, 0.6%); and shark parts and chiropractic ($n = 1$, 0.3%). Osteopathy and reiki methods were not known. The only herbal products known were teas: linden ($n = 23$, 6.97%), sage ($n = 17$, 5.15%), thyme ($n = 6$, 1.82%), and mint and lemon teas ($n = 7$, 2.12%).

Of the students participating in this study, 53.5% thought the use of CAM practices to be beneficial, and 51.7% had

used a CAM method. Of those using CAM, the most commonly used methods were vitamins (25.2%), followed by herbal products (23.7%) and massage (23.1%). Among the CAM users, 18.3% had used these methods only when ill whereas 14.4% had used them more frequently. For 18.6% of the participants, the internet was the most common factor affecting their decision to start using CAM methods.

The students' level of knowledge varied with respect to different CAM methods. Of the student who participated, 27.0% and 24.0% stated that they had sufficient knowledge about herbal therapy and religious methods, respectively, whereas 80.5% stated that they had never heard about the reiki technique. Other characteristics of the students' knowledge levels are given in Table 3. The students' knowledge of acupuncture and aromatherapy ($P < 0.014$) increased as the grade level increased; this was found to be statistically significant ($P < 0.000$).

Of the students participating in the research, 73.6% thought that CAM methods could help patients' to recover from simple diseases, 67.6% believed that CAM methods had to be supported by evidence-based medicine, and 65.5% thought that CAM methods had a positive effect on public health. Furthermore, 64.6% of the students was found to believe in the effects and benefits of CAM methods; 64.6% considered them as a supporting factor for modern medicine while 55.9% thought that they should be used in the treatment of simple diseases, but not in the treatment of more serious diseases. On the other hand, 43.8% of the students stated that CAM should be used only as a method of supporting medical treatment, 37.5% thought that CAM was useful for controlling the symptoms in patients with chronic diseases, and 36.0% believed that CAM had to be supported by the legal and the health-insurance systems. Of the participating students, 21.0% were of the opinion that CAM methods were as effective as medical treatment while 10.8% suggested that CAM methods should be tried before seeing a physician. However, 9.6% of the respondents regarded CAM as nonsense, and 14.4% regarded it as risky in terms of health.

4. Discussion

Of the students observed in the research literature, the proportion of those using CAM outside of health departments was quite high at 98.4%. The frequency of use by nursing students was 61.2% [6]. The rate of use among the students of faculties of medicine ranged from 51.1% to 88.3%, and the percentage using one or more CAM modalities during the past 30 days in the Czech Republic was 76.0% [7]. These results are aligned with the results not only in Turkey but also throughout the world. In addition, as we thought, a substantial increase has been seen worldwide in the use of CAM methods. In our study, the use of CAM was more frequent among single females whose fathers were working, but in some other studies, CAM use was more common among those with lower educational level or females. In another study, those who had a high educational level, were married, and/or were retired housewives had a higher use of CAM. In a study conducted in Taiwan, the rate of CAM use was found to be higher for people un-

der the age 30 and over the age 50, for single people, and for those with high incomes. In the same study, no relation was found between educational level and the use of CAM [8]. In summary, the gender characteristics and educational levels of those who use CAM differ across studies. Therefore, we do not believe a generalization concerning the use of CAM methods based on personal characteristics is possible. We think that the use of CAM treatment methods differs according to the patient's disease, the characteristics of the patient's society, and the patient's personal interests and level of education.

In our study, vitamins, herbs, and massage were found to be among the most-commonly used methods. In contrast, among adults in the United States, non-vitamin and non-mineral natural products and deep breathing exercises, meditation, and massage were well-known therapies (NHS report). In studies conducted with medical school students in Turkey, herbal treatment, acupuncture, and hypnosis were well known [9, 10], but among health science students in Turkey, herbal tea and massage treatment were widely known [6]. The best-known CAM methods were found to be diet, vitamins, and massage among the medical school residents and students in Turkey [1]. In studies conducted in Turkey, no significant correlation was found between the educational level of the patient and the patient's interest in herbal products consumption. In another study of patients with breast cancer, the

patients with higher educational levels were more likely to use herbal products [11], and in yet another study, a higher proportion of cancer survivors reported that they had used vitamins/minerals and CAM [12]. Based on the above, one conclude that a high percentage of adults use CAM therapies both when they are healthy and when they are ill. These results are similar to our results. All over the world, people are searching for ways to feel better, and increasingly they are turning to CAM methods due to the influence of television and/or the internet. Another factor influencing their use is the extents to which their societies accept CAM methods.

