

## Original Article

## Evaluation of Knowledge and Attitudes of Family Medicine Residents on Traditional and Complementary Medicine: A descriptive comparative study

Aile Hekimliği Asistanlarının Geleneksel ve Tamamlayıcı Tıp Konusunda Bilgi ve Tutumlarının Değerlendirilmesi: Tanımlayıcı ve karşılaştırmalı bir çalışma

Mahmut Isik<sup>1</sup>, Murat Altuntas<sup>2</sup>, Ali Timucin Atayoglu<sup>3\*</sup>

<sup>1</sup> Department of Family Medicine, Beylikduzu Family Health Center No:4, Istanbul, Türkiye

<sup>2</sup> Department of Family Medicine, Health Sciences University, Bagcilar Training and Research Hospital, Istanbul, Türkiye

<sup>3</sup> Department of Family Medicine, Istanbul Medipol University, International School of Medicine, Istanbul, Türkiye

## \*Corresponding author:

Asst.Prof. Ali Timucin ATAYOGLU

## Address:

Istanbul Medipol University,  
International School of Medicine,  
Department of Family Medicine,  
Beykoz, Istanbul/TURKIYE

E-mail: atayoglu@medipol.edu.tr

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## ABSTRACT

**Background:** The World Health Organization urges to integrate traditional medicine into health services particularly primary health care services. The aim of this study is to evaluate the knowledge and attitudes of residents on Traditional and Complementary Medicine (T&CM) and compare the ones in the department of Family Medicine with the others.

**Materials and Methods:** A descriptive comparative study. Residents in a training and research hospital in Istanbul were divided into three groups as Family Medicine, Surgical specialities, and other Medical specialities. A questionnaire consisting of 23 questions was prepared and applied to the residents at the hospital, using a face-to-face interview technique.

**Results:** In this study, 245 residents from different departments participated. Among them, 68.9% (n=169) stated that T&CM applications might contribute to modern medicine. It was determined that the most known applications were Acupuncture, Cupping therapy, and Hirudotherapy. Among the participants, 11.0% (n=27) of the residents had a certificate of a T&CM applications. According to 69.2% of the residents in Family Medicine the main role of T&CM is in wellness and preventive healthcare. Among the residents in the Family Medicine, the number of participants using T&CM applications in the treatment of their own health problems was found to be higher than the ones in the other medical and surgical specialities; 38.5%, 9.6% and 10.1%, respectively (p<0.001).

**Conclusion:** Compared to other medical and surgical specialities, residents in family medicine seem to have a more positive attitude towards T&CM practices. Further education and training are required for resident physicians to enhance their understanding of the possible efficacy and adverse effects of T&CM practices.

**Key words:** Family Medicine, Preventive Healthcare, Traditional and Complementary Medicine

## ÖZ

**Amaç:** Dünya Sağlık Örgütü, geleneksel tıbbın sağlık hizmetlerine entegre edilmesini teşvik etmektedir, özellikle de birinci basamakta. Bu çalışmanın amacı, asistan hekimlerin Geleneksel ve Tamamlayıcı Tıp (GETAT) konusundaki bilgi ve tutumlarını değerlendirmek ve bu konuda Aile Hekimliği asistanlarını diğerleriyle karşılaştırmaktır.

**Yöntem:** Tanımlayıcı-karşılaştırmalı bir çalışma. Bir eğitim ve araştırma hastanesindeki asistanlar aile hekimliği, cerrahi branşlar ve diğer tıp dalları olmak üzere üç gruba ayrıldı. 23 sorudan oluşan bir anket hazırlanarak hastanedeki asistanlara yüz yüze görüşme tekniği kullanılarak uygulandı.

