

# KNOWLEDGE OF AND ATTITUDES TOWARD COMPLEMENTARY AND ALTERNATIVE MEDICINE AMONGST MEDICAL STUDENTS IN A TURKISH MEDICAL SCHOOL

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## ABSTRACT

**Objectives:** To determine the knowledge level and attitude of Gulhane Military Medical School students towards complementary and alternative medicine (CAM).

**Methodology:** This descriptive study was conducted on April 2008. Total 401 students participated in the study. The questionnaire contains demographic questions, and multiple-choice questions related to 14 frequently used CAM therapies. We also asked 5 more questions to assess students' attitudes toward CAM. Information was collected through a questionnaire with multiple choice questions related to fourteen frequently used CAM therapies.

**Results:** Knowledge of meditation, Tai Chi, ayurvedic medicine, massage, reiki, spirituality (pray) and herbal therapy were found statistically different between male and female students. Hypnosis was the most known modality in all medical classes. We found that internet was the main source of information about CAM modalities for both gender. The proportion of students who believe the benefits of CAM modalities in medicine was found 64.9%.

**Conclusions:** Although the positive attitude toward CAM was found to be high in our study group, it is lower than most of the studies conducted in different countries.

**KEYWORDS:** Complementary, Alternative Medicine, Medical Students.

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## INTRODUCTION

There has been a significant increase in the use of complementary and alternative medicine (CAM) in recent years worldwide.<sup>1-4</sup> There is also significant and growing interest in the introduction and integration of CAM instruction into medical curriculums not only in USA all over the world, parallel to the increase of CAM use.<sup>5-8</sup> There were many studies which were conducted in different countries to determine the knowledge and attitudes of medical, pharmacy and nursing school students, staff and faculties on CAM.<sup>8-17</sup> Although in most of the studies, the knowledge, positive

interest and attitude of students were reported very high, the results were varied according to gender, classes or school that students attended.<sup>5,10-16</sup>

The aim of this study was to determine the knowledge level of Gulhane Military Medical School students on complementary and alternative medicine (CAM) and also to assess whether knowledge level and positive attitude differ with respect to medical class and gender or not.

### METHODOLOGY

This descriptive study was conducted on April 2008. We sought to enroll all students'. Four hundred one students participated in the study (participation rate= 62.6%). The questionnaire we used contained demographic questions without name identification, and multiple-choice questions related to 14 frequently used CAM therapies.

We asked five questions to assess students' attitudes toward CAM similar to ones Chez et al used in their published study on American medical students'.<sup>18</sup> The questionnaire was offered to the students in the first three medical classes during their course session in lecture theatres and to the students in the last three classes' in their working rooms. Two investigators were ready to respond the questions of first three classes. Because of their busy clinical activities, the participation of later three classes were low.

Table-I: Characteristics of students (Ankara, 2008)

Characteristics	Total= 401, n (%)
Gender	
<i>Male</i>	374 (93.3)
<i>Female</i>	27 (6.7)
Medical class	
1	73 (18.1)
2	56 (14.0)
3	91 (22.7)
4	68 (17.0)
5	72 (18.0)
6	41 (10.2)

We did not discuss anything related to CAM with the students before or after they completed the survey. The data were analyzed by using SPSS (version 11.0, Chi., Il., USA). Descriptive statistics were presented as frequency and proportions. Chi square test was used to evaluate the significance of difference. A p value of <0.05 was accepted as statistically significant.

### RESULTS

Of the total 401 students, 374 were male (93.3%) and 27 were female (6.7%). The biggest group was third year medical students while the sixth class students were the smallest one (Table-I).

Knowledge of meditation, Tai Chi, ayurvedic medicine, massage, reiki, spirituality (pray) and herbal therapy were found statistically different between male and female students. Female students know more about Tai Chi, ayurvedic medicine, reiki, whilst the males had more

Table-II: The knowledge of students about CAM modalities according to gender (Ankara, 2008)

CAM modalities	Female (n=27)(%)	Male (n= 374)(%)
Biofeedback	37.0	30.7
Hypnosis	77.8	89.8
Meditation	66.7	84.8
Tai Chi #	40.7	28.1
Acupuncture	81.5	81.8
Ayurvedic medicine #	33.3	17.1
Chiropractic	14.8	12.8
Massage #	55.6	60.7
Osteopathy	14.8	27.8
Reiki#	48.1	23.0
Spirituality #	51.9	69.0
Herbal medicine #	40.7	73.3
Homeopathy	22.2	16.6
Nutritional support #	40.7	58.3

Proportions represent the choice for know something of # represents for the comparisons which have p value <0.05

knowledge about meditation, massage, spirituality (pray) and herbal therapy ( $p < 0.05$ ). Acupuncture was the most known modality among female students while hypnosis was the first among males (Table-II).