We observed that the students included in this study had positive and deliberate suggestions related to the use of CAM "for the treatment of simple diseases" and its use as a "support for modern medicine." These results did not surprise us; in fact, they supported the results in the published literature. The high prevalence of CAM use among cancer patients can be explained by the growing scientific evidence for its efficacy and by improved regulation [13]. In this context, oncology institutions that prioritize evidence-based medicine should consider introducing CAM education to their nursing staffs [14]. CAM treatment methods are spreading worldwide due, in our opinion and in part, to the fact that people do not want medical organizations to be divided into two major branches, evidence-based and complementary, that have almost no co-

Table 3 Students' classes, as defined in Table 1, and their knowledge about complementary and alternative medicine

Known methods	Class 1	Class 2	Class 3	Class 4	<i>P</i>
	Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD	
Acupuncture	2.35 ± 0.90	2.59 ± 0.89	2.72 ± 0.89	2.85 ± 1.02	0.014*
Aromatherapy	1.36 ± 0.60	1.84 ± 0.10	1.46 ± 0.76	2.00 ± 1.11	0.000†
Music therapy	2.70 ± 0.98	2.54 ± 0.98	2.41 ± 0.97	3.00 ± 0.88	0.562
Biohealing	1.86 ± 0.88	1.86 ± 0.84	1.61 ± 0.71	2.00 ± 0.96	1.000
Ayurveda	1.20 ± 0.56	1.24 ± 0.50	1.21 ± 0.52	1.41 ± 0.93	0.956
Religious practices (Prayers, amulets, etc.)	3.11 ± 1.03	3.03 ± 0.96	3.15 ± 1.01	3.41 ± 1.05	0.908
Herbal treatments	2.97 ± 0.94	3.19 ± 0.99	3.03 ± 0.93	3.33 ± 0.88	0.222
Homeopathy	1.34 ± 0.74	1.57 ± 0.95	1.38 ± 0.59	1.48 ± 0.80	0.090
Hypnotherapy	1.58 ± 0.83	1.80 ± 0.88	1.56 ± 0.72	1.78 ± 0.85	0.144
Dietary supplementation	2.77 ± 1.06	2.83 ± 1.04	2.62 ± 1.11	2.85 ± 1.03	0.712
Reflexology	1.46 ± 0.82	1.44 ± 0.76	1.41 ± 0.55	1.52 ± 0.80	0.949
Reiki	1.17 ± 0.52	1.37 ± 0.81	1.36 ± 0.71	1.67 ± 1.14	0.008
Massage	3.17 ± 1.00	3.34 ± 1.08	3.03 ± 1.16	3.04 ± 1.26	0.271
Meditation / Relaxation	2.71 ± 1.03	2.84 ± 0.96	2.79 ± 1.00	3.00 ± 1.07	0.516
Color therapy	1.88 ± 0.90	1.96 ± 1.00	1.77 ± 0.96	2.22 ± 0.93	0.253
Yoga	2.44 ± 0.89	2.58 ± 0.93	2.28 ± 0.92	2.33 ± 1.00	0.229
Epilation	1.26 ± 0.71	1.33 ± 0.69	1.21 ± 0.70	1.37 ± 0.74	0.678

SD, standard deviations. **P* < 0.05; †*P* < 0.001.

ordination with each other. CAM presents a more holistic approach toward human beings, and CAM treatments are planned according to the bio-psycho-social dimensions of each person.

Nevertheless, that 10.8% of students think that “CAM methods should be used before seeing a doctor,” is alarming, especially because CAM is often applied to children. Physicians should be given information about the effects and the side effects of CAM methods and should warn families and especially mothers about their potential risks [15]. When considered from this aspect, Turkey has formed a basis for the use of CAM practices by regulating them and permitting them to be used only by physicians under the control of the Ministry of Health. We are of the opinion that the position and the role of the physician in being aware of the disease and the patient’s prospective outcome when using CAM has been properly regulated, as it should be. However, we think that health practice requires teamwork; thus, educating other health professionals about the benefits of using CAM to treat patients with various diseases and about CAM’s possible deleterious side effects is essential.

5. Conclusion

Today, many healthy individuals and patients use complementary therapies to improve health, to prevent diseases, and/or to support medical care and treatment for various medical conditions. As a result of the increased interest in complementary therapies, nurses, as healthcare professionals and members of healthcare teams that meet the healthcare demands of society, are now inevitably required to be involved in the provision of complementary therapies. In consideration of the possible adverse effects of CAM therapies, doctors should be aware of the high prevalence of CAM use among patients with diseases and be prepared to discuss that use with those patients.

Conflict of interest

The authors declare that there are no conflict of interest.

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