



Intergenerational Differences in using Complementary and Alternative Medicine Practices

Hilal Uysal*, Busra Cansu Karvel and Murat Yigit

Department of Medical Nursing, Florence Nightingale Faculty of Nursing, Istanbul University-Cerrahpasa, Istanbul, Turkey

*Corresponding e-mail: hilaluysal@gmail.com

ABSTRACT

Objective: This study aims to discover the reasons for using CAM practices among individuals in different age groups, to examine the differences between generations in terms of CAM use, and to explore the attitudes and behaviors of different generations regarding CAM use. **Methods:** This study was conducted between November 2016 and April 2017 with 320 people who agreed to participate in the study. Questionnaires were used to determine their socio-demographic characteristics as well as attitudes and behaviors towards the use of CAM practices. **Results:** Of the participants, 67.2% were female; 14.4%, 10.9%, 20.6%, and 54.1% were in the experienced-silent, baby boomer, X, and Y generations, respectively; and 65% experienced at least one CAM practice. The study determined that 50% of the participants in the experienced-silent generation, 65.7% of the participants in the baby boomer generation, 59.1% of the participants in the X generation, and 71.1% of the participants in the Y generation had used CAM practices. A statistically significant difference was found between these generations in terms of CAM use ($p < 0.05$). **Conclusions:** The present study determined that the number of CAM users has been increasing, and found that the majority of participants had knowledge about CAM practices, but did not consider CAM as a better treatment option. They did not agree that alternative therapies were as effective as conventional therapies, so they were hesitant to use CAM practices.

Keywords: Alternative therapies, Attitude, Chronic disease, Complementary therapies

INTRODUCTION

Complementary and alternative medicine (CAM) is defined as a group of different medical and health care systems, practices, and products that are not considered as a part of conventional medicine [1]. According to the National Center for Complementary and Alternative Medicine (NCCAM), CAM practices in health management are used to treat existing diseases, prevent diseases, and maintain health [2,3].

Many of the treatments outside modern and scientific treatments are generally referred to as complementary and alternative treatments [4]. Many individuals use these approaches and practices together with conventional therapies [1]. Today, one of the most important factors in the use and maintenance of CAM practices by individuals is the lower costs of herbal supplements. In addition, individuals report feeling better when using these herbal supplements, and therefore, those who use prescription drugs are inconsistent with their conventional medical treatments [5].

The rate of CAM use was higher among young people, women, those with a high level of education and income, those without health insurance, and those with poor health status [6]. The National Health Interview Survey (NHIS) in 2002-2012 described the most commonly used complementary health and mental-physical approaches among adults as follows: natural products (supplements other than intensive vitamin and mineral use) (17.7%), yoga, Tai Chi, or Qi Gong (10.1%), chiropractic or osteopathy manipulation (8.4%), meditation (8%), massage (6.9%), special diets (3%), homeopathy (2.2%), progressive relaxation exercises (2.1%), and imagination (1.7%) [1]. Another study showed that people with cardiovascular disease use CAM practices such as meditation, yoga relaxation exercises, and other methods of psychophysiological self-regulation as a part of imagination and stress management [7]. In Turkey, there were few studies assessing CAM practices and the reasons for using CAM practices. The present study found that more than half of the respondents used various CAM practices [8-10].

PATIENTS AND METHODS

Study Purpose and Type

Because different forms of behaviors can be observed between generations due to differences in their daily living conditions and requirements, this descriptive study was conducted to find out the reasons for CAM use by individuals in different age groups, to examine the differences between generations in terms of CAM use, and to explore the attitudes and behaviors of different generations to learn about their opinions regarding CAM use [11,12].

Study Population and Sample

A total of 320 people, who were informed about the study purpose and expectations and agreed to participate in the study, including students and faculty members from two faculties in the university and residents from 2 different resting and nursing homes, participated in the study conducted between February 2017 and April 2017. No specific sampling method was used; all individuals who could be reached during the data collection period were included in the study.

Criteria for Inclusion and Exclusion in the Study

Those who agreed to participate in the study were approved by the authorities in the resting and nursing homes, and whose health status was appropriate for the interview were included in the survey. Those who were not willing to participate in the study had health problems or were diagnosed with serious mental diseases affecting their perception in understanding survey questions or preventing communication were not included in the study.

Data Collection Tools

A 14-item survey form was used to determine the participants' socio-demographic characteristics, general health conditions, and drug use status. The age groups of participants were determined as follows: experienced (silent) generation (1925-1945; 71-91 years), baby boomer generation (1946-1964; 52-70 years), X generation (1965-1979, 37-51 years), and Y generation (1980-1999, 17-36 years).

The questionnaire used in the study was prepared by Ari and Yilmaz and consisted of 64 questions in which the individuals' attitudes and behaviors towards CAM use were investigated and the structural equality model was evaluated [8]. The questionnaire included questions:

- Evaluating whether the respondent used or thought about using CAM practices (15th question-21 items)
- If yes, the reasons for using CAM practices (16th question), and if no, the reasons for not using CAMs (17th question)
- Whether the respondent used any type of CAM within the last 3 months (18th, 19th questions-28 items)

The authors noted that the questionnaire was powerful for establishing a relationship between the factors affecting respondents' attitudes and behaviors regarding CAM use [8].

Data Evaluation

Frequency, arithmetic mean, and standard deviation were used in the statistical evaluation of the qualitative and quantitative variables of the study. Statistical tests (significance tests, variance analysis, and correlation tests) were performed to evaluate the relationship and differences between two or more variables. The research data were analyzed using the statistical package for social sciences (SPSS) version 21 software program (IBM Corp., Armonk, NY, USA). The value of significance was regarded as $p < 0.05$.

Ethical Consideration

First, the necessary permission for the scale used in the study was obtained from the authors who developed the scale. After an institutional approval was obtained from the department where the study was conducted, the ethics committee approvals (with the committee decision dated February 16, 2017, and numbered 159) from the Ethics Committee for Clinical Investigations, Faculty of Dentistry, Istanbul University were received. Then the patients invited to the study were informed about the purpose and expectations in accordance with the Helsinki declaration. After their verbal consents for voluntary participation were obtained, the patients were included in the study.

