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Use, Attitude, and Knowledge Levels of Medical Faculty Students Towards Traditional and Complementary Medicine Practices: Analytical Study

Tıp Fakültesi Öğrencilerinin Geleneksel ve Tamamlayıcı Tıp Uygulamalarına Yönelik Kullanım, Tutum ve Bilgi Seviyeleri: Analitik Çalışma

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ABSTRACT Objective: In our study, we aimed to learn the use, attitude, and knowledge levels of medical school students about traditional and complementary medicine (TCM) practices, which are becoming increasingly common in the world and our country. **Material and Methods:** This cross-sectional study was conducted on Kahramanmaraş Sütçü İmam University Medical Faculty students between June and September 2018. The research consisted of 240 students who voluntarily agreed to take part and completed the questionnaires. Our questionnaire was created by scanning the literature and considering the 2014 "TCM Implementation Regulation". The questionnaire form consists 41 questions. **Results:** Most students (57.9%) obtained information about TCM from the internet. The best-known methods in the TCM regulation were leech application (80%), acupuncture (79.2%), and hypnosis (76.2%). 75% of students used TCM practices. The desire to recommend TCM methods to their patients and to receive education about these methods was found to be associated with a higher level of knowledge about TCM and the use of TCM. 64.2% of the students want TCM to be included in the medical education curriculum, and 77.9% want to receive TCM training. **Conclusion:** Medical faculty students have a positive perception and high interest about TCM. They are mostly positive about integrating TCM into the medical school curriculum. With the arrangements to be made in the medical education curriculum, the level of knowledge and awareness of future physicians will increase. In addition, the gap in TCM practices, which are widely used today, will be filled and they will be able to help their patients more.

Keywords: Traditional medicine; medicine; students; knowledge; attitude

ÖZET Amaç: Çalışmamızda; dünyada ve ülkemizde kullanımı giderek yaygınlaşan geleneksel ve tamamlayıcı tıp (GETAT) uygulamaları ile ilgili tıp fakültesi öğrencilerinin kullanım, tutum ve bilgi düzeylerinin öğrenilmesi amaçlanmıştır. **Gereç ve Yöntemler:** Kesitsel tipteki bu araştırma, Haziran-Eylül 2018 tarihleri arasında Kahramanmaraş Sütçü İmam Üniversitesi Tıp Fakültesi öğrencilerinde yapılmıştır. Çalışmaya katılmayı gönüllü olarak kabul eden ve anket formlarını eksiksiz dolduran 240 öğrenci çalışmaya dâhil edilmiştir. Anketimiz literatür taranarak ve 2014 "GETAT Uygulama Yönetmeliği" dikkate alınarak oluşturulmuştur. Anket formu 41 sorudan oluşmaktadır. **Bulgular:** Öğrencilerin çoğunluğu (%57,9) GETAT hakkındaki bilgiyi internetten edinmiştir. GETAT yönetmeliğindeki yöntemlerden en iyi bildikleri ise sülük uygulaması (%80), akupunktur (%79,2) ve hipnozdur (%76,2). Öğrencilerin %75'i GETAT yöntemlerini kullanmaktadır. GETAT yöntemlerini hastalarına önerme ve bu yöntemlerle ilgili eğitim alma isteğinin GETAT hakkında daha yüksek düzeyde bilgi sahibi olma ve GETAT kullanımı ile ilişkili olduğu bulunmuştur. Öğrencilerin %64,2'si GETAT'ın tıp eğitimi müfredatında yer almasını, %77,9'u GETAT hakkında eğitim almayı istemektedir. **Sonuç:** Tıp fakültesi öğrencileri GETAT hakkında olumlu bir algıya ve yüksek ilgiye sahiptir. GETAT'ın tıp fakültesi müfredatına entegrasyonuna çoğunlukla olumlu bakmaktadırlar. Tıp eğitimi müfredatında yapılacak düzenlemeler ile geleceğin hekimlerinin bilgi düzeyleri ve farkındalıkları artacaktır. Bunun yanı sıra günümüzde çok fazla kullanılan GETAT uygulamaları konusundaki boşluk doldurulacak ve hastalarına daha fazla yardımcı olabileceklerdir.

