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ASSESSMENT OF KNOWLEDGE AND ATTITUDES TOWARD COMPLEMENTARY AND ALTERNATIVE MEDICINE (CAM) AMONGST TURKISH MEDICAL FACULTY STUDENTS

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Abstract

Background: Complementary and Alternative Medicine (CAM) therapies are becoming increasingly acceptable to the general public and are increasingly used around the world. The international rise in focus on CAM and the increased incorporation of CAM into medical curricula make it important to gain insight into the knowledge and attitudes of medical students about CAM and its integration in the medical curriculum.
Materials and Methods: In this present study, we attempt to investigate the Cerrahpasa medical faculty students' knowledge, attitude and practices of the students on CAM. The study used a primary cross-sectional data collection from students of Cerrahpasa Medical Faculty, Istanbul University, in 2012-2013 academic years.
Results: Students' knowledge of CAM between classes was also compared. There were also statistically significant differences about the knowledge of those methods (acupuncture, acupressure, yoga, reiki, prayer, meditation massage, dietary, spa). Prayer was the most known modality in all medical classes' students (first year students: 254, sixth year students: 192). The students who participated in the study stated that 433 (%59.4) have some knowledge about the acupuncture (first year students: 229, sixth year students: 204). Acupressure was found to be at least known methods for CAM (first year students: 313, sixth year students: 282).
Conclusion: Medical students in our faculty had limited knowledge about CAM therapies. Medical students also have an understanding of the importance of CAM education in the medical curriculum, specifically how it will positively influence professional attitude and stimulate the doctor–patient relationship.

Key words: Medical, Students, Complementary and Alternative Medicine.

Introduction

Currently, using of complementary and alternative medicine (CAM) and the popularity of it has been increasing among both the general population and health care workers (HCWs). Complementary and Alternative Medicine (CAM) therapies are becoming increasingly acceptable to the general public and are increasingly used around the world (Hessig et al., 2004; Laurenson et al., 2006; O'Regan et al., 2010; Camurdan and Asiye, 2013). The general population has shown an increasing interest in complementary and alternative medicine (CAM) and has made more use of them in recent years, mainly because they are considered "healthy" and "natural" (Barbadoro et al, 2011). The National Centre for CAM (NCCAM) of the US National Institute of Health (NIH) defines 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", and classifies CAM into five distinct categories: natural products, mind-body medicine, manipulative and body-based practices, other CAM practices and ancient medical systems (NIH, 2011).

For centuries, people have been using traditional medicine for the treatment of common mild conditions such as headache, diarrhea, common cold as well as in the treatment of chronic diseases such as cancer, diabetes mellitus (DM), dyslipidemia, hypertension (HTN) or chronic kidney disease (CKD) in all civilizations of the World (Wazaify, 2013). CAM includes such as herbal therapy, aromatherapy, massage, acupuncture, acupressure, reflexology, therapeutic touch, prayer, meditation, guided imagery, relaxation, exercise and biofeedback (Helms, 2006). Major CAM users are patients with asthma, arthritis, psoriasis, cancer, chronic liver disease, irritable bowel disease, gastroesophageal reflux disease, dyspepsia and constipation (Soeken, 2004; Kong et al., 2005; Bertomoro et al., 2010). Conventional medicine is still predominant in national health care services. The use of CAM has grown substantially in western countries, particularly among patients with chronic diseases [5] and is now attracting increasing attention within the context of health care provision and health sector reform (Kraft, 2009; Sarsina and Iseppato, 2010). According to the World Health Organization, the use of herbal remedies throughout the world exceeds that of conventional drugs by two- to three-fold. Herbal medicine is still the mainstay of about 75–80% of the world population, mainly in developing countries, for primary health care (Kamboj, 2000; Kumara et al., 2006). HCWs have become increasingly integrated these therapies into everyday practice. Their knowledge and attitude can influence patients' health beliefs and behaviours in CAM (Stratton et al., 2007; Stuttard, 2000).

Over the past decade, there has been an increased interest and activity at many medical schools in the USA and Europe to incorporate Complementary and Alternative Medicine (CAM) into the undergraduate medical curriculum (Kliger et al., 2004; Kolkman et al., 2011). The use of complementary and alternative medicine (CAM) appears to be on the rise in all adult age groups, including the elderly population. Many herbal and biologic preparations offer promise, but they are largely of unproven benefit (Jamal, 2011). Education can affect the use of HCWs interventions by providing theoretical knowledge and opportunities for practical skill acquisition (Hessig et al., 2004). To do so, it is necessary for HCWs to increase both their knowledge and experience about CAM (Uzun and Tan, 2004; Wilkinson and Simpson, 2001). The international rise in focus on CAM and the increased incorporation of CAM into medical curricula, make it important to gain insight into the knowledge and attitudes of medical students about CAM and its integration in the medical curriculum .There are a number of studies which have investigated both HCWs and health science students' opinions and attitudes (Booth-Laforce et al., 2010; Greenfield et al., 2006; Halkón et al., 2003; Samuels et al., 2010; Wilkinson and Simpson, 2001) in other country but there is little information about CAM use by medical students in Turkey (Turker et al., 2011; Uzun and Tan, 2004; Yıldırım et al., 2010; Booth-Laforce et al., 2010; Greenfield et al., 2006).

