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ORIGINAL RESEARCH

Investigation of Attitudes Toward Complementary and Alternative Medicine among Young Adults

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Abstract

Objective: This study was designed to investigate the attitudes of individuals aged 18-24 towards complementary and alternative medicine.

Material-Method: The sample of the cross-sectional study, an analytical type of research, consisted of 178 people aged 18-24, with at least primary education, technological devices, and the ability to use internet networks. The data were collected using the Socio-Demographic Information Form and the Complementary, Alternative, and Conventional Medicine Attitudes Scale (CACMAS). Descriptive statistics, independent groups t-test, ANOVA, Mann-Whitney U, Kruskal-Wallis, Tukey tests, and regression analysis were used to analyze the data. The significance level was taken as 0.05 in the interpretation of the results.

Results: Several factors were found to positively impact mean scale scores ($p < 0.05$), including having a large family, perceiving complementary or alternative medicine practices as beneficial, recommending these practices to close relatives or friends. Additionally, it has been found that believing complementary medicine practices to be more beneficial than treatments provided by healthcare institutions also positively influenced scale score averages ($p < 0.05$).

Conclusion: The study found that around half of participants aged 18-24 used complementary and alternative medicine practices, and that some personal attitudes influenced attitudes towards complementary medicine. Hence, there exists a necessity to disseminate accurate information regarding the appropriate utilization of complementary medicine practices, ensuring their application by qualified individuals, and to engage the younger people in such initiatives.

Keywords: Alternative Treatment, Knowledge, Attitude, Complementary Medicine, Alternative Medicine

INTRODUCTION

Medicine is generally defined as the branch of science and art concerned with the sustenance and advancement of health and the elimination, control or prevention of disease. Complementary and Alternative Medicine (CAM) includes all methods used either alongside or instead of traditional and evidence-based medicine.[1] The World Health Organization (WHO) defines CAM applications as comprising culturally diverse value-based information, skills, beliefs, and practices aimed at preserving health, preventing, enhancing, or remedying physical and emotional problems.[2] The global prevalence of CAM usage is on the rise, attributed to several factors such as the widespread availability of information via the internet, a growing interest in individual health management, and heightened awareness among patients regarding independent treatment choices.[3] Incorporating a wide array of modalities like herbal medicines, vitamins, probiotics, psychotherapy, acupuncture, and cupping, the spectrum of CAM encompasses over 1800 distinct types.[4]

Examining the historical utilization of CAM practices reveals that Hippocrates, the esteemed ancient Greek physician hailed as the father of medicine, stated in his writings how the body could be healed through cupping and leeches.[5] In addition, these teachings influenced most medical practices in medieval Europe and served as the cornerstone for much of the educational curriculum in universities of that era.[5] In India, renowned for its utilization of alternative medicine practices, various medical systems are founded on the principle that diseases can be effectively treated with special herbal medicines as well as practices such as yoga and meditation. These traditions, which have been in existence for over 5000 years, form integral components of India's healthcare landscape.[6]

Traditional Chinese medicine relies on techniques such as acupuncture, moxibustion, and herbal remedies to restore balance within the body, with a history spanning over 3000 years.[7] In our country, the roots of CAM practice can be traced back to antiquity, with the first legal framework established by the "Acupuncture Treatment Regulation" aimed at grounding acupuncture treatments in scientific principles.[8] Following this, certain universities commenced acupuncture training programs with authorization from the Ministry of Health. The most recent advancement in this domain occurred with the issuance of the "Regulation on Traditional and Complementary Medicine Practices" in 2014. This comprehensive regulation delineates various aspects including the methodologies of traditional and complementary treatment practices, the requisite training and certification procedures for practitioners, as well as the operational standards for healthcare facilities offering these modalities.[9] Covered under this regulation are a range of treatments such as acupuncture, apitherapy, phytotherapy, hypnotherapy, leech therapy, homeopathy, chiropractic, cupping, larva therapy, mesotherapy, prolotherapy, osteopathy, ozone therapy, reflexology, and music therapy.[10]

Upon reviewing studies on CAM applications, Çekiç et al. (2021) found a notable prevalence of CAM usage among children with allergic diseases, with a higher inclination observed among younger parents. Güveli et al. (2021) reported that 46.8% of the participants in their study involving oncology patients endorsed CAM methods, incorporating plant-based remedies, herbal medicines, and religious and spiritual practices. Şahin et al. (2019) observed positive and moderate attitudes towards CAM among nursing students. Liu et al. (2014) conducted a systematic review and meta-analysis revealing the beneficial effects of St. John's wort oil on psychological problems during menopause. Aboufaras et al. (2023) noted that 37.5% of cancer patients perceive CAM as potentially beneficial, albeit hindered by socioeconomic and scientific barriers.[11-15] Despite the valuable insights provided by these studies, research remains limited to specific patient demographics. Hence, there is a pressing need for further investigation, particularly among healthy young adults. This study aims to evaluate attitudes towards complementary alternative medicine among individuals aged 18-24.