Anahtar Kelimeler: Geleneksel tıp; tıp; öğrenci; bilgi; tutum

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Today, people use traditional, complementary, and alternative medicine practices, which are the result of their own health cultures and the treatment and advice of modern medicine, with increased interest and curiosity.[1] According to the World Health Organization (WHO), 60-90% of the population in developing countries use traditional medicine. In developed countries, this rate exceeds 40%.[2] Traditional and complementary medicine (TCM) usage rate was 60.5% due to the first nationwide study in Türkiye.[3] The issue has been raised that health workers should increase their knowledge of these methods' implementation, impact, and reliability due to the increase in TCM practices.[4] Physicians may encounter questions about the methods and practices of TCM during work and in their daily lives. Therefore, physicians must know to answer questions on this issue, regardless of their opinion.[5] Studies in various patient groups related to TCM practices have increased in recent years, but studies involving the opinions of med school students regarding TCM practices are in the minority.[6,7] These studies are essential for directing the medical education curriculum.[8] These goals can only be achieved through TCM's medical education curriculum through evidence-based medical-based integration. In this respect, we aim to evaluate the usage, attitude, and knowledge levels of medical school students who are future physicians about TCM practices.

MATERIAL AND METHODS

The cross-sectional descriptive study covering Kahramanmaraş Sütçü İmam University Faculty of Medicine students was carried out between June and September 2018 by distributing questionnaire forms to students between classes and at the end of the course. The whole population consisted of 630 people. The sample number calculated with a 5% margin of error and 95% confidence interval according to the random sampling method was 239 students. Two hundred forty students (126 women, 114 men) who volunteered to participate in the study and completed their questionnaire were included. The approval of the ethical board for the study is taken from the Kahramanmaraş Sütçü İmam University Medical Faculty Clinical Studies Ethics Committee (date: July 4, 2018, no: 17). Participants were informed before the study, and their consent was obtained. The study complied with the principles of the Declaration of Helsinki. As a data collection tool for research, a survey form of 41 questions has been prepared by researchers as a result of literature screening. The first chapter contains the students' socio-demographic characteristics, the second part contains the use of TCM practices, and the third part contains information about TCM and how they learned the information. Their attitudes about TCM and the fourth part includes questions that question questions about the Health Ministry's TCM Regulation.

STATISTICAL ANALYSIS

Statistical data analysis was conducted in the statistical package program for the SPSS Statistics (SPSS for Windows, Version 22.0, IBM, Armonk, NY). The descriptive statistics used were the percentage, average±standard deviation. The chi-square test was used to compare analytical expressed data. The values $p<0.05$ in the comparisons were considered statistically significant.

RESULTS

Students divided into groups pre-clinical periods (1-3rd Classes) and clinical periods (4-6th Classes) to classify data easily. The pre-clinical period was 145, and the clinical period was 95 students. The socio-demographic characteristics of the students are given in Table 1.

The practices under the Health Ministry TCM regulation mostly include Medicinal leech therapy (80%), acupuncture (79.2%), and hypnosis (76.7%), with which students were familiar. While the most known TCM methods in the pre-clinical group were hypnosis and medicinal leech therapy (both rate 83.4%), the most known methods in the clinical group were acupuncture and medicinal leech therapy (78.9% and 74.7%, respectively). The least known of these practices were apitherapy (3.8%), prolotherapy (3.8%), and chiropractic (4.6%). The least known modalities in both groups were apitherapy (2.8% of the pre-clinical group, 5.3% of the clinical group) and

prolotherapy (3.4% of the pre-clinical group, 4.2% of the clinical group). While hypnosis and cupping therapy were known significantly more in the pre-clinical period, phytotherapy and mesotherapy were also significantly more known in the clinical period. Music therapy (22.9%), phytotherapy (20.8%), and cupping therapy (12.5%) were the TCM practices that students used most often. Other TCM practices that students were familiar with are given in Table 2 (the Health Ministry TCM ve other TCM practices).