**Bulgular:** Bu çalışmaya farklı bölümlerden 245 asistan hekim katılmıştır. Hekimlerin %68,9'u (n=169) GETAT uygulamalarının modern tıba katkı sağlayabileceğini belirtmiştir. En çok bilinen uygulamaların Akupunktur, Kupa terapi ve Hirudoterapi olduğu belirlendi. Katılımcı asistanların arasında %11'inin (n=27) bir GETAT uygulama belgesi bulunmaktaydı. Aile hekimliği asistanlarının %69,2'sine göre GETAT uygulamalarının temel rolü iyilik halinin devamı ve koruyucu sağlık hizmetidir. Aile hekimliği asistanlarında kendi sağlık sorunlarının tedavisinde GETAT uygulamalarını kullananların sayısı diğer dahili ve cerrahi uzmanlık dallarına göre daha fazla bulunmuştur; bu oran sırasıyla %38,5, %9,6 ve %10,1 şeklindedir (p<0,001).

**Sonuç:** Aile hekimliği asistanlarının diğer dahili ve cerrahi uzmanlık dallarına göre GETAT uygulamalarına karşı daha olumlu bir tutuma sahip oldukları görülmektedir. Asistan hekimlere yönelik T&CM uygulamalarının potansiyel etki ve yan etkileri üzerine daha fazla eğitim ve öğretime gereksinim vardır.

**Anahtar kelimeler:** Aile Hekimliği, Koruyucu Sağlık Hizmeti, Geleneksel ve Tamamlayıcı Tıp

## Highlights

- Family medicine residents have relatively more positive attitude towards Traditional & Complementary Medicine.
- According to the family medicine residents, the main role of Traditional & Complementary Medicine should be in wellness and prevention.
- Education and training are required for resident physicians to enhance their understanding of the possible efficacy of Traditional & Complementary Medicine.

## Introduction

There has been an increasing interest in Traditional and Complementary Medicine (T&CM) methods all over the world, among the general public and the healthcare professionals (1-3).

In response to that ever-increasing use of T&CM therapies, the US Congress established the National Center for Complementary and Alternative Medicine (NCCAM) as a component of the National Institutes of Health (NIH) in 1998 to explore CAM practices (1). In Europe, CAMbrella which is a European research network for complementary and alternative medicine (CAM) conducted a research programme into the situation of CAM in Europe between 2010 and 2012, coming forward with recommendations as to its viability and place within the established EU healthcare system. CAMbrella Project substantiated the fact that CAM is an established part of healthcare in Europe (2). The findings of the CAMbrella Project noted a high demand for and widespread use of CAM treatments by the people in Europe and highlighted the lack of its integration into national public health systems. The World Health Organization (WHO) urges to integrate traditional medicine into health services particularly primary health care services, within the scope of its 2014-2023 strategy (3-5).

Based on the 2014-2023 strategy of the WHO, Turkish Ministry of Health focused on integration of traditional medicine with modern medicine and the Regulation on Practices of Traditional and Complementary Medicine entered into force in 2014. It promotes integration of T&CM into the national health care system, in accordance with the recommendation of WHO. The Regulation states 15 separate methods of T&CM including acupuncture, apitherapy, maggot therapy, hirudotherapy, phytotherapy, homeopathy, cupping therapy, prolotherapy, ozone therapy, mesotherapy, hypnotherapy, reflexology, music therapy, chiropractic, and osteopathy (6). The Regulation introduced a system of authorization certificates, restricting who may practice T&CM. It is notable that some universities in Turkey have already begun activities with respect to the T&CM.

The aim of this study is to evaluate the knowledge and attitudes of residents on T&CM and compare the ones in the department of Family Medicine with the other medical and surgical specialities.

## Materials and Methods

*Design of the Study:* This was a descriptive comparative study. Residents in a training and research hospital were divided into three groups as Family Medicine, Surgical specialities, and other Medical specialities at the Bagcilar Training and Research Hospital of the University of Health Sciences in Istanbul, Turkey between the 1<sup>st</sup> and 31<sup>st</sup> October 2019.

The study determined the necessary sample size using priori power analysis by G\*Power software (ver. 3.1.9.4; Heinrich-Heine-Universität Düsseldorf, Düsseldorf, Germany). The study required a minimum sample size of 226 with a minimum power of 80%, assuming an effect size of 0.23 and a Type I error rate of 0.05. Participants were asked to choose one of three options, "No," "Yes," or "I'm not sure," regarding their opinion on whether T&CM applications contribute to modern medical practices.. Considering that there will be 8% data loss in the responses of the minimum participants, it was decided that a minimum of 245 participants should be included in the study.

