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The Effect of Socio-Demographic and Cultural Features on Traditional, Complementary and Alternative Medicine in Healthcare Students

Sağlık Öğrencilerinde Sosyo-Demografik ve Kültürel Özelliklerin Geleneksel, Tamamlayıcı ve Alternatif Tıp Üzerine Etkisi

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Abstract

Objective: The aim of the research is to determine the impact of socio-demographic-cultural characteristics and educational background on the approach to Traditional, Complementary and Alternative Medicine (TCAM) practices among healthcare students.

Material and Method: The research was designed as a quantitative and descriptive-cross-sectional study and carried out with health educated students from two different universities.

Results: 59.4% of the participants reported using TCAM; 21.2% reported having experienced problems with the practices they applied, while 68.8% advice this method to others. The variables of age, university, marital status, long-term location of residence, perceived income, chronic disease status, smoking, source of traditional, complementary and alternative medicine information, any problems following TCAM use and post- TCAM experience were found effective.

Conclusion: TCAM training should be included in the education programs of students receiving health education so as to provide them with accurate information on the matter.

Keywords: Complementary therapies, alternative medicine, cultural characteristics, health education

Öz

Amaç: Sağlık eğitimi alan öğrencilerde, sosyodemografik-kültürel ve konuya ilişkin eğitim alıp almamaya yönelik özelliklerin Geleneksel Tamamlayıcı Alternatif Tıp (GETAT) uygulamalarına yaklaşımlarındaki etkisini belirlemektir.

Gereç ve Yöntem: Nicel ve tanımlayıcı-kesitsel tipte olan araştırma iki farklı üniversitenin sağlık eğitimi alan öğrencileriyle gerçekleştirilmiştir.

Bulgular: Katılımcıların %59.4'ü GETAT kullandığını, %21.2'si yaptığı uygulamadan dolayı sorun yaşadığını, %68.8'i başkalarına da bu yöntemleri tavsiye ettiğini belirtmiştir. Yaş, üniversite, medeni durum, hayatının uzun süre ile geçtiği yer, gelir düzeyi algısı, kronik hastalık durumu, sigara alışkanlığı, GETAT konusundaki bilgi kaynağı, GETAT nedeniyle sorun yaşayıp yaşamama durumu ve GETAT sonrası deneyim değişkenleri etkili bulunmuştur.

Sonuç: GETAT eğitimleri konuya ilişkin doğru bilgilerin kazanımı için sağlık eğitimi alan öğrencilerin eğitim programlarında olmalıdır.

Anahtar Kelimeler: Geleneksel tıp, tamamlayıcı tıp, alternatif tıp, sağlık eğitimi

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INTRODUCTION

Complementary, traditional, conventional, or alternative methods that are defined under the main heading of Traditional and Complementary Alternative Medicine (TCAM) have existed for centuries.[1,2] However, TCAM practices are still debated in many countries around the world by policymakers, health professionals and public with regard to matters such as security, effectiveness, availability, protection and organization.[3] The World Health Organization (WHO) defines Traditional Medicine (TM) as the sum total of knowledge, skills and practices based on the theories, beliefs and experiences indigenous to different cultures.[4] While complementary/alternative medicine (CM) is defined as a broad set of healthcare practices that are not part of that country's own tradition or conventional medicine and are not fully integrated into the dominant healthcare system.[5] Their union is defined as traditional and complementary medicine (T&CM). In mid-2017, WHO's T&CM unit was renamed to include the term "Integrative Medicine", to cover the integrative approaches of both T&CM and conventional medicine regarding policy, information and practices.[6]

T&CM is becoming more popular in all stages of health, especially in the preventive and therapeutic areas.[7,8] TCAM is widely used worldwide for various reasons such as accessibility, suitability, home-use, cultural compatibility, cost-effectiveness, and as a way of dealing with non-communicable chronic diseases. The report published in 2012 by WHO Traditional Medicine Strategy touched upon issues such as the limited number of research on the subject, absence of control and regulatory mechanisms for advertisements, absence of product-related control mechanisms, inadequate financial support for research, lack of communication between the health authorities on the subject, and inadequate training received by those applying these methods,3 emphasizing the need for improvements.[9]