Research questions

- To what extent do the socio-demographic characteristics of 18-24-year-old young adults influence their attitudes towards complementary and alternative medicine?
- What are the prevailing attitudes of individuals aged 18-24 towards complementary medicine?

MATERIALS AND METHODS

Research design

The present research, conducted in Karatay district of Konya province between January and August 2023, adopts a cross-sectional study design within an analytical framework.

Population and sample

The study included people aged 18-24 living in Konya. For the sample calculation of the study, the G*Power 3.1 package was used. Based on the "Attitudes and Behaviors of the Students of the Faculty of Health Sciences towards Complementary, Alternative Treatment and Modern Medicine" score in the study titled "Complementary, Alternative and Conventional Medicine Attitudes Scale" by Ağan (2019), it was determined that the minimum sample size should be 176 with an effect size of 0.5, 95% confidence interval and 5% margin of error.[16] The research was carried out on a voluntary basis and a total of 178 participants who were willing to participate in the study formed the sample group for this research.

Inclusion and exclusion criteria

Individuals aged 18-24, with an education level of primary school and above, who have at least one technological device and can use internet networks were included in the study. People who struggled to communicate or worked in a healthcare setting were excluded from the study. Data from participants who provided incomplete responses to the questionnaires were excluded from the study subsequent to data analysis.

Data collection tools

The Socio-Demographic Information Form and the Complementary, Alternative and Conventional Medicine Attitudes Scale (CACMAS) were used to collect data.

Socio-demographic information form

This form, devised by the researchers following a thorough review of the literature, comprises 20 questions aimed at eliciting socio-demographic characteristics and attitudes toward complementary alternative medicine.[13,17,18]

Complementary, alternative, and conventional medicine attitudes scale (CACMAS)

The scale was developed by McFadden et al. in

2010.[19] The validity and reliability study of the scale was conducted by Ağan.[16] The seven-point Likert-type scale (strongly disagree=1, disagree=2, slightly disagree=3, undecided=4, slightly agree=5, agree=6, strongly agree=7) consists of 25 items. The scale has three sub-dimensions; "Philosophical harmony (items 1 to 13)", " Being displeased with Modern Medicine (items 18 to 24)" and "Holistic Balance (items 14 to 17)". Items 5, 12, 18, 19, and 20 of the scale are reverse-coded during analysis as they include negative expressions. High scores indicate that individuals have a positive view towards complementary alternative medicine and a negative view towards modern medicine. In Ağan's study, the Cronbach's alpha coefficient of reliability was calculated between .80-.82 for the subdimensions of the scale.[16] In this study, the Cronbach's alpha coefficient of reliability was calculated between .75-.80 for the sub-dimensions.

Application of data collection tools

To reduce the carbon footprint, the data collection tools have been converted into a link that can be accessed online via the Google Forms page. This link, created by the researchers, includes the consent form for voluntary participation, the questions in the Socio-Demographic Information Form and the items of the Complementary, Alternative and Conventional Medicine Attitudes Scale. This survey link was disseminated to individuals aged 18-24 through social platforms. Social network platforms created by schools were used to reach these age groups. It took approximately 5-10 minutes for the participants to complete the survey questions.

Statistical analysis

The data obtained from the study were analyzed using SPSS 25.0 (Statistical Package for Social Science) software. Descriptive statistics, t test in independent groups, Mann Whitney U test, one-way analysis of variance (ANOVA) in independent groups and regression analysis were used to analyze the data. The level of statistical significance was set at $p<0.05$ level.

Ethical considerations

Ethical approval was obtained from the ethics committee of KTO Karatay University prior to the commencement of the study (Decision Number: 2023/019, Decision Date: 22.12.2023). Participants were informed about the purpose of the study, and their consent was obtained verbally and via the online consent system.