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In this present study, we attempt to investigate the Cerrahpasa medical faculty students' knowledge, attitude and practices of the students on CAM.

Materials and Methods

The study used a primary cross-sectional data collection from students of Cerrahpasa Medical Faculty, Istanbul University, in 2012-2013 academic years. The study group consists of first and sixth class students. The total numbers of first and sixth class students in the school are 502 and 414 respectively. The study did not use sampling as, 916 students on the campus were included. The first and sixth class students were selected because we wanted to compare medical education about CAM. The questionnaire was used for data collection and contains 36 items. It was created through a search of relevant literature and divided into three parts. The first part contains basic demographic details, such as age, gender, family type, class year and health status. The second section contains 20 items which measures the personal knowledge level of the students about types of CAM. The questions (n = 20) contained attitudinal statements using a four-point Likert scale ("I do not know" to "I know exactly"). The third part consists of 5 items to assess the general attitudes towards CAM.

Each item of the third section was measured using a Liker1t scale score of three levels, that is, agree, disagree and uncertain. Face to face interviews were conducted to collect data using the questionnaire. Subjects were given back ground information about the purpose of the study and its methodology and were given the opportunity to ask questions. The questionnaires were distributed before lectures, explaining the purpose of study. Time taken to complete questionnaire was approximately 20 min. Students gave back the completed questionnaires at the same lecture. Names are not used as they are not related to the reliability of the survey. Students who were absent or who did not wish to take part in the study have not been included. All data were entered and analysed in SPSS (Statistical Package for Social Sciences) 21.0. Demographic characteristics and the attitude, knowledge and utilization of CAM were assessed by descriptive statistics. Bi-variate statistic analyses including independent t and Chi-square tests were used to examine the relationships between the demographic characteristics and main measures. Results were considered statistically significant if $p < 0.05$.

Results

A response rate of 79.58% (729/916) was obtained. The students who participated in the survey were aged between 18–44, with a mean age 20.94 ± 2.11. A total of 346 (47.5%) males and 383 (52.%) female students of medical faculty were interviewed. Of the students, 54% (n: 394) were at their first year, 46.0% (n:336) at their sixth year of school. Student's father, 238 (32.16%) had graduated from university and 81 (11.1%) were master-doctorate graduates. Concerning the students' family status, 639 (87.7%) was part of a typical nuclear family. Sixty students (60, 8.2%) had been treated of diseases at some point in their lives (Table 1).

Table 1: Sociodemographic characteristics of students

		N	%
Class	1	394	54.0
	6	335	46.0
Gender	Male	346	47.5
	Female	383	52.5
Father's education	Primary - Middle school leaver	29	4.0
	High school leaver	381	52.3
	University graduate	238	32.6
	Master-Doctorate	81	11.1
Mother's education	Primary - Middle school leaver	85	11.6
	High school leaver	485	66.5
	University graduate	122	4.7
	Master-Doctorate	37	5.1
Family	Nuclear	639	87.7
	Extended	90	12.3
Father's work	Yes	432	59.3
	No	104	14.2
	retired	193	26.5
Mother's work	Yes	108	14.8
	No	592	81.2
	retired	29	4.0
Treatment of diseases	Yes	60	8.2
	No	669	91.2
Does alternative medicine should be taught?	Yes	587	80.5
	NO	142	19.5
Do you Know CAM therapies	Yes	180	24.7
	No	549	75.3

Students' knowledge of CAM between classes was also compared. There were statistically significant differences about the knowledge of those methods (acupuncture, acupressure, yoga, reiki, prayer, meditation massage, dietary, spa). Prayer was the most known modality in all medical

classes students (first year students: 254, sixth year students: 192). The students who participated in the study stated that 433 (%59.4) have some knowledge about the acupuncture (first year students: 229, sixth year students: 204). Acupressure was found to be at least known methods for CAM (first year students: 313, sixth year students: 282) (Table 2).