*Data Collection:* A questionnaire consisting of 23 questions was prepared and applied to the residents using a face-to-face interview technique. In the questionnaire, age, gender, place of birth, specialization, status of having certificate on T&CM, opinion on the T&CM methods as a contributor to modern medicine, and who should perform T&CM applications were evaluated. The data were used in a Family Medicine specialization thesis (7).

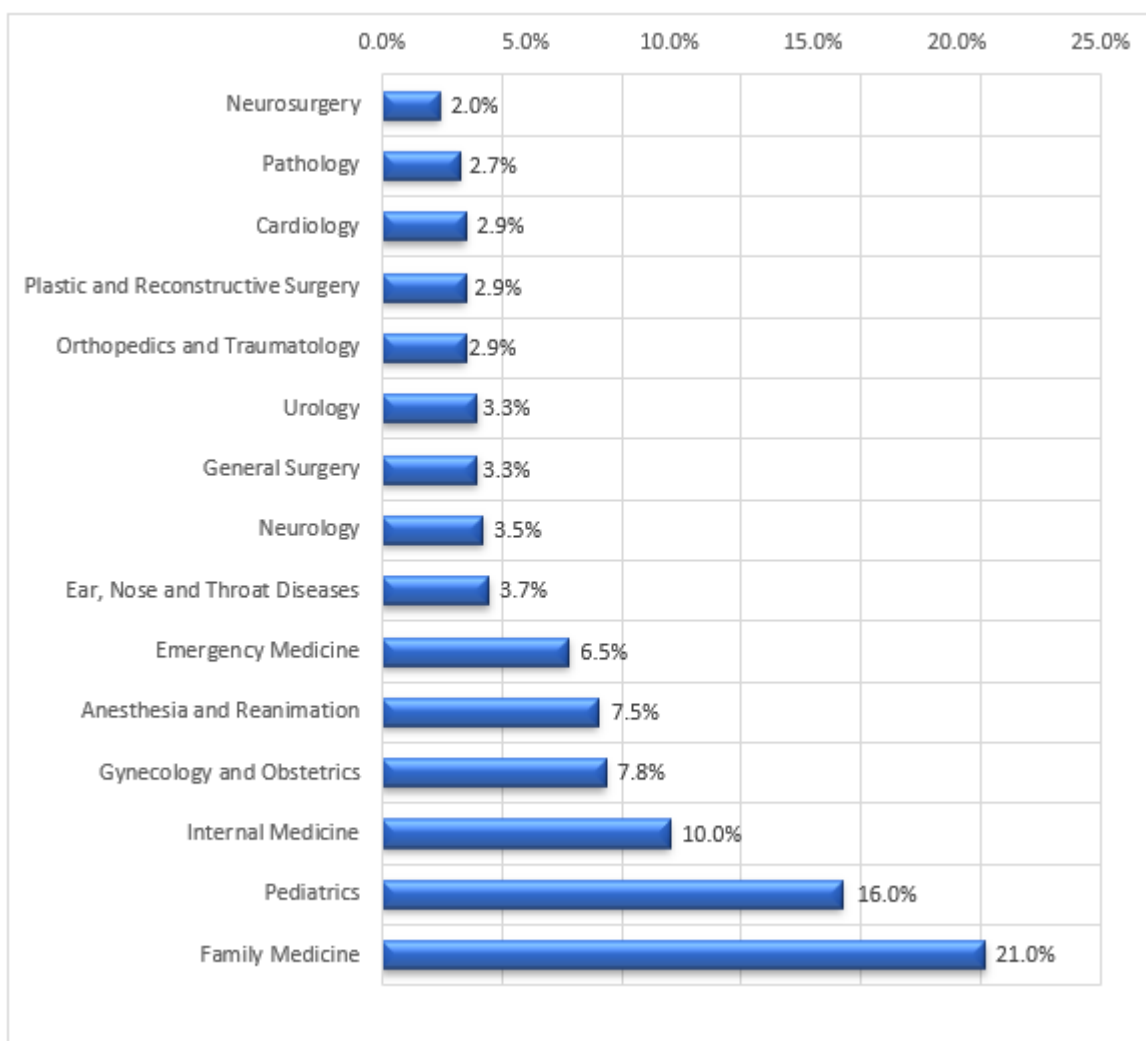
*Ethical Committee Approval:* The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Ethics Committee of the University of Health Sciences, Bagcilar, Istanbul, Turkey (protocol code: 2019.09.2.01.063.r1.067 and date of approval: 20/09/2019). Informed consent was obtained from all subjects involved in the study.