The TCM practices that students recommended the most were music therapy (56.3%), acupuncture (47.1%), and medicinal leech therapy (41.7%), respectively. Medicinal leech therapy was significantly more recommended by clinical students (p=0.042). The practices that students wanted to study most were acupuncture (69.6%), music therapy (67.1%), and hypnosis (62.5%). Although it was not statistically significant, pre-clinical students thought to recommend TCM methods to patients more, they wanted TCM departments to be opened at universities and to receive training on this subject, and TCM practices to be integrated into the medical curriculum. Although the number of students receiving training on TCM was slightly higher in clinical term students, clinical term students mostly recommended TCM methods to those who were not sick.

Only 15% of students have considered the level of information as "good" or "very good" about TCM practices. There was a significant difference in information level between pre-clinical and clinical groups (p=0.049). Bilateral comparisons found that the difference was due to "very little" and "good" options. In the pre-clinical group, which said "very little", the clinical group that said "good" was significantly higher. There was no significant difference between the groups in terms of other suggestions (p>0.05) (Table 3).

Most students (57.9%) obtained information about TCM from the internet. Healthcare professionals (22.5%) and health databases (7.9%) were the sources from which information was obtained the least (Figure 1). While the pre-clinical period acquired its knowledge of TCM from more families, the clinical period obtained more from books/journals/newspapers. This situation was also statistically significant.

TABLE 1: Socio-demographic features of students.

	n	%
Age		
$\bar{X}$±SD	21.68±2.26	
Median (minimum-maximum)	21 (18-32)	
Gender		
Man	114	47.5
Woman	126	52.5
Class		
1st class	45	18.8
2nd class	50	20.8
3rd class	50	20.8
4th class	37	15.4
5th class	14	5.8
6th class	44	18.3
Longest living place		
City center	169	70.4
Town	43	17.9
Village	28	11.7
Income status		
Income is less than the expense	26	10.8
Income equal to the expense	132	55.0
Income is more than the expense	82	34.2
Mother's education status		
Illiterate	20	8.3
Literate	12	5.0
Primary school	75	31.3
Middle school	24	10.0
High school	55	22.9
University	54	22.5
Father's education status		
Illiterate	3	1.3
Literate	4	1.7
Primary school	42	17.5
Middle school	27	11.3
High school	50	20.8
University	114	47.5
Mother working status		
Working	43	17.9
Not working	183	76.3
Retired	14	5.8
Father working status		
Working	151	62.9
Not working	15	6.3
Retired	74	30.8

SD: Standard deviation.

TABLE 2: Distribution of TCM practices that all students have knowledge.

TCM practices	n	%	TCM practices	n	%
Exercise	215	89.6	Relaxation techniques	96	40.0
Diet	193	80.4	Ozone therapy	66	27.5
Prayer	178	74.2	Aromatherapy	38	15.8
Vitamin supplementation	177	73.8	Therapeutic touch	33	13.8
Massage	169	70.4	Mesotherapy	32	12.3
Phytotherapy	166	69.2	Reflexology	27	11.2
Spa	163	67.9	Homeopathy	23	9.6
Cupping therapy	161	67.1	Biofeedback	21	8.8
Leech	147	61.3	Akupressor	10	4.2
Acupuncture	144	60.0	Chiropractic	9	3.8
Musical therapy	134	55.8	Ayurvedic	7	2.9
Yoga	116	48.3	Prolotherapy	7	2.9
Hypnosis	113	47.1			

n: Number; %: Column percentage; Multiple options are selected; TCM: Traditional and complementary medicine.