RESULTS

Descriptive Statistics

Socio-demographic data: Of the participants, 67.2% were female, 32.8% were male, 14.4% were in the experienced-silent generation (71-91 years old), 10.9% were in the baby boomer generation (52-70 years old), 20.6% were in the X generation (37-51 years old), 54.1% were in the Y generation (17-36 years old) (Table 1).

Table 1 Socio-demographic, general health, and drug use data

Socio-demographic data		N	%
Gender	Female	215	67.20%
	Male	105	32.80%
Age groups	71-91 years: Experienced silent generation	46	14.40%
	52-70 years: Baby boomer generation	35	10.90%
	37-51 years: X generation	66	20.60%
	17-36 years: Y generation	173	54.10%
Educational status	Illiterate	3	0.90%
	Primary education	16	5.00%
	High school	28	8.80%
	University	152	47.50%
Class	Graduate	121	37.80%
	1st grade	6	1.90%
	2nd grade	60	18.80%
	3rd grade	10	3.10%
	4th grade	26	8.10%
Employment Status	Postgraduate/graduate	218	68.10%
	Employed	175	54.70%
Occupation	Unemployed	145	45.30%
	Retired	43	13.40%
	Teacher/instructor	109	34.10%
	Student	91	28.40%
	Self-employed	10	3.10%
	Nurses, technicians, etc.	67	20.90%
Income status	I spend money comfortably for my daily needs	117	36.60%
	I can meet my daily needs	175	54.70%
	I can only meet my basic needs	25	7.80%
	I cannot even meet my basic needs	3	0.90%
Residential status	With family/relatives/friends	252	78.80%
	In dormitory/nursing home	51	15.90%
	Alone	17	5.30%
Social Security	Yes	303	94.70%
	No	17	5.30%
General health and drug use data		N	%
Chronic disorder	Yes	66	20.6%
	No	254	79.4%
Chronic disease	Cardiovascular diseases	40	12.5%
	Digestive system diseases	4	1.3%
	Blood diseases	2	0.6%
	Skin diseases	2	0.6%
	Metabolic diseases	13	4.1%
	Nervous system diseases	3	0.9%
Do you need to regularly use prescription drugs?	Yes	63	19.7%
	No	257	80.3%

If so, which drugs?	Antibiotics	3	0.9%
	Anticoagulants	5	1.6%
	Anti-inflammatories	1	0.3%
	Antihypertensive	36	11.3%
	Anti-allergic	1	0.3%
	Iron medicine	1	0.3%
	Do not use	273	85.3%
Regular use of medication	Yes	59	18.4%
	No	4	1.3%

Status of using CAM Practices

The most common CAM practices that participants used or considered using are herbal treatments (20.6%), massage (15%), home-made drugs (14.1%), music therapy (11.9%), religious healing (10.9%), relaxation techniques (9.7%), life style diets (5.9%), art therapy (5.3%), solidarity groups (5.0%), and dance therapy (4.4%) (Table 2). No significant difference was found between the generations in terms of the preferred CAM practices except for dance therapy (χ^2 : 9.37, $p=0.02$) and homeopathic therapy (χ^2 : 7.74, $p=0.05$). The number of people using dance therapy in the X and Y generations was higher than in other generations. Only 2 persons in the baby boomer generation were found to use homeopathy.

Table 2 CAM practices used or considered of using

Variables	I have not thought about using it/I have not used		I have been using it for over 6 months/I have used it before	
	N	%	N	%
Acupuncture	317	99.1%	3	0.9%
Ayurveda Medicine	320	100.0%	0	0.0%
Aromatherapy	317	99.1%	3	0.9%
Art Therapy	303	94.7%	17	5.3%
Dance Therapy	306	95.6%	14	4.4%
Energy Therapy	312	97.5%	8	2.5%
Home-made drugs (Folk medicines)	275	85.9%	45	14.1%
Herbal Treatment	254	79.4%	66	20.6%
Homeopathic Therapy	318	99.4%	2	0.6%
Hypnosis	318	99.4%	2	0.6%
Lifestyle diets (vegetarian, macrobiotic)	301	94.1%	19	5.9%
Massage Therapy	272	85.0%	48	15.0%
Meditation	312	97.5%	8	2.5%
Mental Imagination	308	96.3%	12	3.8%
Music Therapy	282	88.1%	38	11.9%
Relaxation Techniques	289	90.3%	31	9.7%
Solidarity Groups	304	95.0%	16	5.0%
Religious Healing	285	89.1%	35	10.9%
Tai Chi	318	99.4%	2	0.5%
Yoga	311	97.2%	9	2.8%

No significant difference was found between the variables of gender and preferred CAM practices ($p>0.05$). The study found that 23.5% of the female participants and 11.5% of the male participants used religious healing, and determined that the majority of CAM users were women, although the energy therapy users were primarily men.

It was determined that participants with chronic disease had used at least one CAM practice including aromatherapy (χ^2 : 3.92, $p=0.04$), energy therapy (χ^2 : 4.32, $p=0.03$), home-made drugs (χ^2 : 9.41, $p=0.002$), solidarity groups (χ^2 : 5.50, $p=0.01$), religious healing (χ^2 : 4.48, $p=0.03$), and yoga (χ^2 : 6.90, $p=0.009$) for more than 6 months. The majority of participants with chronic disease reported using CAM practices mostly because of stress (χ^2 : 11.55, $p=0.04$) and headache (χ^2 : 14.33, $p=0.01$), and a statistically significant difference was found between the generations in terms of the reasons for CAM use.

It was also determined that 50% of the participants in the experienced-silent generation, 65.7% of participants in the baby boomer generation, 59.1% of the participants in the X generation, and 71.1% of the participants in the Y generation had used at least one CAM practice. A statistically significant difference was found between these generations in terms of CAM use ($p < 0.05$) (Table 3).

Table 3 CAM use according to generation

CAM use	Experienced silent generation (71-91 years) N (%)	Baby boomer generation (52-70 years) N (%)	X generation (37-51 years) N (%)	Y generation (17-36 years) N (%)	Total N (%)	
Yes	23 (50.0%)	23 (65.7%)	39 (59.1%)	123 (71.1%)	208 (65.0%)	χ^2 : 8.39 p=0.03
No	23 (50.0%)	12 (34.3%)	27 (40.9%)	20 (28.9%)	112 (35.0%)	
Total	46	35	66	173	320	

χ^2 : Pearson chi-square

Reasons for using and not using CAM practices: A statistically significant difference was found between the generations in terms of the reasons for using CAM practices, including stress (χ^2 : 34.29, $p=0.003$), digestive problems (χ^2 : 27.06, $p=0.02$), depression (χ^2 : 24.45, $p=0.05$), and headache (χ^2 : 25.1, $p=0.04$). Stress ranked in the first group of reasons for using CAM practices in all generations. Influenza and cold were also ranked in the first group of reasons for using CAM practices in all generations except the baby boomer generation. In addition, the X-generation used CAM practices to give up smoking. The X and Y generations ranked allergies in the first group of reasons for using CAM practices. Pain (digestive system problems, back and joint pains, and headache) and insomnia were ranked among the first 3 reasons for using CAM practices in the experienced-silent generation (Table 4).