*Statistical Analysis:* The obtained data were analyzed in the Statistical Package for the Social Sciences (SPSS) version 25.0 package program. Descriptive findings were presented with frequency and percentage distributions n (%). Comparisons were made between groups of residents from different departments. Chi-square test was used in the analysis of qualitative data. Statistical significance was evaluated at the  $p < 0.05$  level.

## Results

The total number of resident physicians who were the target of the study was 257. Twelve of them (4.7%) reported that they were not available for face-to-face interviews to answer the questionnaire during the study period. The study group consisted of 245 residents (Participation rate: 95.3%).

Among the residents 51.8% (n=127) were male and 48.2% (n=118) were female. The distribution of the physicians' places of birth by region was determined as follows: 24.5% Marmara, 18.8% Central Anatolia, 13.5% Black Sea, 12.2% Eastern Anatolia, 8.9% Mediterranean, 7.7% Aegean, 6.1% Southeast Anatolia and 8.2% abroad. Of the 245 residents participating in the study, 52 (21.2%) were in Family Medicine, 94 (38.4%) were in surgical specialities, and 99 (40.4%) were in other medical specialities (Figure 1).



**Figure 1.** Distribution of physicians by clinics.

In the query made to evaluate the knowledge and attitudes of 245 physicians participating in the study towards T&CM applications; The rate of those who thought that the T&CM methods could contribute to modern medicine was 68.9%, the rate of those who did not think was 13.5%, and the rate of those who were not sure was 17.6%.

Table 1 presents a comparison of views on the contribution of T&CM applications to modern medical practices. The contribution of T&CM to modern medicine was recognized by 76.9% of family physicians, 71.3% of

surgical specialties, and 85.9% of other medical specialties, respectively. However, the difference in proportions among the three groups was not statistically significant ( $p>0.05$ ).

**Table 1.** Comparison of the opinions of residents in Family Medicine and other specialties that T&CM applications may contribute to conventional medicine.

		Surgical specialties (n=94)		Other medical specialties (n= 99)		Family Medicine(n= 52)		X <sup>2</sup> ; p*
		n	%	n	%	n	%	
<b>Whether T&amp;CM may contribute to conventional medicine</b>	<i>No</i>	19	20.2	7	7.1	7	13.5	7.802; 0.099
	<i>Yes</i>	67	71.3	85	85.9	40	76.9	
	<i>Not sure</i>	8	8.5	7	7.1	5	9.6	

\*Chi-square test was used in the analysis of qualitative data. Statistical significance was evaluated at the  $p<0.05$  level.

**Table 2.** Comparison of opinions of residents in Family Medicine and other specialties about the main use of T&CM applications.

		Surgical specialties (n=94)		Other medical specialties (n= 99)		Family Medicine (n= 52)		X <sup>2</sup> ; p*
		n	%	n	%	n	%	
<b>The main purpose of using T&amp;CM</b>	<i>Diagnostic</i>	7	7.4	11	11.1	5	9.6	10.375; 0.035
	<i>Treatment</i>	37	39.4	20	20.2	11	21.2	
	<i>Wellness &amp; Prevention</i>	50	53.2	68	68.7	36	69.2	

\*Chi-square test was used in the analysis of qualitative data. Statistical significance was evaluated at the  $p<0.05$  level.