RESULTS

The results of the analyses of data from 178 people aged 18-24 who participated in the study were examined.

The total score of the CACMAS was determined to be 107.23±13.10, with scores ranging from 57 to 145 points. Table 1 presents the average scores of the participants based on their socio-demographic characteristics.

Table 1. Distribution of Participants' Attitudes towards Complementary, Alternative and Modern Medicine according to Socio-demographic Characteristics (n=178)

Variables		n (%)	Mean±SD/ Mean Rank	Test Value	p
Gender	Female	130 (73)	108.37±12.46/ 93.80	U=2561.50	0.067
	Male	48 (27)	104.14±14.40/ 77.86		
Education level	High school graduate	20 (11.2)	108.47±13.52	t=-0.429	0.668
	University graduate	158 (88.8)	107.10±13.52		
Marital Status	Single	173 (97.2)	106.95±13.12	t=1.698	0.091
	Married	5 (2.8)	117.00±8.57		
Family Type	Nuclear family	149 (83.7)	106.17±13.31	F=3.489	**0.033***
	Extended Family	26 (14.6)	113.42±10.93		**0.025***
	Family Integrity Disrupted	3 (1.7)	105.66±2.08		
Family Income Status	Income Equal to Expenditure	15 (8.4)	102.06±13.81	t=-1.603	0.111
	Income Exceeds Expenditure	163 (91.6)	107.71±12.98		

*p<0.05, SD: Standard deviation t= Independent sample t-test, U=Mann Whitney U test, F= One-way analysis of variance in independent groups (Advanced analysis: Tukey HSD)

The analysis revealed that 73% of the participants were female, 88.8% were university graduates, 97.2% were single, 83.7% had a nuclear family, and 91.6% had an income exceeding their expenses. Upon examination of the data, no statistically significant differences ($p>0.05$) were found between

gender, educational status, marital status, family income status, and the mean total score of the CACMAS among the socio-demographic characteristics. However, a significant difference was observed between family type and mean total CACMAS scores ($p<0.05$). The results of Tukey multiple comparison analysis, conducted to investigate the source of the difference, showed that the participants from extended families exhibited higher attitudes towards complementary, alternative and modern medicine compared to those from nuclear families, with a mean score of 113.42±10.93 ($p=0.025$) (Table 1).

Table 2 presents the CAM applications used by the participants and the reasons behind their usage. The data revealed that cupping was the most prevalent practice among participants, with 56.2% reporting its use, followed by leech therapy at 14%, hypnosis at 12.4%, acupuncture at 9.6%, phytotherapy at 8.4%, and bloodletting at 3.9%. Furthermore, the primary reasons cited for CAM usage were muscle and joint pain, accounting for 62.9% of the participants, followed by headache/migraine at 15.7%, stress at 10.7%, weight management at 6.2%, and chronic conditions at 4.5% (Table 2).

Table 2. Preferred Applications and Reasons for the Participants to Use CAM (n=86)

		n	%
Applied CAM practices	Cupping	100	56.2
	Leech	25	14
	Hypnosis	22	12.4
	Acupuncture	17	9.6
	Phytotherapy	15	8.4
	Osteopathy	9	5.1
	Mesotherapy	7	3.9
	Bloodletting	7	3.9
	Ozone therapy	5	2.8
Reasons for using CAM applications	Muscle and joint pain	112	62.9
	Headache-Migraine	28	15.7
	Stress	19	10.7
	Weight	11	6.2
	Chronic conditions	8	4.5

*CAM: Complementary Alternative Medicine

Table 3 presents the comparison of the variables between the individual characteristics of the participants in the study on complementary medicine and the mean scores of the CACMAS. It was found that there was no significant difference between the individual characteristics concerning CAM applications, previous application status, number of applications, perceived benefits of CAM applications, and the overall mean score of the CACMAS ($p>0.05$).

However, the participants who thought that perceived CAM practices as beneficial exhibited the highest mean score, with a mean of 107.93±13.06. Similarly, those who recommended CAM practices to their close circles or friends had a mean score of 108.72±12.95. Notably, individuals who believed in the superior efficacy of CAM practices over treatments offered in healthcare institutions had the highest mean score of 112.14±12.69 ($p<0.05$) (Table 3).