Table 4 Reasons for using and not using CAM practices among generations in order of importance

Reasons for using CAM practices in order of importance	Experienced silent generation (71-91 years old)	Baby boomer generation (52-70 years old)	X generation (37-51 years old)	Y generation (17-36 years old)
1 st	Stress Influenza and cold Digestive Problems Pain	Stress Dissatisfaction from Conventional Drugs	Allergies Stress Influenza and Cold To give up smoking	Allergies Stress Influenza and Cold
2 nd	Osteoarthritis/Joint pain Back Pain Insomnia	Allergies Back pain Influenza and Cold Dissatisfaction with Doctors Insomnia	Osteoarthritis/Joint pain Headache	Osteoarthritis/Joint pain Back Pain
3 rd	Headache Hypertension	Osteoarthritis/Joint pain Digestive Problems Headache Hypertension Pain	Back Pain Digestive Problems Hypertension Insomnia Dissatisfaction with Conventional Drugs	Digestive Problems Depression Dissatisfaction with Doctors Insomnia Dissatisfaction with Conventional Drugs
Reasons for not using CAM practices in order of importance	Experienced silent generation (71-91 years old)	Baby boomer generation (52-70 years old)	X generation (37-51 years old)	Y generation (17-36 years old)
1 st	Inadequate knowledge of alternative medicine practitioners High price No doctor dispatch Lack of research	Inadequate knowledge of alternative medicine practitioners The risk of side effects High price	Inadequate knowledge of alternative medicine practitioners Negative attitude of the family Lack of reliability Lack of research	Inadequate knowledge of alternative medicine practitioners Negative attitude of the family

2 nd	Negative attitude of the family Not covered by medical insurance	Negative attitude of the family Not covered by medical insurance Lack of reliability	The risk of side effects No doctor dispatch	The risk of side effects High price Lack of reliability No doctor dispatch
3 rd	The risk of side effects Lack of reliability	No doctor dispatch Lack of research	High price Not covered by medical insurance	Not covered by medical insurance Religious

No significant difference was determined between the generations in terms of the reasons for not using CAM practices ($p>0.05$). All generations ranked the inadequate knowledge of alternative medicine practitioners in the first group of reasons for not using CAM practices. In addition, the X and Y generations also reported the negative attitudes of their families as another important reason for not using CAM practices, whereas the baby boomer and experienced-silent generations stated high price as another important reason for not using CAM practices (Table 4).

Evaluation of participant attitudes and expressions about using cam practices: As seen in Table 5, 45.6% of the participants never searched for information about CAM practices, whereas 44.4% sometimes searched for information about CAM practices in the last 3 months. The study found 51.2% of the participants did not think using CAM practices would be a good example for other people in the society, 50.6% of the participants stated their near circle did not inspire the use of CAM practices (Table 5).

Table 5 CAM use of participants in the last three months and relevant opinions

Variables	Never		Sometimes		Frequently	
	N	%	N	%	N	%
CAM 1. I searched for information about CAM practices.	146	45.6%	142	44.4%	32	10.0%
CAM 2. I thought if I used CAM practices I would be a good example to other people.	164	51.2%	132	41.3%	24	7.5%
CAM 3. I was inspired by my near circle to use CAM practices	162	50.6%	126	39.4%	32	10.0%
CAM 4. My inner and near circles encouraged me to use CAM practices	172	53.8%	107	33.4%	41	12.8%
CAM 5. I noticed that many people use CAM practices	147	45.9%	127	39.7%	46	14.4%
CAM 6. I see myself as a person using CAM practices	168	52.5%	127	39.7%	25	7.8%
CAM 7. I realized that CAM use was a better option.	149	46.6%	138	43.1%	33	10.3%

According to the study results, 35.6% were uncertain about using CAM practices as a better treatment option, 52.8% thought that the number of CAM users has been increasing daily, 35.6% disagreed that most of the alternative treatments are as effective as conventional treatments, 43.1% thought that meditation makes people feel better, and 43.1% thought that alternative medicine has indisputably proven benefits (Table 6).

Table 6 Participants' opinions about using CAM practices

Variables	I disagree		I neither agree nor disagree		I agree	
	N	%	N	%	N	%
L1. I think that CAM is a better treatment option.	110	34.4%	114	35.6%	96	30.0%
L2. I think that I have enough information about CAM practices.	139	43.4%	104	32.5%	77	24.1%
L3. I think that the number of CAM users has been increasing daily.	67	20.9%	84	26.3%	169	52.8%
L4. I think that CAM users are good role-models in society	106	33.1%	118	36.9%	96	30.0%
L5. I think most of the alternative treatments are as effective as conventional treatments.	114	35.6%	97	30.3%	109	34.1%
L6. I think meditation makes people feel better.	92	28.7%	90	28.1%	138	43.1%
L7. I think most people achieve their desired result using acupuncture.	107	33.4%	149	46.6%	64	20.0%
L8. I think acupuncture is a beneficial treatment.	90	28.1%	150	46.9%	80	25.0%
L9. I think alternative medicine is dangerous.	130	40.6%	135	42.2%	55	17.2%
L10. I think there is not enough evidence to support alternative medicine.	89	27.8%	118	36.9%	113	35.3%