The physicians were surveyed regarding their familiarity with traditional and complementary medicine practices recognized by the Ministry of Health. The recognition rate of the three most widely recognized traditional and complementary medicine (T&CM) practices, namely acupuncture, cupping therapy, and leech therapy, was found to be 97%, 88%, and 77% respectively. Comparison of opinions about the main use of T&CM applications in Family Medicine, other medical Specialities and surgical specialties is presented in Table 2. Residents of surgical specialties were the most likely (39.4%) to believe that the primary objective of T&CM practices was for treatment. However, a higher proportion of family physicians and other medical specialties believed that promoting a wellness and prevention was the main goal of T&CM practices (69.2% and 68.7%, respectively) compared to surgical specialties (53.2%), and this difference was statistically significant ( $p<0.05$ ).

Considering that personal experiences may change their perspective on T&CM applications, physicians were asked whether they have ever applied any of the T&CM applications in their personal lives. Only 15.9% of all physicians answered "yes". Among these, acupuncture is the most common one with 38.5%; cupping therapy is the second one with 36%; hirudotherapy and mesotherapy were the third with 8%.

Comparison of frequency of use of the T&CM applications in is presented in Table 3. The utilization rate of any T&CM intervention for self-treatment among residents in family medicine, surgical specialties, and other medical specialists was found to be 38.5%, 9.6%, and 10.1%, respectively, with a statistically significant difference ( $p<0.001$ ). While 61.2% (n= 150) of the physicians participating in the study stated that T&CM practices should be included in the basic medical education curriculum; 59.2% (n= 145) reported that T&CM training should not be given to any health personnel except physicians.

Physicians were queried on their beliefs regarding the prevalence of complications in traditional and complementary medicine (T&CM) compared to modern medical practices. 49% of the physician participants responded affirmatively to this question, Of the total participants, 11.0% (n=27) were residents with certification in a T&CM method.

**Table 3.** Comparison of the residents in Family Medicine and other specialties on being treated with T&CM applications.

		Surgical specialties (n=94)		Other medical specialties (n= 99)		Family Medicine (n= 52)		X <sup>2</sup> ; p*
		n	%	n	%	n	%	
<b>Whether the resident has ever received T&amp;CM treatments for any reason</b>	<i>No</i>	85	90.4	89	89.9	32	61.5	25.074; <0.001
	<i>Yes</i>	9	9.6	10	10.1	20	38.5	

\*Chi-square test was used in the analysis of qualitative data. Statistical significance was evaluated at the p<0.05 level.

## Discussion

The number of studies on T&CM practices is growing, and it is crucial for physicians to have knowledge in this field to minimize the risks and maximize the benefits of T&CM. The holistic approach of T&CM, similar to the biopsychosocial model in family medicine, and the integration with other medical fields are key issues. Ensuring that T&CM practices are carried out by certified physicians in approved centers, as regulated, will prevent adverse effects and promote cost-effective and preventive healthcare, reducing the burden on secondary and tertiary health institutions. To progress and develop T&CM practices further, based on evidence, physicians interested in T&CM must be trained, and the infrastructure for this needs to be established.

Previous studies have explored the opinions of physicians regarding T&CM. A survey was carried out in the United States in 1995, which involved 295 family physicians and aimed to explore their opinions on T&CM. The data showed that most of the physicians reported that they either use T&CM practices themselves or refer their patients to them (8). In this current research, it was found that 68.9% of medical practitioners had the perspective that T&CM practices can serve as a complementary adjunct to conventional medicine. Hence, it can be deduced that a substantial portion of the physicians in our study held a favorable viewpoint towards T&CM practices. This perspective aligns with the national regulations regarding T&CM practices, which state that these practices should not be utilized as a replacement for conventional medicine (6). In a previous study, among the family physicians in Istanbul, the majority (70.1%) reported a preference for integrating T&CM practices with conventional medicine (9). In the current study, the perceptions regarding the contribution of T&CM practices to conventional medicine were assessed among three groups, and no significant differences were observed among these groups (p>0.05). Considering the holistic health approach and the biopsychosocial approach of family physicians compared to other medical specialties, it could be expected that they would be more prone to T&CM applications; however, our study did not provide any evidence that family medicine residents think differently than residents of other specialties.