75% of students (n=180) reported that they had previously used TCM practices. The most common reason for TCM practices among students was to reduce stress (73.3%, n=132). Solving health problems and comfortable sleep/insomnia were the reasons that followed it (65.6%, 51.1%). Two-thirds of students using the TCM practices (67.2%, n=121) said they used the TCM practices because they heard it was useful. In our study, more than ninety percent of students who used the TCM practices stated that their treatment was successful (26.7%), partially successful (38.9%), and symptoms were mitigated (26.1%). Students used TCM practices in their family or environment 81.7%. 66.7% of students recommend TCM practices to non-patients, and 68.3% recommend them to patients. 64.2% of the courses related to TCM practices were found in the medical curriculum, and 77.9% of the courses in TCM training responded positively. Only 9.6% of the students attended any TCM training. 74.6% of students want TCM departments to be established at universities. 12.6% of respondents have stated that they are familiar with the Health Ministry's TCM Practices Regulation.

When examining the relationship between the students' use of TCM and their parents' education and working status, maternal education has positively impacted TCM use (p=0.016). Phytotherapy use was significantly greater for those living in the city center (p=0.009) and those whose fathers are not working (p=0.030). There was no statistically significant relationship between the gender of the students, the levels of information about TCM, the working status of their parents, the status of their father's education and the clinical period in which they are present, and the use of TCM practices (p>0.05). There was a statistically positive relationship between students recommending TCM to their patients and their knowledge levels of TCM, their use of TCM, and the use of TCM in their families (p=0.001). There was a positive relationship between TCM training expectations and TCM knowledge levels, and TCM use in their families (p=0.001, p=0.006).

DISCUSSION

Although beneficial, it is important for public health that TCM practices, which have many side effects, are well-known and applied only by physicians. Patients still mostly refer to non-physician people for TCM practices.[9] This study is the first of the studies on TCM among medical faculty students in Kahramanmaraş. The number of studies examining the knowledge levels and attitudes of health professionals and medical students about TCM practices in Türkiye is increasing.[7,10-12] These studies are valuable regarding the spread of TCM and its integration into the medical school curriculum in the future.

TABLE 3: Comparison of students' answers to various questions about TCM.

	Group						
	Pre-clinical period (1, 2, 3rd classes)		Clinical period (4, 5, 6th classes)		Total		
	n	%	n	%	n	%	p*
Would you recommend TCM practices to those who are not sick?							
Yes	95	66.4	65	68.4	160	67.2	0.749
No	48	33.6	30	31.6	78	32.8	
Have you ever recommended TCM practices to patients, or would you consider recommending them?							
Yes	102	70.8	62	65.3	164	68.6	0.364
No	42	29.2	33	34.7	75	31.4	
Would you like TCM departments to be established in your university?							
Yes	112	77.2	67	70.5	179	74.6	0.243
No	33	22.8	28	29.5	61	25.4	
Would you like to receive training on TCM practices?							
Yes	115	79.3	72	75.8	187	77.9	0.520
No	30	20.7	33	24.2	53	22.1	
Have you attended any training on TCM practices?							
Yes	13	9.0	10	10.5	23	9.6	0.688
No	132	91.0	85	89.5	217	90.4	
Would you like TCM practices to be integrated into the medical school curriculum?							
Yes	96	66.2	58	61.1	154	64.2	0.415
No	49	33.8	37	38.9	86	35.8	
How do you evaluate your level of knowledge about TCM practices?							
None	11	7.6	5	5.3	16	6.7	0.049
Very little	53	36.6	22	23.2	75	31.3	
Little	64	44.1	49	51.6	113	47.1	
Good	15	10.3	19	20.0	34	14.2	
Very good	2	1.4	0	0.0	2	0.8	

TCM: Traditional and complementary medicine.

*Chi-square test.