L11. I think meditation is a waste of time.	157	49.1%	117	36.6%	46	14.4%
L12. I think acupuncture is a risky procedure.	112	35.0%	151	47.2%	57	17.8%
L13. My family does not encourage me to use CAM practices.	84	26.3%	139	43.4%	97	30.3%
L14. The people whose opinions I value encourage me to use CAM practices.	91	28.4%	135	42.2%	94	29.4%
L15. My near circle encourages me to use CAM practices.	97	30.3%	125	39.1%	98	30.6
L16. I am not sure I could find enough time to meditate if I want to.	116	36.3%	104	32.5%	100	31.3%
L17. I am sure I will use CAM practices.	100	31.3%	118	36.9%	102	31.9%
L18. I am sure I can find alternative herbs that I want in herbal shops	71	22.2%	88	27.5%	161	50.3%
L19. I am sure I can find alternative treatment centers near my home.	97	30.3%	120	37.5%	103	32.2%
L20. Most of the alternative medicine practitioners are regarded as highly as conventional medicine practitioners.	113	35.3%	131	40.9%	76	23.8%
L21. Alternative medicine has indisputable proven benefits.	69	21.6%	113	35.3%	138	43.1%

The majority of participants in the Y (36.4%) and X (39.4%) generations thought most of the alternative treatments were as effective as conventional treatments, whereas the majority of participants in the baby boomer (48.6%) and experienced-silent (54.3%) generations disagreed with this idea (χ^2 : 15.07, $p=0.02$). The majority of participants in the Y (49.1%) and X (47%) generations thought that meditation makes people feel better, whereas the majority of participants in the experienced-silent (43.5%) generation disagreed with this idea (χ^2 : 14.22, $p=0.02$). The majority of participants in the Y (53.2%), X (47%), and baby boomer (51.4%) generations considered acupuncture a beneficial type of treatment, whereas the majority of participants in the experienced-silent (52.2%) generation disagreed (χ^2 : 20.24, $p=0.003$).

The majority of participants in the X (39.4%) generation thought there was not enough evidence to support alternative medicine, whereas the majority of participants in the experienced-silent (45.7%) generation disagreed (χ^2 : 12.88, $p=0.04$). The majority of the participants in all generations (experienced-silent 60.9%; baby boomer 37.1%; X 45.5%; and Y 49.7%) disagreed that meditation is a waste of time (χ^2 : 14.77, $p=0.02$). The majority of participants in the Y (50.3%), X (53%), and baby boomer (45.7%) generations were uncertain if acupuncture is a risky procedure, whereas the majority of participants in the experienced-silent (47.8%) generation agreed with this idea (χ^2 : 14.89, $p=0.02$).

The majority of participants in the experienced-silent (52.2%) generation stated that their families did not encourage them to use CAM practices (χ^2 : 25.89, $p=0.000$), whereas the majority of participants in the Y (48.6%) generation stated that their families were uncertain about encouraging them to use CAM practices (χ^2 : 24.61, $p=0.000$). In addition, the majority of participants in the experienced-silent (56.5%) generation reported that the people whose opinions they respected did not encourage them to use CAM practices (χ^2 : 12.88, $p=0.04$). The majority of participants in the experienced-silent (50%) generation reported that their near and inner circles did not encourage them to use CAM practices (χ^2 : 16.70, $p=0.01$).

The majority of participants in the experienced-silent (65.2%) and baby boomer (40%) generations disagreed that alternative medicine practitioners are regarded as highly as conventional medicine practitioners, whereas the majority of participants in the X (27.3%) and Y (27.2%) generations agreed with this idea (χ^2 : 23.47, $p=0.001$).

DISCUSSION

Socio-Demographic Data

Generations may differ in characteristics, attitudes, values and beliefs, business ethics and habits, life expectations, roles, motivations, and adaptation to new situations [13]. Therefore, the present study determined differences between generations in terms of their reasons for using CAM practices, and their opinions, attitudes, and behaviors regarding using CAM practices.

The major generational divisions are the experienced-silent, baby boomer, X, and Y generations [12]. However, most of the studies on CAM use evaluate the X and Y generations [14]. Cetin found that majority of the respondents were female (51.3%), had high educational levels, were in the X generation (46.6%; 34.5% of the respondents were in the Y generation and 18.9% in the baby boomer generation), had middle income (49.2%), were not employed (58%), and

20.7% of them had a serious health problem in the last year [9]. A total of 320 people participated in the present study. Of these participants, 67.2% were female, and 14.4%, 10.9%, 20.6%, and 54.1% were in the experienced-silent, baby boomer, X, and Y generations, respectively. Most participants had a high level of education, were employed, had sufficient income to meet their needs comfortably, and lived with family/relatives/friends (Table 1).

Some studies state the use of CAM practices which can vary according to gender, age, marital status, income level, education level, and religiosity, such that CAM users were mostly female, middle aged or older, have high income levels and education, and are religious [2,15,16]. Guven, et al., found that the frequency of CAM use increased with age, which is higher in women than men, and those with hypertension and other chronic diseases use CAM practices more than those without chronic diseases ($p < 0.05$) [17]. In addition, Krastin, et al., determined that alternative therapies are commonly used in all socio-economic groups, and therefore they emphasized that healthcare workers should be aware of whether their patients use CAM practices [18]. However, O'Callaghan and Jordan found that young people had a higher tendency to use CAM practice [19]. Similarly, the present study found that more than half of the individuals in each generation group used CAM practices, but the number of persons using CAM practices was higher in the X and Y generations than in the other generations (Table 4). Kutlu, et al., found the use of CAM practices was higher among those who were single and have a high level of education [20]. Chen and Chang determined that the use of CAM practices is higher among single individuals with high levels of income in the X, Y, and baby boomer generations ($p < 0.05$) [21].

Another study determined that people with high levels of education (in both genders) preferred the herbal treatment method out of all CAM practices [22]. Contrary to other studies, Akyurek, et al., found that mostly individuals with low socioeconomic status and educational levels used CAM practices [23]. In the present study, no statistically significant difference was found between the variables of gender and CAM use ($p > 0.05$), but it was determined that women (23.5%) and men (11.5%) were more likely to use religious healing as a CAM practice, the majority of CAM users were female, and only the majority of those using energy therapies were male. Similar to other studies, the present study also determined that the ratio of CAM users in the baby boomer (65.7%) and Y (71.1%) generations were higher than other generations (Table 3).

Individuals with a certificate of primary education used or thought about using CAM practices such as home-made drugs (25%, $p > 0.05$), herbal remedies (37.5%, $p > 0.05$), massages (37.5%, $p > 0.05$), music therapy (18.8%, $p > 0.05$), solidarity groups (18.8%, $p = 0.04$), religious healing (56.2%, $p = 0.000$), and yoga (12.5%, $p > 0.05$) in the last 6 months more than those with a bachelor's or higher degree. Similar to the present study results, Akyurek, et al., found that those with lower levels of education used CAM practices more than those with higher levels of education did [23].