A simple linear regression analysis was conducted to investigate the impact of family type, among other socio-demographic characteristics, on participants' attitudes towards complementary medicine. The analysis also explored the influence of beliefs regarding the usefulness of CAM practices, recommendations of CAM practices to close relatives or friends, and the perception of CAM practices providing greater benefits than conventional treatments, as well as the intention to apply CAM practices, on the total mean level of CACMAS. The results revealed that individuals from larger family types exhibited a significant positive effect of 6.426±2.369 points on the total mean level of the CACMAS. Similarly, those who believed that CAM practices provided more benefit than treatments administered in healthcare institutions demonstrated a significant positive effect of 6.787±1.937 points on the total mean level of CACMAS (Table 4).

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Table 3. Comparison of Participants' Attitudes Towards Complementary, Alternative and Modern Medicine and Individual Characteristics Towards Complementary Medicine (n= 178)

	n (%)	Mean±SD	t/F	p
Thinking that CAM applications are useful				
Yes	152 (85.4)	107.93±13.06	**t=-4.340**	**0.000****
No	26 (14.6)	99.42±16.83		
Previous use of CAM practices				
Yes	86 (48.3)	108.29±13.44	t=1.038	0.301
No	92 (51.7)	106.25±12.78		
Number of CAM applications				
Never used	86 (48.3)	105.58±15.09	F=0.156	1.881
Once or twice	52 (29.2)	105.55±10.44		
Three times and more	40 (22.5)	110.40±14.67		
Benefit from CAM applications				
Yes	90 (50.6)	108.41±13.30	t=1.629	0.301
No	88 (49.4)	104.93±14.36		
Recommending CAM practices to close relatives or friends				
Yes	125 (70.2)	108.72±12.95	**t=3.011**	**0.003****
No	53 (29.8)	102.52±14.98		
Thinking that CAM practices provide more benefits than the treatments applied in health institutions				
Yes	70 (39.3)	112.14±12.69	**t= 4.533**	**0.000****
No	108 (60.7)	103.40±13.58		

*p<0,05, **p<0.01, CAM: Complementary Alternative Medicine, SD: Standard deviation, t= Independent sample t test, F= One-way analysis of variance in independent groups

Table 4. Regression Analysis on the Contribution of Socio-demographic and Complementary Medicine Characteristics to Attitudes towards Complementary, Alternative and Modern Medicine

		Unstandardized	Standardized		
	Variables	B±SE	Beta	t	p
CACMAS	Constant	83.990±4.583	-	**18.328**	**0.000****
	Family type	6.426±2.369	0.188	2.712	0.007
	Thinking that CAM applications are useful	3.684±2.758	0.100	1.336	0.183
	Recommendation of CAM practices to close relatives or friends	2.504±2.209	0.088	1.133	0.259
	Thinking that CAM practices provide more benefit than the treatments applied in health institutions	6.787±1.937	0.254	3.504	**0.001****
Durbin-Watson=2.011 R^2=0.200 F=8.604 **p= 0.000***					

*p<0.05; **p<0.01 [1]: Regression Analysis (F); 2: Standard Error (SE); Coefficient Analysis (t); Summary statistics are given as Regression Coefficient (Standard Error) values.

DISCUSSION

This study aimed to investigate the perspectives of individuals aged 18 to 24 regarding complementary and alternative medicine. Our findings revealed that there were no significant differences in the mean total CACMAS score based on gender, educational status, marital status, or family income status. However, a significant relationship was observed between family type and the mean total CACMAS score. Specifically, participants from extended family backgrounds displayed markedly higher attitudes towards complementary, alternative and modern medicine compared to those from nuclear families. Arslan et al. (2020) reported that individuals from extended families were approximately 8 times more likely to use CAM compared to those from nuclear families, with significantly higher CAM scores observed in the former group.[20] Similarly, Yeşil et al. (2018)

reported that 13.3% of the participants started to use CAM under the influence of family members.[21] Our research findings are consistent with the literature, indicating that elders within extended families may have an impact on other family members' attitudes and behaviors towards CAM. In addition, the higher average age within large families may contribute to factors such as chronic diseases and unmanageable pain, potentially driving increased interest in CAM applications perceived as more affordable and accessible.