Table 2: Student's Knowledge of CAM

	class	I do not Know		Only knows the name		I have some knowledge		I know exactly		p
		n	%	n	%	n	%	n	%	
Acupuncture	1	84	21.32	47	11.93	229	58.12	34	8.63	P<0.005
	6	53	15.82	43	12.83	204	60.09	35	11.26	
Acupressure	1	313	79.14	58	14.73	20	5.10	3	0.77	P<0.005
	6	282	84.18	37	11.05	10	2.98	6	1.79	
Aromatherapy	1	160	40.66	88	22.33	127	32.23	19	4.84	p>0.005
	6	126	37.62	70	20.89	112	33.43	27	8.06	
Yoga	1	36	9.13	60	15.22	169	42.89	129	32.76	P<0.005
	6	46	13.73	50	14.92	128	38.21	111	33.14	
Reiki	1	240	60.92	77	19.54	56	14.21	21	5.33	P<0.005
	6	169	50.45	57	17.01	84	25.07	25	7.47	
Prayer	1	50	12.69	12	3.04	78	19.79	254	64.48	P<0.005
	6	51	15.22	7	2.09	85	25.37	192	57.32	
Meditation	1	75	19.03	26	6.60	145	36.80	148	37.57	P<0.005
	6	49	14.62	39	11.64	142	42.38	105	31.36	
Massage	1	26	6.60	15	3.80	138	35.02	215	54.48	P<0.005
	6	28	8.35	34	10.15	125	37.31	148	44.19	
Chiropractic	1	326	82.74	31	7.86	25	6.34	12	3.06	p>0.005
	6	277	82.68	29	8.65	15	4.48	14	4.19	
Hypno therapy	1	73	18.52	69	17.51	171	43.40	81	20.57	P>0.005
	6	47	14.03	36	10.74	191	57.01	61	18.22	
Dietary	1	34	8.62	13	3.30	111	28.17	236	59.91	P<0.005
	6	3	0.90	12	3.58	98	29.25	222	66.27	
Homeopathy	1	288	73.10	42	10.65	42	10.65	22	5.60	P>0.005
	6	247	73.73	46	13.73	30	8.95	12	3.59	
Relaxation	1	244	61.92	42	10.66	57	14.46	51	12.96	P>0.05
	6	122	36.41	30	8.95	78	23.28	105	31.35	
spa	1	27	6.85	23	5.84	134	34.01	210	53.3	P<0.005
	6	35	10.44	28	8.35	115	34.32	157	46.89	

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We tried to determine the attitude for medical students' opinions about complementary therapies by using five statements. We did not find statistically significant differences between student's classes for the opinion "Complementary therapies are a threat to public health" and "Treatments not tested in a scientifically recognized manner should be discouraged". On the other hand, sixth class students stated more positive responses to the statement, "Effects of complementary therapies are usually the result of a placebo effect" than the first two class students. Sixth class students gave more negative responses toward the statement of "Most complementary therapies stimulate the body's natural therapeutic Powers" than first class students. (Table 3).

Table 3: Medical students' opinions about complementary therapies

Opinion	Class	Agree		Disagree		Neutral		p
		n	%	n	%	n	%	
Complementary therapies are a threat to public health	1	79	20	199	50.5	116	29.5	P>0.05
	6	61	18.2	189	56.4	85	25.4	
Treatments not tested in a scientifically recognized manner should be discouraged.	1	181	46	116	29.4	97	24.6	P>0.05
	6	155	46.2	104	31	76	22.8	
Effects of complementary therapies are usually the result of a placebo effect	1	41	10.4	128	32.5	225	57.1	P<0.005
	6	136	40.6	62	18.5	137	40.9	
Complementary therapies include ideas and methods from which conventional medicine could benefit	1	204	51.8	78	19.8	112	28.4	P<0.005
	6	191	57	58	17,3	86	25.7	
Most complementary therapies stimulate the body's natural therapeutic powers	1	211	53.6	77	19.5	106	26.9	P<0.005
	6	190	56.7	40	11.9	105	31.4	

We wanted to know the source of information about the CAM for medical students. Table 4 shows the source of information for CAM therapies.

Table 4: Student's source of information about the CAM

Source of information	n	%
Friends	5	2.8
Family	7	3.9
Lecture	4	2.2
Internet	94	52.2
Tv	49	27.2
Book, Newspaper etc.	21	11.7

Discussion

This study had a high response rate and included a larger number of medical students than any previously published which has considered medical students' attitudes to CAM. Since the last quarter of the 20th century, there is a growing acceptance of traditional/complementary medicine (T/CM) products and practices among the society either locally or globally. This study examined the knowledge and attitude of medical students about complementary and alternative therapies. It has been determined that the majority of students had no knowledge regarding CAM. 24.7% respondents said that they had known alternative medicine therapies.