The rate of TCAM use at least once a year is above 40% in countries such as America, Germany, Switzerland, Cuba, Japan and Chile.[10] Some countries have included T&CM practices in their curricula. The use of T&CM in regions such as Asia, Africa, Australia and North America is much higher than European countries that frequently opt to these methods.[3]

The rate of TCAM use is 48.2% in Australia, 49.3% in France, and 70.4% in Canada; while, among developing countries, it is around 70.0% in China, 40.0% in Colombia and 80.0% in African countries.[11]

Turkey is a country with national policies, regulations, research institution and an application hospital on TCAM. Only a physician is given the authority to apply TCAM. However, there is no data regarding the percentage of physicians performing these practices and their ratio to the total share of traditional medicines. Individuals often seek non-physician healthcare professionals for counseling, which is a widely accepted concept in Turkey. In this context, it is important to identify individuals' perceptions, awareness and practices towards the matter.

Participating students, who will take part in health services as non-physician healthcare personnel in the future, from two different universities who receive and do not receive elective courses on TCAM were compared with the aim to determine their approaches within the scope of their socio-demographic and cultural characteristics.

MATERIAL AND METHODS

The research was designed as a quantitative, descriptive and cross-sectional study. Study data were collected through a questionnaire during the 2018-2019 academic year. Ethical and institutional permissions were obtained prior to the research and voluntary participation was sought. The establishment year and academic structure of the universities where the research was conducted were similar. A University is located in the Eastern Black Sea region on Turkey, whereas B University is located in the Eastern Anatolia region. A University exhibits similar cultural characteristics with the countries in the west of Turkey, whereas B university exhibits similar cultural characteristics with the countries in the east of Turkey The majority of university students consisted of those coming from cities in the vicinity of the region where the university is located. These universities were purposefully selected for easy sampling. A university has a population of 690 students studying healthcare. A total of 588 people participated in the study (response rate: 85.21%). B University has a population of 675 students studying healthcare. A total of 570 people participated in the study (Response rate: 84.44%).

Data Collection Tools

Data were collected using a questionnaire form developed by the researchers. The questionnaire form included questions investigating the socio-demographic and cultural characteristics of the participants such as which university they attended, class, department, age, gender, marital status, family type, mother and father's educational background and occupation, habits, disease history, previous knowledge about TCAM methods, previous applications, familiarity with TCAM methods, history of usage, any associated problems experienced, and recommendations if any.

Data Collection

Prior to the study, approval was obtained from the Research Ethics Committee of Bingöl University (26/03/2018:10) and the deanships of the schools where students were enrolled. Participating students were given an Informed Consent Form attached to the questionnaire for the explanation of the scope of the study. The study data were collected by the researchers in the first 20 minutes of any lesson.

Informed Consent Form: The form explains that all individuals are completely free to decide whether to participate in the research and they can withdraw from the research at any time and that their identity will be kept confidential at all stages of the research, but the information obtained will be used.

Statistical Analysis

The SPSS-22 package software was used to evaluate the study data and perform error checks, tables and statistical analyses. TCAM questions were the dependent variables of the study, whereas the independent variables were the socio-demographic-cultural characteristics. Descriptive statistics were expressed as number, percentage, median and min-max values. In the study, binary logistic regression analysis was performed; the means were presented with standard deviation (Mean ± SD), and the value of $p < 0.05$ was considered statistically significant.