In the present investigation, acupuncture was found to be the most widely utilized traditional and complementary medicine practice, with a utilization rate of 97%. Cupping therapy was identified as the second most prevalent, with a utilization rate of 88%, followed by hirudotherapy (leech therapy) with a utilization rate of 77%. Strong evidence supports the efficacy of acupuncture in reducing nausea and pain syndromes, including migraine (10). A meta-analysis determined that the combination use of cupping therapy was significantly more efficacious in treating patients with conditions such as herpes zoster, facial nerve paralysis, acne vulgaris, and cervical spondylosis, in comparison to single modality treatments (11). Hirudotherapy has been shown to be successful in evacuating hematomas and resolving complications following scalp replantation or flap transfers in head and neck reconstructive surgery, as well as enhancing the venous system through non-surgical means (12).

The individual's attitude and interest towards traditional medicine practices are greatly influenced by factors such as family structure, environmental conditions, religious convictions, cultural customs, and traditions of the society. The prevalence of cupping therapy and hirudotherapy in the country may be attributed to the long-standing presence of these practices in the society, as they have been sustained due to religious beliefs and/or cultural traditions. In a previous study, among the family physicians in Istanbul, cupping therapy was the most widely recognized T&CM technique; it was also the most frequently recommended method by physicians (9). In the current study, the majority of the participants (71.6%) had no formal T&CM training, and 66.4% reported inquiring about T&CM in their patient consultations. Over half of the physicians (56.79%) believed that T&CM methods should be used in preventive medicine.

According to the systematic review and meta-analysis study of Tozun et al. (13), it has been determined that the most known and used T&CM applications are massage, herbal therapy and acupuncture. The fact that the most used and known applications are compatible with each other suggests that applications are learned based on usage rather than theoretical knowledge. It is not surprising that the most well-known practices are the methods that are in the tradition of the country and the legislation is the oldest. Studies on this subject reflect cultural and

traditional differences. The most commonly used practices in the United States are spiritual healing methods (prayer, etc.), vitamins and herbs, and mind/body approaches (14). In a systematic review of studies from various countries, the most commonly used practices are herbal therapy, chiropractic, massage, and homeopathy (15). In a study conducted in Canada (16), physicians were most knowledgeable about acupuncture (71%), chiropractic (59%) and hypnosis (55%) among T&CM practices; It is reported that the order of the applications that physicians think most useful is the same.

In the present investigation, according to majority of the residents in Family Medicine the main role of T&CM is in “wellness and preventive”, while for the residents in surgical specialties the role in the “treatment” was more prominent ( $p < 0.05$ ). It is remarkable that physicians know or think that T&CM applications are used not only in treatment, but also in preventive medicine, which is one of the main areas of use, that they can be carried out in a more integrated way with modern medicine. The results of the study can be interpreted by associating it with the 'problem prevention' oriented approach in medical specialties such as family medicine, while 'problem solving' is at the forefront of those in surgical specialties. The study also assessed whether physicians utilized T&CM practices for themselves, with only 15.9% responding in the affirmative. Of these, acupuncture was the most frequently utilized, at 38.5%, followed by cupping therapy at 36%. Hirudotherapy and mesotherapy ranked third, with 8%. The finding that acupuncture was the most commonly used T&CM practice by physicians is in line with the country's early legislation and historical context. Cupping therapy, with its religious and traditional background, likely contributes to its popularity among physicians. Thus, our results are consistent with expectations.

A group of researchers, evaluating the views of physicians on T&CM practices in England and its reflection on health practice, conducted a study with 2748 physicians, 79% of whom worked in the national health system, and 32% of the physicians working in the national health system reported that they use the T&CM applications in their personal life. In addition, it was stated in the study that the most preferred areas of T&CM were acupuncture, aromatherapy and manipulative medicine (17). In a study of health plan members in Minnesota in US, the frequency of use of at least one T&CM was reported as 42% (18). In a study of healthcare workers in Egypt, it was reported that 4.12% of participants usually used T&CM and 38.1% used it sometimes (19). In our study, the frequency of using T&CM by physicians (15.9%) was quite low compared to some other studies. In our study, the frequency of family medicine residents using a T&CM application in their own treatment was found to be higher than the residents in the other two groups. This finding suggests that family medicine residents are more inclined to use T&CM than other physicians. This is an expected result related to the health perspective of family medicine disciplines and practices. In another study conducted in Iran in 2015, 94% of the physicians had a positive attitude towards T&CM applications (20). In a study in Germany, 74% of family physicians stated that basic T&CM training should be given to family physicians (21).