The employed participants mostly used CAM practices such as massage (58.3%), herbal treatment (21.2%), home-made drugs (12.2%), relaxation techniques (9.7%), and lifestyle diets (6.9%) in the last 6 months. The majority of the retired/unemployed participants (20.9%) and nurses and technicians (19.4%) used massage therapy (χ^2 : 3.40, $p = 0.49$). In addition, 20% of the self-employed participants, 18.6% of the retired/unemployed participants, and 17.6% of the student participants used religious healing techniques within the last 6 months (χ^2 : 15.33, $p = 0.004$). Moreover, 25.6% of the retired/unemployed participants and 19.4% of the participant nurses and technicians used herbal treatment method within the last 6 months (χ^2 : 2.26, $p = 0.68$). Furthermore, 25.6% of the retired/unemployed participants, 20% of the self-employed participants, and 12.8% of the participant teachers/teaching staff used home-made folk medicine within the last 6 months (χ^2 : 6.10, $p = 0.19$).

The participants who comfortably met their daily financial needs stated that they used CAM practices such as herbal therapy (23.4%), massage (19.7%), music therapy (14.5%), home-made drugs (12.8%), religious healing (12%), relaxation techniques (11.1%), art therapy (6.8%), dance therapy (6.8%), lifestyle diets (6.8%), energy therapy (3.4%), and meditation (2.6%) in the last 6 months ($p > 0.05$).

Many studies reported that non-medical alternative and traditional therapies are used to prevent or treat diseases [9,16,24]. Çetin stated that those who have serious health problems prefer medical treatment but think herbal medicines are supportive treatment, 35.5% of these individuals using CAM practices suffered from diabetes, hypertension, high cholesterol, and rheumatic problems, 8.1% had mental and neurological disorders, and 6.5% had some kind of cancer [9]. Another study reported that those using CAM practices had at least one health problem, and 90% of them had more than one medical condition ($p < 0.01$) [21]. Kurt, et al., report that in Turkey, asthma patients prefer CAM

practices, 38% of the adults with allergies frequently use CAM practices, and the most commonly used CAM practice by patients is herbal therapy (30%) [25]. Many studies report the use of CAM is widespread among cancer patients because they are desperate for healing [26]. Another study stated that cancer patients and their relatives often apply CAM methods in their daily lives [27]. Efe, et al. found 94.3% of patients with hypertension used herbal methods to lower their blood pressure [28]. Sağkal, et al., stated 77% of the individuals in the baby boomer generation (67.67 ± 6.65 years) suffered from chronic diseases, and 70.7% of them mostly used herbal treatment methods [29]. However, they less frequently applied acupuncture, meditation, therapeutic touch/reiki, or bioenergy methods. In the same study, 60-80% of those with respiratory, gastrointestinal, urinary, musculoskeletal, and endocrine system problems used religious healing practices. In addition, the same study also found elderly individuals who used CAM practices such as exercise (49.1%), massage (59.8), chiropractic treatment (28.3%), and reflexology (26.1%) indicated that they experienced physical relaxation after CAM use, and those elderly individuals who used herbal treatments (71.2%) believed that they would benefit from herbal treatment as an additional therapy to medical treatment [29]. Similarly, in the present study, participants suffered from cardiovascular (12.5%), digestive (1.3%), blood (0.6%), skin (0.6%), metabolic (4.1%), and nervous system diseases (Table 1). The present study determined that 57.1% of the participants using prescription drugs and 60.6% of the participants with chronic diseases used CAM practices. In addition, the participants who indicated they were using prescription drugs stated that they used CAM practices such as herbal treatment (27%), home-made drugs (25.4%, $p=0.004$), massage (20.6%), religious healing (19%), music therapy (7.9%), relaxation techniques (7.9%), solidarity groups (7.9%), yoga (6.3%), energy therapy (4.8%), acupuncture (3.2%, $p=0.04$), and aromatherapy (3.2%, $p=0.04$) in the last 6 months and intended to continue using them.

Status of using CAM Practices

A variety of studies examining CAM use among people determined the majority of the research participants used CAM practices [30-32]. The most commonly used CAM practices in America are herbal treatments, relaxation techniques, chiropractic treatment, yoga, massage, special diet, mega vitamins, homeopathy, and tai chi [33]. Astin, et al., also found a high ratio of acupuncture use among study participants. Studies conducted in Turkey reported the most commonly used CAM practices were massage, herbal treatment, praying, religious practices, diet, mega vitamins, acupuncture, respiratory exercises, followed by mineral spring/spa [9,30,34-37]. Tan, et al., also found that 70% of the participants aged 18 years and over ($n: 714$) used CAM practices and 41% frequently used herbal treatment [31]. In the present study, 65% of the participants stated that they used CAM practices. The most preferred CAM practices were art therapy (5.3%), dance therapy (4.4%), energy therapy (2.5%), home-made drugs (14.1%), herbal therapy (20.6%), lifestyle diets (5.9%), massage (1.5%), mental images (3.8%), music therapy (11.9%), religious healing (10.9%), and relaxation techniques (9.7%) (Table 2).

Common religious healing practices include praying for redemption and relief of sickness, participating in preaching groups, drinking holy water, going to holy places, and hanging clot pieces to the tree (believing in superstitions). A study reported that those who have problems such as infertility, epilepsy, psychosomatic problems, depression, etc. ranked spiritual healers, clergymen, and homeopaths as their first preference for alternative treatment [38]. Another study reported that the most prevalent initiatives of women aged 18-40 years complementary to standard medical treatment were religious practices and religious healers [39]. The present study also found that 10.9% of the participants used religious healing CAM practices (Table 2).