RESULTS

The mean age of the participants was 20.83 ± 1.67 (min-max: 18-30, Median: 21). Descriptive characteristics of the participants are shown in **Table 1**. In the study, 31.4% of the participants were female. This rate is similar to the ratio of faculty students in Turkey where three out of every four people studying in fields such as nursing and midwifery are female. The rate of smokers is 17.4%, while the rate of those who drink alcohol is 3.1%. The participants were asked which TCAM methods they used. Out of all participants, 34.6% reported not having previously heard about prolotherapy, 31.6% about larvae application, 31.5% about ozone therapy, 31.4% about homeopathy, 30.2% about mesotherapy, 27.3% about osteopatia, 26.2% about chiropractic, 21.6% about acupuncture, 21.5% about phytotherapy, 20.7% about leech therapy and reflexology, 19.6% about cupping, 16.5% about meditation, 17.4% about yoga, and 5.5% about breathing exercises. On the other hand, 51.6% of the participants reported using breathing exercises, 45.5% prayer, 44.8% massages, 39.3% music therapy, 37.9% aerobics, 33.9% meditation, 33.0% nutrition therapy, 32.0% thermal spring, 30.0% yoga, 28.7% reflexology, 28.2% cupping, 27.9% phytotherapy, 27.2% aromotherapy, 26.5% leech therapy, 25.0% chiropractic, 24.6% acupuncture, 23.8% hypnosis, 21.9% osteopatia, 20.6% mesotherapy, 19.9% homeopathy, 18.0% ozone treatment, 17.9% larval treatment, and 16.3% prolotherapy.

As can be seen in **Table 2**, the upmost reasons for using TCAM practices were; believing it will provide additional benefit to the medical method (84.2%), believing it will prevent the progression of the disease (72.9) and believing that it will promote health/well-being and provide physical relief (72.8%).

Table 3 demonstrates the participants' TCAM practices. The rate of those who use TCAM is 59.4%, and the rate of those receiving this training as an elective course is 5.3%. It was observed that the participants picked “seeing users benefit from it” as the upmost reason for using TCAM methods. On the other hand, 33.7% stated that “acknowledged specialists should be preferred" for TCAM. The rate of those experiencing problems due to the use of TCAM is 21.2%. The rate of those saying "I would give up medical treatment and use TCAM alone if I believed it was necessary" is 8.1%.

Table 1. Distribution of descriptive features of participants (N = 1158)

Characteristics		Number	%
University	A University	588	50.8
	B University	570	49.2
Age (Median: 21)	Under 20 years of age	517	44.6
	Above 21 years of age	641	55.4
Gender	Female	764	31.4
	Male	364	68.6
Marital status	Married	68	5.9
	Single	1090	94.1
Family type	Nuclear	879	750.9
	Extended	269	23.2
	Broken	10	0.9
Long-term location of residence	Rural setting	370	32.0
	Urban setting	788	68.0
Mother's Level of Education	Literate, did not finish school	288	24.9
	Primary school graduate	534	46.1
	Secondary school graduate	143	12.3
	Highschool graduate	153	13.2
	University graduate	40	3.5
Father's Level of Education	Literate, did not finish school	84	7.3
	Primary school graduate	442	38.2
	Secondary school graduate	217	18.7
	Highschool graduate	329	28.4
	University graduate	86	7.4
Smoking	No	957	82.6
	Yes	201	17.4
Alcohol	No	1122	96.9
	Yes	36	3.1
Drug addiction	No	904	78.1
	Yes	254	21.9
Chronic disease	No	1069	92.3
	Yes	89	7.7

As seen in **Table 4**; the participants' age, university, marital status, long-term location of residence, perceived income, chronic diseases, smoking habit, source of TCAM information, whether or not experiencing problems due to TCAM, and post-TCAM experience were all found effective, independently from each other ($p < 0.05$). The evaluation of the one-unit increase showed that having experienced problems due to TCAM use was 11.6 times; being at A university was 4.94 times; being single was 2.96 times; high expenses was 2.1 times; chronic disease was 2.0 times; not experiencing any improvements in previous experiences was 1.9 times, not noticing any results was 1.7 times; long-term residence in urban settings was 1.5 times and age was 1.4 times effective in not using TCAM ($p < 0.05$). The evaluation of the one-unit increase in using TCAM showed that the means of the internet as a source of TCAM information and previous education were 0.4 times; newspaper-book-magazine as the source of information was 0.2 times; and previous negative experience following TCAM practice was 0.3 times effective ($p < 0.05$).