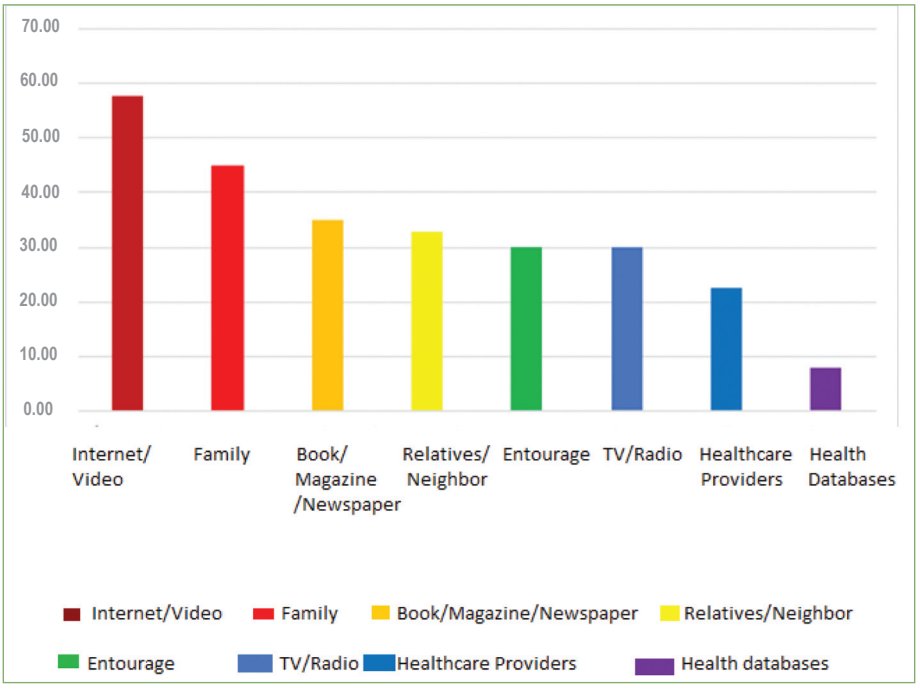

FIGURE 1: Distribution of information sources about students' traditional and complementary medicine practices.

Our study determined that leech, acupuncture, and hypnosis were the best-known methods among medical faculty students in the TCM regulation. The least known of these practices were apitherapy, prolotherapy, and chiropractic. In the study in which 90 physicians and 513 medical students participated at Bezmiâlem University, the methods that medical students had the most knowledge about the methods in the regulation were acupuncture, leech therapy, and hypnosis, and the methods they had the least knowledge of were apitherapy and prolotherapy.[13] In the study by Ayraler et al. on medical students, the best-known methods in the regulation were cupping, acupuncture, and hypnosis, the least known ones were leech therapy, chiropractic, and prolotherapy.[14] In a study conducted in Arabia, massage, phytotherapy, and acupuncture were the best-known TCM practices by students.[15] In the study conducted with nursing students in Balıkesir, they had never heard of chiropractic (91.8%), shiatsu (90.7%), bioresonance (85.0%), homeopathy (77.5%), phytotherapy (63.2%) practices.[16] They stated that they had sufficient knowledge of yoga (31.1%), meditation (25.7%), dietary support (23.9%), music therapy (21.4%), and acupuncture (14.6%). A study conducted with health services vocational school students (First Aid and Emergency, Home-Care Service and Child Development program) stated that they reached the most information about TCM from the internet and that the most common practices among the 15 methods accepted in the TCM practices regulation were; cupping therapy, leech therapy, and hypnosis.[17] In studies conducted with medical school students in Türkiye, the level of knowledge about TCM practices in the regulation reached approximately the same results. In our study, unlike some studies, the fact that medicinal leech therapy was the most well-known method may be due to the cultural differences between cities. The fact that medicinal leech therapy is preferred by the people in Kahramanmaraş and its surroundings may be because medicinal leech therapy has a long-standing traditional history and is easily accessible due to its widespread use. The reason why chiropractic, apitherapy, prolotherapy, and osteopathy methods were known among students at a very low level, similar to other studies, may be that these methods are rarely used neither in school nor in the media. However, the fact that students have a more positive attitude towards medicinal leech therapy, acupuncture, and hypnosis methods that they were most

knowledgeable about can be perceived as their awareness of these methods due to the high popularity of these treatments in the Turkish population. From these results, it is stated that the students know the subjects that are included in the medical school curriculum in our country or that are also mentioned in modern medicine; It can be interpreted that they do not have an opinion on a subject such as chiropractic that they have never heard of in school or the media.