Reasons for using and not using CAM Practices

CAM practices are increasingly prevalent in our daily lives. Individuals with discomforts such as chronic diseases and pain affecting the quality of daily life are more likely to seek different treatments. Although the efficacy of CAM practices has not been fully documented and proven scientifically yet, the use of CAM practices in disease treatment or reduction of health complaints has been rapidly increasing throughout the world. However, patients may delay their medical treatment due to CAM use or prefer CAM practices to medical treatment [40]. Many studies report that people use CAM practices because they were not satisfied with the medical treatment, they want to cope actively with their diseases through CAM use by themselves, and they want to avoid being passive and losing of control of their diseases [41-43]. In addition, individual religious and political beliefs and health-related values and beliefs are factors affecting the use of CAM [44,45]. Araz, et al., reported that students use CAM practices mostly because of health problems (84.5%), hair and face care (31.2%), stress (24.1%), weight problems (22.7%), uncomfortable sleep

(19.6%), and fatigue (14.1%). In the same study, 48.8% of students found CAM practices useful, whereas 30.2% did not find it useful [30]. Lafçı and Kaşıkçı also found that healthcare workers used CAM practices for treatment (59.5%), support (47.6%), protection (46.5%), and relaxation (29.8%) purposes [46]. In this study, it was found that stress was ranked in the first group of reasons for using CAM practices in all generations. In addition, influenza and cold were ranked in the first group of reasons for using CAM practices in all generations except those in the baby boomer generation, who ranked influenza and cold in the second group of reasons. The participants in the X and Y generations also ranked allergies in the first group of reasons for using CAM practices. Pain (back and joint pains and headache) and digestive system problems were ranked among the first 3 reasons for using CAM practices in the experienced-silent generation. Moreover, the participants in the X-generation used CAM practices mostly to give up smoking (Table 4).

All generations ranked the inadequate knowledge of alternative medicine practitioners in the first group of reasons for not using CAM practices. In addition, those in the X and Y generations also reported the negative attitudes of their families towards CAM practices in the first group of reasons for not using CAM practices, whereas those in the baby boomer and experienced-silent generations stated the high price in the first group of reasons for not using CAM practices (Table 4).

Participants' Attitudes and Expressions about using CAM Practices

Due to the increase in chronic diseases, patients are also increasingly interested in using CAM practices. Many patients demand information on this issue from their physicians and nurses. Many studies show that nurses and medical students in the Y generation, as well as young people aged 29 years or younger and those with low socio-economic status in the Y generation, generally have higher tendencies towards using CAM practices ($p=0.33$) [35,37,47-49].

According to Araz, et al., the majority of participant students (80.4%) in the Y generation thought that non-medical alternative methods could not be used without medical advice, and 66% of them thought that non-medical alternative methods could not be used for non-treatable diseases [30]. However, the same study also found that the ratio of students who thought that alternative treatment could be used as a last option in medical cases where medical treatment was inadequate was quite high (68.7%) [30]. In addition, 68% of the participant students in the study stated that alternative non-medical methods were not as effective as a medical treatment, 71.1% thought that additional scientific evidence had to be obtained before using non-medical alternative methods, and 71.5% thought that these practices would delay people receiving correct medical treatment. Contrary to the study by Araz, et al., [30], the majority of participants (35.6%) in the present study thought that most of the alternative treatments were as effective as conventional treatments (Table 6). According to the study by Topuz, et al., [36], 45.9% of the participant nursing students thought that CAM practices were an effective treatment method, 34.5% thought that they were ineffective when administered alone without medical treatment, and 48% thought that they were effective when administered together with medical treatment. Similar to the study by Araz, et al., [30], the present study also indicated the majority of the participants in the X and Y generations thought that there was insufficient evidence to support alternative medicine, whereas a majority of the participants in the experienced-silent generation disagreed with this idea ($p<0.05$) (Table 6). Contrary to those participates in the study by Topuz, et al., the majority of the participants (43.4%) in the present study thought they had information about CAM practices [36]. According to the study by Güngörmüş and Kıyak, 42.4% of the respondents stated that they used CAM practices to relieve their pains and aches, 91.6% thought that CAM practices should be scientifically tested before use, 38.1% emphasized that CAM practices should not be used before a doctor visit and advice, and 68.2% noted that CAM practices should be used only for minor disorders [50]. The present study found that participants preferred CAM practices mostly for stress (0.44 ± 1.06), influenza and cold (0.53 ± 1.05), depression (0.39 ± 1.20), and headache (0.36 ± 0.98) ($p<0.05$). It was also determined that the participants with skin disease (1.00 ± 1.41) used CAM practices primarily because of allergies ($F: 0.80, p=0.57$), whereas those with metabolic (1.15 ± 1.51) and nervous system diseases (1.00 ± 1.73) used CAM practices mostly to relieve stress ($F: 1.97, p=0.06$). In addition, those with digestive (1.25 ± 2.50), nervous (1.67 ± 2.88), and metabolic (0.38 ± 1.38) diseases used CAM practices mostly to relieve pain ($F: 1.85, p=0.79$), whereas those with cardiovascular (0.25 ± 0.92), skin (0.50 ± 0.70), and metabolic (0.31 ± 1.10) diseases used CAM practices mostly because of dissatisfaction with conventional medicine ($F: 0.14, p=0.98$).

A study found that 52.7% of the individuals with a hypertension diagnosis used herbal treatment methods to regulate

blood pressure, believed that these methods were beneficial and effective in reducing blood pressure, and had positive results. However, they stated that they did not inform their physician in this regard [20]. The present study determined that the participants with skin disease (1.5 ± 0.70) mostly used art therapy (F: 1.83, $p=0.09$) and dance therapy (F: 2.46, $p=0.02$), whereas those with cardiovascular (1.32 ± 0.47), metabolic (1.15 ± 0.37), and nervous system (1.33 ± 0.57) diseases mostly used home-made drugs (F: 2.58, $p=0.01$). In addition, those with skin diseases (1.50 ± 0.70) were found to use mostly meditation (F: 3.70, $p=0.001$) and mental images (F: 2.19, $p=0.04$), whereas those with both cardiovascular (1.10 ± 0.30), skin (1.50 ± 0.70) and metabolic (1.15 ± 0.37) diseases used solidarity groups (F: 2.60, $p=0.01$). Moreover, those with both skin (2.00 ± 0.00) and cardiovascular (1.08 ± 0.26) diseases used mostly yoga techniques (F: 15.81, $p=0.000$).

Similar to previous studies, the present study determined that most of the nursing students in the Y generation thought positively about using CAM practices, although 81.6% of them preferred medical treatment for their health problems [35,51-55]. According to the presents study results, 35.6% of the participants were uncertain whether CAM use was a good treatment option, 34.4% did not have positive thoughts about using CAM practices (Table 6), 52.5% did not see themselves as a person using CAM practices (Table 5), and 51.2% did not think that they would serve as a good example to other people by using CAM practices (Table 5). In addition to those who did not agree that alternative medicine was dangerous (40.6%), the majority (42.2%) were uncertain about this idea (Table 6).