Table 2. Distribution of participants' responses to reasons for TCAM use (N = 1158)

Reasons for TCAM use	No n (%)	Yes n (%)
It provides additional benefits to medical methods (n=1092)	172 (15.8)	920 (84.2)
I believe it prevents the progression of the disease/has benefits (n=1070)	290 (27.1)	780 (72.9)
It promotes health/well-being (n=1083)	295 (27.2)	788 (72.8)
It provides physical relief (n=1079)	293 (27.2)	786 (72.8)
It improves the symptoms of the disease before medical treatment (n=1050)	317 (30.2)	733 (69.8)
I pay attention to the recommendations of friends and relatives (n=1057)	331 (31.3)	726 (68.7)
It may work, there is no harm in trying (n=1047)	341 (32.6)	706 (67.4)
It helps to get rid of the feeling of hopelessness and despair (n=1051)	347 (33.0)	704 (67.0)
It strengthens the immune system (n=1053)	351 (33.3)	702 (66.7)
Medicinal treatment methods have side effects (n=1044)	349 (33.4)	695 (66.6)
Any treatment that can cure the disease should be given a chance (n=1042)	367 (35.2)	675 (64.8)
It improves the quality of life (n=1078)	479 (44.4)	599 (55.6)
Means of communication promote it (n=1035)	390 (37.7)	645 (62.3)
Current methods are not useful (n=1023)	407 (39.8)	616 (60.2)
Medicinal treatment methods are difficult, painful or expensive (n=1027)	540 (52.6)	487 (47.4)

Table 3. Distribution of participants' TCAM practices (N = 1158)

Characteristics		n	%
Previous history of TCAM use	No	688	59.4
	Yes	470	40.6
Source of TCAM information (n=952)	Healthcare professionals	119	12.5
	Close circle (such as family, friends)	631	66.3
	Internet	100	10.5
	Newspaper, book, magazine	33	3.5
	TV, radio	19	2.0
	Education	50	5.2
Would he/she consider using TCAM in the future? (n=748)	Yes	221	29.5
	No	178	23.8
	Undecided	349	46.7
In what case would he/she use TCAM? (n=785)	Having knowledge about it	415	2.9
	Seeing that users benefit from it	211	26.9
	Upon a healthcare professional's recommendation	159	20.2
Who to apply for TCAM (n=1076)	Those with a document/certificate	424	39.4
	Acknowledged specialists in the relevant field	363	33.7
	No feature is required	289	26.9
Problems associated with TCAM use (n=1155)	No	910	78.8
	Yes	245	21.2
In which case does he/she resort to TCAM practices? (n=1126)	Before visiting the doctor	405	36.0
	After visiting the doctor	382	33.9
	In the case of medical complaints	339	30.1
General application of TCAM practices (n=1119)	Alone by stopping the current treatment	91	8.1
	With treatment	523	46.7
	After treatment	505	45.1
Post-TCAM experience	Positive outcomes	783	71.6
	Negative outcomes	65	5.9
	No change	130	11.9
	Did not notice	116	10.6
Did he/she recommend TCAM methods to others? (n=1100)	Yes	757	68.8
	No	343	31.2

Table 4. Factors Affecting TCAM Use Among Participants* (N = 1158)