In the current study, 61% of the physicians stated that T&CM practices should be included in the basic medical education curriculum. It is understood from the legislation that these practices are taken from untrained people and only trained physicians are authorized (6). According to the results of the systematic compilation and meta-analysis study carried out by Tozun et al. The prevalence value of the meta-analysis was determined as 21% for physicians or health professionals who received training on T&CM practices. In 19 studies included in the meta-analysis, the opinion of willingness to receive education ranged from 21.9% to 85.3% (13). However, the opinion that T&CM courses should be included in the curriculum of medical and other health schools was reported between 36.7% and 90.4% in 22 studies. In our study, only 11% of the physicians received T&CM training, while 89% did not. This is a fairly low frequency. In a study conducted on primary care physicians in the country, it was determined that the majority of physicians (96%) did not have training on T&CM applications, and 74% wanted additional training on these issues (22). It is recognized that there is a growing interest among physicians in T&CM and that they are seeking training in this area. This has led to calls for T&CM training to be incorporated into the curriculum. It is anticipated that this demand for T&CM education will increase over time. The results of the current study suggest that physicians' demands for training on T&CM and inclusion of T&CM in the curriculum and the competent authorities on these issues should tighten their infrastructure inspections even more.

The biopsychosocial health model, which is one of the basic principles in family medicine, and the holistic health approach in T&CM have similarities. In this context, family medicine practice and T&CM applications seem to have a basic common denominator for the integration as recommended by WHO. The activity of traditional medical practitioners must meet the requirements and standards set forth under the Regulation, including safety, effectiveness and quality. Tozun et al. (23) conducted a comprehensive evaluation of the ethical dimension of the Regulation on T&CM practices. Their assessment reveals that T&CM practices are undergoing a transitional phase both in Turkey and globally. The authors suggest that as the body of scientific evidence

supporting T&CM practices grows, there is potential for these practices to be effectively integrated into modern medicine.

The study has certain limitations. The foremost limitation is that the study's sample size was relatively limited. Additionally, it was carried out at a singular medical facility, which could potentially impact the generalizability of the findings.

## Conclusion

This study showed that a majority of the physicians believed that T&CM practices contributed to modern medicine, however only a small number reported using T&CM applications in their own treatment. The majority of the physicians believed that T&CM practices should be included in medical education. According to the majority of the residents in family medicine, the main role of T&CM should be in wellness and prevention. Compared to other medical and surgical specialties, residents in family medicine seem to have a more positive attitude towards T&CM practices. The biopsychosocial health model, which is one of the basic principles in family medicine, and the holistic health approach in T&CM have similarities. In this context, family medicine practice and T&CM applications seem to have a basic common denominator for the integration as recommended by WHO. Based on the results of the study, it can be suggested that there is a need for further education and training for resident physicians in T&CM practices. Additionally, there is a need for further research to increase understanding of the role and impact of T&CM practices in modern medicine and to address the concerns regarding potential complications. Furthermore, it could be recommended to consider including T&CM practices in the medical education curriculum.

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**Ethical Approval:** *The study was conducted in accordance with the Declaration of Helsinki, and approved by the Institutional Ethics Committee of the University of Health Sciences, Bağcilar, Istanbul, Turkey (protocol code: 2019.09.2.01.063.r1.067 and date of approval: 20/09/2019).*

**Author Contributions:** *Concept: MI, MA; Literature Review: MI, ATA; Design: MI; Data acquisition: MI; Analysis and interpretation: MI, MA, ATA; Writing manuscript: MI, ATA; Critical revision of manuscript: ATA*

**Conflict of Interest:** *The author(s) do not have any potential conflict of interest regarding the research, authorship and/or publication of this article.*

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