CONCLUSIONS

The present study determined that the majority of CAM users were female, and women used the CAM practice of religious healing more than men; individuals in the X and Y generations used more CAM practices than those in other generations ($p<0.05$); individuals in the X generation used CAM practices primarily to give up smoking; individuals in the experienced-silent generations ranked pain and insomnia among the first three reasons for using CAM practices; stress was ranked as the first reason for using CAM practices in all generations.

DECLARATIONS

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES

- [1] Clarke, Tainya C., et al. "Trends in the use of complementary health approaches among adults: United States 2002-2012." *National Health Statistics Reports*, 79, 2015.
- [2] Eisenberg, David M., et al. "Trends in alternative medicine use in the United States, 1990-1997: results of a follow-up national survey." *JAMA*, Vol. 280, 1998, pp. 1569-75.
- [3] Wolsko, Peter M., et al. "Insurance coverage, medical conditions and visits to alternative coverage, medical conditions and visits to alternative medicine providers: Results of a national survey." *Archives of Internal Medicine*, Vol. 162, 2002, pp. 281-87.
- [4] Khorshid, L, and Yapucu, Ü. "The Nurse's Role in Complementary Therapies." *The Journal of Atatürk University School of Nursing*, Vol. 8, 2005, pp. 124-30.
- [5] Kaufman, David W., et al. "Recent patterns of medication use in the ambulatory adult population of the United States." *JAMA*, Vol. 287, 2002, pp. 337-44.
- [6] Yeh, Gloria Y., Roger B. Davis, and Russell S. Phillips. "Use of complementary Therapies in Patients with Cardiovascular Disease." *The American Journal of Cardiology*, Vol. 98, 2006, pp. 673-80.
- [7] Barraco, Debra, et al. "Complementary and alternative medicine (CAM) use patterns and disclosure to physicians in acute coronary syndromes patients." *Complementary Therapies in Medicine*, Vol. 13, 2005, pp. 34-40.
- [8] Ari, E, and Yilmaz, V. "The investigation of the attitudes and behaviours regarding the use of complementary and alternative medicine by a suggested structural model." *International Journal of Alanya Faculty of Business*, Vol. 8, 2016, pp. 13-24.

- [9] Çetin, O. "The use of complementary and Alternative Medicine in Eskişehir." *Sosyoekonomi*, Vol. 2, 2007, pp. 89-106.
- [10] ARAZ, Nilgün ÇÖL, Hatice Serap TAŞDEMİR, and Serap PARLAR KILIÇ. "Evaluation of opinions of the faculty of health sciences students about non-medical alternative and traditional therapies." *Gümüşhane University Journal of Health Sciences*, Vol. 1, No. 4, 2012, pp. 239-51.
- [11] Johnson, Susan A., and Mary L. Romanello. "Generational diversity teaching and learning approaches." *Nurse Educator*, Vol. 30, 2005, pp. 212-16.
- [12] Hendricks, Joyce M., and Vicki C. Cope. "Generational diversity: What nurse managers need to know." *Journal of Advanced Nursing*, Vol. 69, 2012, pp. 717-25.
- [13] Olson, Valerie Dong. "Generational Diversity: Implications for Healthcare Leaders." *Journal of Business and Economics Research*, Vol. 6, 2008, pp. 27-32.
- [14] Li Jie. "An Examination of a structural equation model of readiness to use complementary and alternative medicine among Australian University students." 2005.
- [15] Dahl, NV. "Herbs and supplements in dialysis patients: panacea or poison." *Seminar in Dialysis*, Vol. 14, 2001, pp. 186-92.
- [16] Sirois, Fuschia M. "Provider-based complementary and alternative medicine use among three chronic illness groups: Associations with psychosocial factors and concurrent use of conventional health-care services." *Complementary Therapies in Medicine*, Vol. 16, 2008, pp. 73-80.
- [17] Guven, S. D., et al. "Use of Complementary and alternative treatment in the patients with hypertension." *Balikesir Health Sciences Journal*, Vol. 2, 2013, pp. 160-66.
- [18] Krastins, Michael, et al. "Use of alternative therapies by a low income population." *Acupuncture and Electro-Therapeutics Research*, Vol. 3, 1998, pp. 135-42.
- [19] O'Callaghan, Frances Veronica, and Nicole Jordan. "Postmodern values, attitudes and the use of complementary medicine." *Complementary Therapies in Medicine*, Vol. 11, 2003, pp. 28-32.
- [20] Kutlu, Safiye, et al. "Complementary and alternative medicine among patients attending to dermatology outpatient clinic." *Türkiye Klinikleri Journal of Medical Sciences*, Vol. 29, 2009, pp. 1496-502.
- [21] Chen, Yu-Fu, and Jeffrey S. Chang. "Complementary and alternative medicine use among patients attending a hospital dermatology clinic in Taiwan." *International Journal of Dermatology*, Vol. 42, 2003, pp. 616-21.
- [22] Özçelik, Gökhan, and Dilek Toprak. "Why is Phytotherapy Preferred?" *Ankara Medical Journal*, Vol. 15, 2015, pp. 48-58.
- [23] Akyürek, Serap, Ö.N.A.L. Cem, and Cengiz Kurtman "Use of alternative medicine in patients with lung cancer." *The Turkish Journal of Hematology and Oncology*, Vol. 15, 2005, pp. 73-77.
- [24] Özbek, Öznur, et al. "Psychosocial analysis of patients undergoing radiotherapy." *Türkiye Klinikleri Journal of Medical Sciences*, Vol. 23, 2003, pp. 189-94.
- [25] Kurt, E, et al. "Use of alternative medicines by allergic patients in Turkey." *Allergol et Immunopathologia*, Vol. 32, 2004, pp. 289-94.
- [26] Özkan, A. "Complementary and alternative medicine in childhood cancers." *Clinical Development Journal*, Vol. 20, 2007, pp. 179-80.
- [27] Ünal Toprak, F, et al. "Determination of practices and attitudes of nurses, patients and patient relatives about complementary and alternative medicine applications." İstanbul: Nobel Tıp Kitabevleri, 1st International and 4th National Oncology Nursing Consensus Meeting Evidence-Based Palliative Care in Cancer, 2017, p. 126.
- [28] Efe, Dilek, et al. "Supportive methods used by the individuals with hypertension to decrease blood pressure." *Spatula DD*, Vol. 2, 2012, pp. 207-12.
- [29] Sağkal, T, et al. "Complementary and alternative treatment methods among elderly individuals in living rural setting." *Firat University Medical Journal of Health Sciences*, Vol. 27, 2013, pp. 19-26.
- [30] ARAZ, Nilgün ÇÖL, Hatice Serap Taşdemir, and Serap Parlar Kiliç. "Evaluation of opinions of the faculty of