Our study determined that the students frequently used music therapy, phytotherapy, and cupping in TCM practices. When these three most preferred methods were examined according to the students' socio-demographic characteristics, phytotherapy was statistically significantly higher in those living in the city center and those whose fathers did not work. Living in the city center may have positively affected the frequency of use of phytotherapy in terms of ease of access to herbalists. The fact that TCM practices are cheaper for those who use them may explain why TCM as a treatment option is preferred in those whose fathers are not working. In a study conducted with 280 nursing students using the Attitude Scale towards Complementary and Alternative Medicine, 38.9% of the students never used complementary medicine methods.[16] It was determined that the most used methods were music therapy (49.6%), dietary support (40.4%), yoga (19.3%), and meditation (18.9%). In the same way, these results are equivalent to the other work done in our country.[7,8,18] The cultural histories of cities and countries may be considered effective in determining the TCM practices used by students.

When examining the relationship between the students' use of TCM and their parents' learning and working status, maternal education has positively impacted TCM use (p=0.016). There was no statistically significant relationship between the gender of the students, the levels of information about TCM, the working status of their parents, the status of their father's education and the clinical period in which they were present, and the use of TCM practices (p>0.05). Sönmez et al., unlike our study, determined that the student's knowledge about TCM had a positive effect on their having TCM practices.[8] Noiesen et al. found that women apply more often than men, according to their work on 485 patients who have applied to the clinic.[19] Our study found that increasing the level of education of the mother affected the student's use of TCM in a positive way. The training level and attitude toward TCM practices were examined in the studies conducted, and the attitudes toward TCM were found to be more positive.[20,21] As a result, it can be thought that people with a high level of education are more dissatisfied with modern medicine and are more curious about different promising methods.

The most recommended TCM methods by the study groups were music therapy, acupuncture, and medicinal leech therapy, respectively. There was a significant difference between student groups in recommending only medicinal leech therapy. The reason for this difference may be that medicinal leech therapy in the pre-clinical period was started to be taught in the lessons, and their families were affected by their suggestions and use. In our study, it was found that the pre-clinical period of learning TCM knowledge from the family was higher than the clinical period. Music therapy is recommended to patients in the first place because they think that the change that music creates in the soul has an effect on the human body and that they experience it by listening to music. Still, the student lacks knowledge about music therapy is obvious.[22] As understood by many studies on acupuncture, it may be frequently recommended by students due to its thousands of years of history, its popularity in our country and the world, and the increase in the experience and evidence-based studies of practitioners and practitioners on its effectiveness.

In our study, only 15% of students considered the level of information as 'good' or 'very good' about TCM practices. Only 9.6% of the students attended any TCM training. In the same way, Ayraler et al. work with medical students, 12.6% of the students were familiar with the regulations in our study.[14] In a study conducted on physicians in Sweden in 2012, 95.7% of physicians were found to have no knowledge of TCM or have low knowledge of TCM.[23] Many studies conducted with the participation of both physicians and medical students found

that TCM knowledge was low. This lack of information means that health workers cannot take the time to use these methods because of the workload, and the lack of information from medical students in this area is not included in the medical education curriculum.