Medical training period in Turkey is six years. In our medical faculty, we do not have alternative medicine courses in the curriculum. According to the study carried out by kolkman et al., CAM-courses are widely represented in Europe and cover a broad range of therapies. Results of an inventory conducted in The Netherlands in 2008 showed that seven out of eight medical schools do offer some form of CAM-education. Holroyd et al. (2008) stated that 71.9% of nurses agreed that CAM should be integrated into mainstream western medicine. Uzun and Tan (2004) reported that 64.5% of nursing students pointed that CAM should be integrated into the curriculum. In our study, we found that 80.5% of medical students were interested in learning about CAM in a more systematic fashion and held a belief that a pharmacist should be knowledgeable about the nature and use of different CAM modalities. We pointed out that CAM should be integrated into the curriculum at all medical faculty in Turkey.

Many studies found that most of the sources of information about CAM were Tv, internet, books and magazines. In our research, students declared that the main source of information about CAM were internet (52.2%) and Tv (27.2%). Turker (2011) et al. reported that internet was the main source among Turkish medical students for their research. The study done by Pokladnikov (2008) et al. in 2008 pointed that US medical students' use of online information especially internet (81%) about CAM but this situation was 52.9% for Czech pharmacy students. These results are similar to our study. We should have more comprehensive information on CAM as HCWs in medical faculty students.

In our research, when asked to report if they currently had knowledge of different CAM therapies, the respondents stated that they were most acquainted with prayer (64.48%; N =254) and massage (54.48%; N =215) whereas the least familiar CAM therapy was acupressure (0.77%; N =3) for the first year students. Dietary and prayer were the most well known methods for second class students 66.27% and 57.32% respectively. Chez and colleagues found that students had more knowledge about massage, herbal medicine, meditation, and chiropractic models. In 2005, Yeo et al. reported acupuncture as the most and chiropractic, osteopathy, ayuverdic medicine and homeopathy as the least known therapies amongst medical students in Singapore. In 2011, a study conducted by Turker et al. among Turkish medical students proved that acupuncture, hypnosis and mediation are the most well-known and chiropractic, osteopathy and homeopathy as the least self-perceived known therapies. In literature, findings varied among different health profession of students in different countries. While massage, herbal medicine and meditation were the most knowledgeable among American medical students, vitamins, herbals and massage were the best known self-reported modality among Czech pharmacy students.

In our study, there is no difference between the first and sixth classes students for the statements, "Complementary therapies are a threat to public health" and "Treatments not tested in a scientifically recognized manner should be discouraged". For the statement "Complementary therapies are a threat to public health" proportion of neutral, disagree and agree for the first year students were 29.5%, 50.5% and 20 % respectively. These rates for class 6 were 25.4%, 56.% and 18.2% respectively. In a similar study, Turker et al. showed that these proportions were 42.6%, 56.5% and 0.9% respectively. The proportions of neutrals were less among Turkish medical students. On the other hand, quite high positive attitudes were reported among Australian pharmacy (> 80%), Singaporean medical students (92%), and American medical students (> 80%) in the literature. Our findings show the insufficient knowledge among students which was stated in previous studies.
A further important result that we found was the significant differences between class for the statements "Effects of complementary therapies are usually the result of a placebo effect", "Complementary therapies include ideas and methods from which conventional medicine could benefit" and "Most complementary therapies stimulate the body's natural therapeutic Powers". Kolkman et al. reached a similar conclusion in their 2011 study. Medical students are aware of the importance of CAM as most (81.4%) are aware of the possible safety issues, side effects and interactions with regular drugs.

Conclusions

Our study affirmed positive attitudes among first and sixth year medical students toward CAM therapies. We found that medical students in our faculty also had limited knowledge about CAM therapies. Medical students also have an understanding of the importance of CAM education in the medical curriculum, specifically how it will positively influence professional attitude and stimulate the doctor–patient relationship. As the use of CAM therapies is increasing day by day, in order to be aware of the possible negative effects of CAM modalities, health care providers should make more efforts to update their knowledge and access to reliable resources regarding the safety and efficacy of CAM therapies.

We recommended that medical schools could consider using the wealth of international knowledge and experience to integrate CAM education in the medical curriculum in Turkey. Future studies will be directed toward selecting CAM curricula for medical faculty education systems.

The present study included a limited number of CAM therapies, while respondents may know other types of CAM therapies not listed in the questionnaire. Despite these limitations, this study can draw attention to the medical students' knowledge and attitude towards use of CAM. Second, this study is based on a small sample. So, it should be repeated amongst larger medical students in Turkey for the medical faculty.

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