There were also statistically significant differences about the knowledge of three CAM modalities between medical classes. Third year class students knew more about osteopathy and spirituality while the fifth year class students were the best for feedback ( $p < 0.05$ ). Hypnosis was the most known modality in all medical classes. Meditation, acupuncture, herbal medicine, spirituality, massage were all known at least to half of the students in all classes (Table-III).

We found that awareness about use of CAM information sources was higher in female students than male students. Students obtained information on CAM mainly through internet (92.6% vs. 87.2% for female and male students, respectively), books (66.7% vs. 54.8%), newspapers/journals (40.7% vs. 29.9%), and TV/radio (40.7% vs. 27.2%). The differences were not statistically significant ( $p > 0.05$ ).

The proportion of students who believe the benefits of CAM modalities in medicine was

found 64.9%. Although female students had more positive attitude toward CAM than male students, there was no statistically significant difference (77.8% vs. 64.5%,  $p = 0.160$ ).

We evaluated the attitude towards CAM by using 5 questions and we found some statistically significant differences between different medical classes. In general the first three year medical class students had more positive attitudes towards CAM. While fifth year medical class students had the most negative attitude (Table-IV).

## DISCUSSION

Nowadays complementary and alternative medicine modalities are more commonly included in medical schools' curriculum. Although there is no specific course related with CAM modalities in our medical school curriculum, some faculties talk about some CAM modalities during their courses. Medical training period in Turkey is six years. Since our medical school is a military institution, the number of female students who are accepted is limited. But the ratio of female and male students is close to each other in other medical schools in Turkey. Although the number of the students

Table-III: The knowledge of students about CAM modalities according to medical class (Ankara, 2008)

CAM modality	Medical class						P value*
	1st%	2nd%	3rd%	4th%	5th%	6th%	
Biofeedback	20.5	19.6	20.9	36.8	55.6	36.6	<0.001
Hypnosis	91.8	94.6	91.2	88.2	86.1	78.0	>0.05
Meditation	86.3	85.7	81.3	86.8	81.9	78.0	>0.05
Tai Chi#	26.0	26.8	30.8	29.4	29.2	31.7	>0.05
Acupuncture	79.5	83.9	84.6	89.7	79.2	68.3	>0.05
Ayurvedic medicine#	20.5	14.3	11.0	17.6	23.6	26.8	>0.05
Chiropractic	16.8	10.7	4.4	16.2	15.3	19.5	>0.05
Massage#	57.5	69.6	68.1	60.3	50.0	53.7	>0.05
Osteopathy	17.8	25.0	45.1	27.9	18.1	19.5	<0.001
Reiki#	19.2	30.4	24.2	23.5	30.6	19.5	>0.05
Spirituality#	68.5	75.0	76.9	61.8	58.3	63.4	0.011
Herbal medicine#	75.3	66.1	69.2	77.9	72.2	61.0	>0.05
Homeopathy	11.0	21.4	18.7	13.2	25.0	9.8	>0.05
Nutritional support#	57.5	67.9	68.1	45.6	47.2	19.5	>0.05

Proportions represent the choice for know something of.

\* Pearson chi-square test results.

Table-IV: Medical students' attitudes towards complementary therapies (Ankara, 2008)