WHO emphasizes the effect of mass media and the internet on an individual's orientation to TCM practices.[24] In our study, most students (57.9%) obtained information about TCM online. Healthcare professionals and health databases were where information was obtained the least. The frequency of acquiring information from the family was significantly higher in the pre-clinical group (Grades 1-3) compared to the clinical group (Grades 4-6), while obtaining information from a book/magazine/newspaper was significantly higher in the clinical group. A study conducted on medical faculty students, assistants, and faculty members in the USA found that the internet was used as a TCM information source at a rate of 75-80%.[25] A study with the students of Cerrahpaşa Faculty of Medicine determined that the main source of information about TCM was the internet and TV.[12] In our study, 77.9% of students wanted to receive training on TCM, clearly showing that they want to receive this information from medical education, not from the internet or nearby. It is also possible to inform our society about TCM through mass media. The pre-clinical group acquired more TCM information from the family compared to the clinical group because they are in contact with their families more frequently. After all, it takes time to adapt to the new university environment. They are in the process of getting used to it since it is their first year at university. The reason why the clinical group preferred the book/magazine/newspaper more frequently than the other group in acquiring TCM information may be that they encountered TCM information while reading books and magazines as a result of their efforts to reach evidence-based information for the development of their clinical skills in the 4th, 5th and 6th grades. Subjects related to TCM have not yet been included in the basic education program of the medical school curriculum in our country; however, it is known that it is included as an elective course in some medical faculties.[26,27] These results reveal deficiencies regarding TCM practices in medical school education in our country and that some changes should be made in the medical education curriculum.

In our study, 75% of students (n=180) said they used any TCM method due to stress reduction, health problem-solving, and insomnia. Clinical students stated the reasons for using the TCM method mostly as an addition to medical treatment and anxiety depression. In the study by Karahan et al., it was observed that medical students use TCM practices most for muscle pain complaints and cold/flu.[28] In 2015, Doğanay et al. found that medical students used TCM practices more "for relaxation".[29] Medical students are under great pressure in terms of heavy education conditions and specialization exam anxiety, which increases as the education years progress. Therefore, the frequency of needing additional treatment and resorting to TCM methods to relieve increased anxiety and depression may have increased in clinical students. In our study, similar to these studies, TCM was preferred more in the clinical period for anxiety and depression may be that anxiety and depression increase as the number of episodes increases. They may use these methods for self-treatment first. In addition, more than ninety percent of students who used the TCM method in our study had been successful and partially successful, and the symptoms were mild, indicating that they were receiving more positive results than they were thought to be. In our study, as the students' knowledge about TCM increased, their recommendations for TCM to their patients increased significantly. Students' and families use of TCM practices positively affected their recommendation of TCM practices to their patients. It has significantly impacted the desire to receive education, and their families prefer TCM practices. Therefore, it is seen that as the level of information about TCM increases, a positive attitude will increase.

LIMITATIONS

Since the data of our study is based on a single university and a single faculty, it cannot be generalized to the population. This situation constitutes one of the limitations of our study. Our study started in the pre-pandemic period, and while it was one of the first studies for our country as of the period when the

study was planned, it was interrupted due to individual reasons. Similar studies were published when it was interrupted; unfortunately, our study lost this quality. This is another limitation of our study. However, the study continued during the pandemic period. From this point of view, our study results cover pre-pandemic and pandemic periods. This makes our work more comprehensive and strengthens it.

Our study differs from other studies in this field with the high number of questions and, as a result, being more comprehensive. In addition, our study only divided students into pre-clinical and clinical periods. No such distinction was made in other studies. In some studies, only certain classes were taken, and not all students were reached. We think that our study is different from other studies with these features. In addition, our study was conducted in a region where TCM practices are used frequently, and it stands out as the first and only study that reflects this region.

CONCLUSION

Our students were found to have a high level of interest, use, and attitude toward these practices and a low level of knowledge. In addition, the majority of students want to take TCM training to integrate into modern medicine. Since the internet and the media are also sources of information, they can be used to inform the public. With the arrangements to be made in the medical education curriculum, the level of knowledge and awareness of future physicians will increase. In addition, the gap in TCM practices, which are widely used today, will be filled and they will be able to help their patients more.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

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