Variable		β	p	OR	95% CI
Age (Numerical)		0.387	0.001	1.473	1.309-1.658
University	B University			1.00	
	A University	1.598	0.001	4.942	3.297-7.408
Gender	Male			1.00	
	Female	-0.154	0.421	0.857	0.588-1.248
Marital status	Married			1.00	
	Single	1.085	0.018	2.961	1.206-7.272
Location of long-term residence	Rural Setting			1.00	
	Urban Setting	0.439	0.017	1.551	1.081-2.225
Perceived income	Higher income		0.096	1.00	
	Higher Expenses	0.758	0.042	2.135	1.026-4.440
	Income equal to expenses	0.519	0.153	1.681	0.825-3.424
Chronic disease	No			1.00	
	Yes	0.726	0.021	2.067	1.114-3.836
Smoking	No			1.00	
	Yes	-1.828	0.001	0.161	0.095-0.273
Use of over-the-counter medicines	No			1.00	
	Yes	0.057	0.770	1.059	0.720-1.558
Source of TCAM information	Healthcare professionals		0.012	1.00	
	Close circle	-0.275	0.304	0.760	0.450-1.283
	Internet	-0.706	0.043	0.493	0.249-0.979
	Newspaper, book, magazine	-1.526	0.004	0.217	0.077-0.616
	TV, radio	-1.252	0.058	0.286	0.078-1.046
	Education	-0.869	0.042	0.419	0.181-0.970
Problems following TCAM use	No			1.00	
	Yes	2.454	0.001	11.630	7.489-18.059
Post-TCAM experience	Positive outcomes		0.001	1.00	
	Negative outcomes	-1.166	0.004	0.312	0.140-0.693
	No change	0.650	0.015	1.916	1.132-3.241
	Did not notice	0.547	0.044	1.728	1.016-2.939

* Nagelkerke R Square: 395, Omnibus Test of Model Coefficients p=0.001

DISCUSSION

In 2012, the Traditional and Complementary Medicine Department was founded in Turkey and some regulations were included in the 2013-2017 Strategic Action Plan. In 2014, acupuncture, phytotherapy, apitherapy, homeopathy, hypnosis, leech therapy, cupping therapy, osteopathy, chiropractic, reflexology, musicotherapie, prolotherapy, maggot therapy and ozone therapy were legalized but not covered by public health insurance. Irelated training programs were allowed in educational research hospitals and universities under the scope of the Ministry of Health. Although TCAM methods are used nationally and have been under medical record for the past 30 years, there is no data on the rates of TCAM users on a country level.[12] Consequently, the research data were compared with other researches conducted in the country on a local basis. The aim of the research is to determine the impact of relevant socio-demographic and cultural characteristics on TCAM practices among undergraduate healthcare students from two different cities with different cultures.

According to the WHO, more than three-quarters of the world's population trust complementary health approaches.[11] 59.4% of the participants reported using TCAM. The rate of TCAM use was found 60.5% in the study conducted in seven geographical regions of Turkey, while another study reported a rate of 28.7%.[11,13] A study conducted at a university in the United Arab Emirates found the rate of TCAM users as 34%, whereas another study from Uganda found that 59% of the participants used TCAM.[14,15] The rate of TCAM use varies from country to country and even in different regions of the same country.

In this research, the upmost TCAM methods of preference were praying, massage, aerobics and meditation. The participants reported not having previously heard of methods such as prolotherapy, homeopathy, ozone therapy and reflexology. Another domestic study demonstrated that cupping, acupuncture and hypnosis were the most preferred method among the participants, whereas chiropractic care and prolotherapy were the least.[16] A study conducted in Indonesia reported spiritual-religious therapy, dietary supplements,

music therapy and meditation as the most preferred TCAM methods among the participants, respectively.[17] TCAM therapies provide an optimistic outlook and touch individuals' feelings and spirituality, going beyond the 'symptoms' defined by conventional medicine.[18]