In our study, 50.6% of participants reported benefiting from CAM treatments, with 62.9% stating they used CAM treatments specifically to alleviate muscle and joint pain. The rates of benefit from CAM treatments can vary depending on the reason for the application and the specific method employed, as evidenced by previous studies. Dedeli et al. (2011) found that patients' skepticism regarding the efficacy of these treatments influenced the reported benefits. Güveli et al. (2021) observed a benefit rate of 26.1% among oncology patients using CAM, while Çekiç et al. (2021) reported a benefit rate of 70% among allergic patients. Additionally, Arslan et al. (2020) reported that 52.7% of the participants perceived CAM treatments as beneficial in their study.[11,12,20,22] This study identified that the most prevalent CAM practices among the participants, with cupping being the most commonly used at 56.2%, followed by leech therapy at 14%, hypnosis at 12.4%, acupuncture at 9.6% and bloodletting at 3.9%. Ak et al. (2020) reported cupping as the most commonly used CAM application at 39.7%, followed by leech therapy at 17.7% and acupuncture at 16.1%. Boccolini et al. (2022) reported that the most commonly used practices were phytotherapy, acupuncture, homeopathy, meditation and yoga.[23,24] Despite slight variations, our findings align with previous studies in the literature, which have consistently identified cupping, leech therapy, hypnosis and acupuncture as among the most commonly utilized CAM methods, with usage rates ranging from 5% to 55%.[13,23,25,26,27] It is worth noting that cultural characteristics may influence the prevalence of certain CAM practices, such as cupping, in different regions. Therefore, variations in cupping practices between studies conducted in Turkey and those in other countries are expected due to cultural differences.

The study revealed that 39.3% of the participants perceived CAM practices to be more beneficial than treatments provided by healthcare institutions, and individuals holding this belief demonstrated significantly higher mean scores compared to those who did not share this view. In alignment with our findings, Güveli et al. (2021) found that 46.8% of the participants believed in CAM practices, while Çekiç et al. (2021) reported that 27.8% of CAM users resorted to these practices due to dissatisfaction with medical treatments. Similarly, Aboufaras et al. (2023) observed high expectations of benefits from CAM practices among cancer patients, leading to their preference for CAM.[11,12,15] The findings echo those in the literature, indicating that perceptions such as dissatisfaction with medical treatments and concerns about their side effects, coupled with the perceived efficacy of CAM practices, contribute to the growing preference for CAM over conventional treatments provided by healthcare institutions.

In their study, Sharifi et al. (2022) reported that 72.7% of women who utilized CAM did so based on recommendations from family and close friends. Similarly, Başer et al. (2023) found that 50.8% of the participants adopted CAM practices upon hearing about them from their friends, while Liem et al. (2017) (59%) noted that 59% of individuals in Indonesia primarily acquired information about CAM from friends. Moreover, Arslan et al. (2020) indicated that 44.5% of the participants in their study turned to CAM practices through recommendations from relatives or friends. Another study revealed that 99.5% of the participants obtained information about CAM from their close environment such as friends, neighbors and relatives.[20,27,28,29,30] The similarity between our findings and those in the literature underscores the similarity in the ways individuals are informed about CAM methods, predominantly through interpersonal networks such as friends, neighbors, and relatives.

CONCLUSION

Complementary and alternative medicine encompasses a wide range of health practices rooted in traditional medicine or cultural traditions, which may not be fully integrated into conventional healthcare systems. The utilization of CAM is on the rise today. The study revealed that 48.3% of individuals aged 18-24 utilize CAM and have positive attitudes towards complementary medicine. Moreover, attitudes towards CAM were significantly higher among those from larger

families and individuals who believed in the superior benefits of CAM practices compared to treatments provided by healthcare institutions. It is therefore advisable to educate young people about the potential benefits and risks associated with CAM, as well as how they can effectively integrate these practices into their healthcare regimen.

Limitations

This study has several limitations. Firstly, the findings of the research are primarily applicable to the participants who were involved in the research and may only be valid for the specific time period during which the research was conducted, given its cross-sectional design. Additionally, collecting the data online via web-based platforms may introduce bias, as it limits the sample to individuals with internet access, computer or smartphone ownership, and technical literacy. Another limitation stems from the use of self-report questionnaires, which may be subject to response bias or inaccuracies. It is crucial for future studies to address these limitations and consider alternative methodologies to ensure more comprehensive and representative results. Despite these limitations, the study contributes significantly as the first investigation into young adults' attitudes towards complementary and alternative medicine.

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Author contributions: Conceptualization: [MY, BB]; Design: [MY, BB]; Writing: [MY]; Investigation/Data collection: [MY, BB]

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