Item	Medical class						p value #
	1st%	2nd%	3rd%	4th%	5th%	6th%	
Complementary therapies are a threat to public health							
<i>Strongly agree and agree</i>	6.8	3.6	8.8	8.8	26.4	14.6	0.001
<i>Neutral</i>	31.5	42.9	36.3	33.8	29.2	22.0	
<i>Strongly disagree and disagree</i>	61.7	53.5	54.9	57.3	44.4	63.4	
Treatments not tested in a scientifically recognized manner should be discouraged.							
<i>Strongly agree and agree</i>	37.0	33.9	40.6	45.5	58.4	48.8	0.087
<i>Neutral</i>	30.2	35.7	29.7	35.3	20.8	26.8	
<i>Strongly disagree and disagree</i>	32.8	30.4	29.7	19.2	20.8	24.4	
Effects of complementary therapies are usually the result of a placebo effect							
<i>Strongly agree and agree</i>	15.1	28.6	22.0	25.0	48.6	39.0	
<i>Neutral</i>	69.8	50.0	51.6	44.1	29.2	29.3	<0.001
<i>Strongly disagree and disagree</i>	15.1	21.4	26.4	30.9	22.2	31.7	
Complementary therapies include ideas and methods from which conventional medicine could benefit							
<i>Strongly agree and agree</i>	58.8	67.8	70.3	58.8	68.1	68.3	
<i>Neutral</i>	28.2	28.6	22.0	29.4	19.4	14.6	0.267
<i>Strongly disagree and disagree</i>	12.4	3.6	7.7	11.8	12.5	17.1	
Most complementary therapies stimulate the body's natural therapeutic powers							
<i>Strongly agree and agree</i>	49.3	66.0	46.1	36.8	29.1	55.1	
<i>Neutral</i>	37.0	30.4	42.9	42.6	37.6	24.4	<0.001
<i>Strongly disagree and disagree</i>	13.7	3.6	11.0	20.6	33.3	19.5	

# Pearson chi-square test results.

in each medical class is approximately the same, the response rates differed in the study. While the response rate was 91% for first year medical class, it was approximately 40% for sixth year class. The response rate among male students was 61.5% as compared to 80% for female students.

The most known CAM therapeutic modalities among students were hypnosis, acupuncture and mediation. Yeo and et all reported acupuncture as the first known modality better amongst medical students in Singapore.<sup>16</sup>

It is found that knowledge of CAM modalities among medical students differ in different countries. Massage, herbal medicine and meditation were the most knowledgeable among American students,<sup>18</sup> acupuncture, meditation and massage were the highest self-perceived knowledge amongst the Australian students,<sup>19</sup> whilst the acupuncture and homeopathy were the best-known methods, primarily from courses or seminars among German medical students.<sup>20</sup> The knowledge of CAM among medical students in USA<sup>9-14</sup> was more than our

group that might be the result of CAM integration in the medical curriculum in USA but our students had more knowledge of CAM than British and Singaporean medical students.<sup>15-16</sup>

In our study we also found that the knowledge of CAM modalities differs with respect to gender and medical class. The differences for the sources of information between genders might be the explanation of why female students knew more about Tai Chi, ayurvedic medicine, and reiki. In Turkey most of the people are not aware of Tai Chi, ayurvedic medicine, reiki but people who use internet and people who watch TV programs related with health have higher probability to be aware of these modalities. We do not have any idea why male students are more knowledgeable about CAM therapeutic modalities. We also found differences for knowledge of three CAM modalities among different classes of students. In general the last three classes were more aware of biofeedback. The difference for osteopathy was found because of third year class medical students' higher knowledge and this might be due to pathology course they took in their curriculum. It was surprising to find out higher knowledge of spirituality in the first three class students. May be the last three class students were aware of spirituality but since they had more experience with positive science, it might be the reason for them not to accept spirituality (praying) related with medicine.

In our study group internet, books and newspaper/journals were the main information sources for CAM. The sources among Czech pharmacy students were found as internet, journals and books. Only 10% of Czech students relied on other sources of information such as television, radio, lectures on CAM, whilst at least 20% of our study group stated TV/ radio.<sup>21</sup>

In our study we found the proportion of students who indicated positive attitude toward complementary and alternative medicine as 64.9%. There are many studies which report higher proportions. The positive general attitude is reported more than 80% among medi-

cal students in USA,<sup>9-14</sup> and more than 85% amongst medical students in Singapore.<sup>16</sup> But Furnham et al and, Brinkhaus et al have reported lower positive attitudes proportions than ours among British and German medical students.<sup>7,15</sup> In some studies female medical students were found to have more positive attitude towards CAM than male students.<sup>14,22</sup> We could not find statistically significant difference in our results as compared to other studies.

The attitudes toward CAM differ in different classes. In general the first three class students had more positive attitudes towards CAM whilst the fifth medical class students had the most negative attitude. Our result was consistent with the studies which were conducted among British medical students and Czech pharmacy students.<sup>15,21</sup>

Our study has some limitations. It was conducted in a military medical institution where female student numbers were limited and may not be generalizable to other institutions and settings in our country. The lower participation rates for the last three medical classes may affect the final results.

Comparative studies in other medical schools in Turkey may help to provide more definite assessments not only to determine the level of knowledge and the attitudes of medical students on CAM but also what students think about the integration of CAM courses in medical curriculum.

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