- health sciences students about non-medical alternative and traditional therapies.” *Gümüşhane University Journal of Health Sciences*, Vol. 1, 2012, pp. 239-51.
- [31] Tan, Mehtap, Ozge Uzun, and Fathih Akçay. “Trends in complementary and alternative medicine in Eastern Turkey.” *Journal of Alternative and Complementary Medicine*, Vol. 10, 2004, pp. 861-65.
- [32] 32. Loman DG. “The use of complementary and alternative health care practices among children.” *J Pediatr Health Care*, Vol. 14, 2003, pp. 58-63.
- [33] 33. Tindle HA, et al. “Trends in use of complementary and alternative medicine by US adults: 1997-2002.” *Altern Ther Health Med*, Vol. 11, 2005, pp. 42-49.
- [34] Astin, John A., et al. “A Review of the incorporation of complementary and alternative medicine by Main Stream Physicians.” *Archives of Internal Medicine*, Vol. 158, 1998, pp. 2303-10.
- [35] Uzun, Özge, and Mehtap Tan. “Nursing Students’ opinions and knowledge about complementary and alternative medicine therapies.” *Complement Therapies in Nursing and Midwifery*, Vol. 10, 2004, pp. 239-44.
- [36] Topuz, Senay, Gülzade Uysal, and Arzu Akman Yılmaz. “Knowledge and opinions of nursing students regarding complementary and alternative medicine for cancer patients.” *International Journal of Caring Sciences*, Vol. 8, 2015, pp. 656-64.
- [37] Ergin, A, et al. “Knowledge and attitudes of residents and medical students on complementary-alternative medicine.” *Pamukkale Medical Journal*, Vol. 4, 2011, pp. 136-43.
- [38] Renckens, C.N.M. “Alternative treatments in reproductive medicine: much ado about nothing. The fact that millions of people do not master arithmetic does not prove that two times two is anything else than four.” *Human Reproduction*, Vol. 17, 2002, pp. 528-33.
- [39] Edirne, Tamer, et al. “Use of complementary and alternative medicines by a sample of Turkish women for infertility enhancement: a descriptive study.” *Complementary and Alternative Medicine*, Vol. 10, 2010, pp. 10-17.
- [40] Özçelik, Gökhan, and Dilek Toprak. “Why is Phytotherapy Preferred?” *Ankara Medical Journal*, Vol. 15, 2015, pp. 48-58.
- [41] Kroesen, Kendall, et al. “US military veterans perceptions of the conventional medical-care system and their use of complementary and alternative medicine.” *Family Practice*, Vol. 19, 2002, pp. 57-64.
- [42] Söllner, Wolfgang, et al. “Use of complementary and alternative medicine by cancer-patients is not associated with perceived distress or poor compliance with standard treatment but with active coping behavior-a-survey.” *Cancer*, Vol. 89, 2000, pp. 873-80.
- [43] Astin, John A., et al. “The construct of control in mind-body medicine-implications for health-care.” *Alternative Therapies in Health and Medicine*, Vol. 5, 1999, pp. 42-47.
- [44] Furnham, Adrian, and Julie Forey. “The attitudes, behaviors and beliefs of patients of conventional vs. complementary (alternative) medicine.” *Journal of Clinical Psychology*, Vol. 50, 1994, pp. 458-69.
- [45] Siahpush, Mohammad. “Why do people favour alternative medicine?.” *Australian and New Zealand Journal of Public Health*, Vol. 23, 1999, pp. 266-71.
- [46] Lafçı D, Kara Kaşıkçı M. “The knowledge level and using of complementary and alternative therapies of the health personal who working at hospitals.” *Gümüşhane University Journal of Health Sciences*, Vol. 3, 2014, pp. 1-18.
- [47] Hon, E.K.L., et al. “A survey of attitudes to traditional Chinese medicine in Hong Kong pharmacy students.” *Complementary Therapies in Medicine*, Vol. 12, 2004, pp. 51-56.
- [48] Lie, Désirée A., and John Boker. “Comparative survey of Complementary and Alternative Medicine (CAM) attitudes, use, and information-seeking behaviour among medical students, residents & faculty.” *BMC Medical Education*, Vol. 6, 2006, pp. 58-63.
- [49] Yeo, Angela SH, et al. “Perceptions of complementary and alternative medicine amongst medical students in Singapore-a survey.” *Acupuncture in Medicine*, Vol. 23, 2005, pp. 19-26.
- [50] Güngörmüş Z, and Kıyak, E. “Evaluation of the knowledge, attitude and behaviors of individuals who suffer from pain towards complementary and alternative medicines”. *AGRI*, Vol. 24, No. 3, 2012, pp. 23-129.

- [51] Yildirim, Yasemin, et al. "An analysis of nursing and medical students' attitudes towards and knowledge of complementary and alternative medicine (CAM)." *Journal of Clinical Nursing*, Vol. 19, 2010, pp. 1157-66.
- [52] Hassan, Intan Idiana, et al. "Complementary and alternative medicine (CAM): a comparative study between nursing and medical students." *Education in Medicine Journal*, Vol. 4, 2012.
- [53] Cinar, Nursan, Funda Akduran, and Dilek Kose. "The attitudes of nursing students regarding the complementary and alternative medicine." *Revista Eletrônica de Enfermagem*, Vol. 18, 2016, p. 1174.
- [54] Twinn, Sheila F., et al. "Chinese nursing students' attitudes toward traditional Chinese medicine." *Journal of Nursing Education*, Vol. 45, 2006, pp. 182-85.
- [55] Halcón, Linda L., et al. "Complementary therapies and healing practices: Faculty/student beliefs and attitudes and the implications for nursing education." *Journal of Professional Nursing*, Vol. 19, 2003, pp. 387-97.