The reasons for TCAM use vary depending on many factors. The reasons for TCAM use among the individuals included factors such as insufficient health assurance, side effects of some medications, complications and fees of medical interventions, belief in the insufficiency of medical interventions to improve immunity or provide treatment, and health promotion.[19] In this study, the reasons for TCAM use among the participants included believing that it would provide additional benefit to the medical method, believing that the progression of the disease would be prevented and that it would promote health/well-being and provide physical relief. The reasons for not using TCAM included believing that medication treatment would be expensive or difficult; believing that it would not affect the quality of life or that it would not provide benefit to current methods. In another domestic study, the participants reported applying TCAM methods because they believed it would improve overall health and well-being; they saw that those who did were satisfied; and they were not satisfied with medical treatment, respectively.[11] A study conducted in India demonstrated that approximately half of the participants used Ayurvedic and herbal therapies.[20]

In this study, the proportion of those receiving TCAM training as an elective course was 5.3%, and the upmost reason for using TCAM methods was “seeing other users benefit from it”. On the other hand, 33.7% stated that “acknowledged specialists should be preferred" for TCAM. While the rate of those who experienced “negative outcomes” due to TCAM use was 21.2%, the rate of those picking “I will stop using treatment alone if I believe that TCAM is necessary” was 8.1%. Although the participants in the study of Ozyıldırım et al. stated that they wanted to take elective courses on TCAM, 40.% stated that they did not need medical training for applying such medical treatment methods.[21] TCAM trainings vary from country to country, even within the same country. It is noteworthy that TCAM trainings are very common in medical schools in Thailand where almost half of the schools offer TCAM training.[22] In another study, 39% of the participants reported finding TCAM practices beneficial. The study by Liem demonstrated that personal experience, recommendations and referrals were effective in the participants' TCAM preference, respectively.[17] An Australian study reported that students receiving education in different segments of healthcare differed from each other in terms of their preferred TCAM method of use, with the most preferred methods being massage, meditation, yoga and praying.[23] A study conducted with pharmacists in Lebanon revealed a much higher rate of educational background on TCAM at the undergraduate level among the participants than in this study, reporting that more than half of the participants found TCAM practices beneficial and they believed they had fewer side effects than medical practices.[24]

In present study, the reasons for not using TCAM were as follows, respectively; a negative experience associated with TCAM practices, studying at A university, being single, high expenses, chronic illness, not having experienced any benefits in previous experiences, not having noticed the results and living mostly in urban settings; whereas sources of TCAM information such as internet, newspaper, book, and magazine, along with an educational background were effective reasons for using TCAM. The study conducted by Aktas[25] did not find the difference in gender and location of residence significant, whereas the results of the study of Sahin et al. were contradictory to theirs.[26] The study conducted by Armson[23] reported that cultural characteristics were effective in TCAM use. The study conducted by Attyiat et al.[18] similarly reported that background of a previous training received by participants played a role in TCAM preference. Another available study found an association between education and gender variables and TCAM, in which the participants recommended the use of TCAM to others.[14] The research of Mederious found that, out of all socio-demographic variables, only the female gender was an influencing factor,whereas Mwaka et al.[15] reported the class of participants as the influencing factor.[27] On the other hand, Samara et al.[28] found the class, long-term location of residence and income level effective. Values and beliefs regarding religion, politics, and health affect the use of traditional treatment among individuals.[15]

It is important that health professionals know different approaches as they are the ones to moderate TCAM practices. The results of the study demonstrate that socio-demographic and educational characteristics are effective in use of TCAM methods among the undergraduate healthcare students from two different cities. It may be important to conduct research among students and healthcare professionals with different levels of health education for evaluating the impact of professional characteristics on TCAM.

ETHICAL DECLARATIONS

Ethics Committee Approval: Prior to the study, approval was obtained from the Research Ethics Committee of Bingöl University (26/03/2018:10) and the deanships of the schools where students were enrolled.

Informed Consent: All patients signed the free and informed consent form.

Referee Evaluation Process: Externally peer-reviewed.

Conflict of Interest Statement: The authors have no conflicts of interest to declare.

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