



Knowledge, Attitude, and Practice of Complementary and Alternative Medicine among Program's Residents in Tabuk, Saudi Arabia

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Abstract

BACKGROUND: Complementary and alternative medicine (CAM) focuses on stimulating the body's ability to heal itself through energy alignment, herbal supplementation, and other balancing techniques.

AIM: The objective of the study was to investigate and compare the Knowledge Attitude Practice (KAP) of CAM among program's residents in Tabuk region.

METHODS: A cross-sectional CAP study was conducted among program's residents in Tabuk region. All program's residents of all specialties in Tabuk region were included in the study. Data were collected by predesigned electronic questionnaire covering the needed items. Collected data were coded and analyzed using SPSS Inc., Chicago, Illinois, USA. The Chi-square test was used as a test of significance and $p = 0.05$ or less was considered statistically significant.

RESULTS: Most (95.8%) of the participants have heard about CAM, 25% have used CAM in treatment before, and 72.3% of them reported beneficial outcome, 25.7% strongly agree and 48.6% agree that CAM is a useful complement to pharmacological medicine, 38.2% believed that the results of CAM are usually due to the placebo effect, and 52.1% recommended using CAM. On the other hand, 79.9% have knowledge about acupuncture, 54.9% spiritual healing and herbal medicine, 43.1% massage, 41% yoga, 70.8% bloodletting cupping, and 56.3% about cauterization. More than third (38.2%) of the participants agreed that the use of herbal products is a valid form of drugs which can be used for the treatment of variety of diseases, 48.6% agreed that CAM is a useful complement to pharmacological medicine, while 36.1% strongly agreed that CAM treatments are not tested in a scientifically recognized manner.

CONCLUSION: In our study, the majority of program's residents in Tabuk region agree that CAM is a useful complement to pharmacological medicine and recommended using CAM while reasonable percentage of them believed that the results of CAM are usually due to the placebo effect.

Edited by: Sasho Stoleski
Citation: Alqahtani TS, Khalil TA, Alharbi AA, Alnomasi WS, Alnomasi MS, Althwab SM, Jaser AA, Alshahrani RS. Knowledge, Attitude, and Practice of Complementary and Alternative Medicine among Program's Residents in Tabuk, Saudi Arabia. Open Access Maced J Med Sci. 2021 Feb 05; 9(E):150-154. https://doi.org/10.3889/oamjms.2021.5665
Keywords: Alternative; Complementary; Medicine; Program's Residents; Saudi Arabia
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Received: 28-Dec-2020
Revised: 11-Jan-2021
Accepted: 26-Jan-2021
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Funding: This research did not receive any financial support
Competing Interest: The authors have declared that no competing interest exists
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Introduction

Complementary and alternative medicine (CAM) is not a homogenous field. Rather, it is a categorical term that covers a broad range of over 100 healing philosophies, approaches, and therapeutic modalities that allopathic medicine does not commonly study, understand, accept, use, or make available [1].

Alternative practices focus on stimulating the body's ability to heal itself through energy alignment, herbal supplementation, and other balancing techniques [2].

Examples of CAM healing systems include Ayurveda, which emphasizes a unique cure per individual circumstances. It incorporates treatments including yoga, meditation, massage, diet, and herbs. Homeopathy uses minute doses of a substance that

causes symptoms to stimulate the body's self-healing response [3].

While the whole medical systems differ in their philosophical approaches to the prevention and treatment of disease, they share a number of common elements. These systems are based on the belief that one's body has the power to heal itself [4].

Natural and biologically based practices, interventions, and products refer to the use of dietary supplements and include herbal, special dietary, orthomolecular, and individual biological therapies [5].

Most people use CAM to treat and/or prevent musculoskeletal conditions or other conditions associated with chronic or recurring pain and about half the general population in developed countries uses CAM [6].

A survey released in May 2004 by the National Center for CAM, found that in 2002, 36% of Americans used some form of alternative therapy in the past 12 months, 50% in a lifetime a category that included yoga, meditation, herbal treatments, and the Atkins diet [4].

A study done in Uremia, Iran on medical students has revealed that alternative medicine has been used at least once by 31% of them. Iranian traditional medicine is the main type used representing 93.5%. Neuromuscular disorders were the main indication of alternative medicine use. Study results showed also that 49% of medical students had positive attitudes and demonstrated a willingness to receive training on the subject [7].

Another study was designed to assess CAM knowledge, attitudes, and beliefs among Palestinian medical students. The highest knowledge scores were found in students with low income, and students who came from the Palestinian refugee camps, students frequently recommended CAM modalities, with herbal medicine being the most recognized and used CAM modality. Social media was the most popular source of information about CAM. Participants generally had a good attitude toward CAM but held varying beliefs about it [8].

The problem in Saudi Arabia that, in spite of the importance of the CAM as shown above, up to our knowledge, no studies have been conducted to evaluate medical students or the program residents' knowledge and attitude toward CAM, especially in Tabuk, North Saudi Arabia. Hence, this study was conducted to compare the knowledge, attitude, and practice (CAP) of CAM among program's residents in Tabuk region.

Study objective

The objective of the study was to investigate and compare the CAP of CAM among program's residents in Tabuk region.

Methods

Study design and population

A cross-sectional CAP study was conducted among program's residents in Tabuk region during the period from January 1, 2020, to July 31, 2020. We measure the knowledge and attitude in the first 2 months of the study and it takes 4 months to measure the practice.

Sampling

All program's residents of all specialties in Tabuk region were included in the study, the number

of residents was 220 for confidence interval (CI) 95% and $p \leq 0.05$ the sample size will be 140 residents, they were chosen from their departments using the simple random sampling technique.

Data were collected using redesigned electronic questionnaire covering sociodemographic data, residency program informations, knowledge believes and practice regarding CAM.

Ethical considerations

The study was approved by the research ethical committee of the King Salman Armed Forces Hospital (KSAFH), Tabuk, North Saudi Arabia, with ethical approval number (KSAFH-REC-2020-316). Participants were informed that participation is completely voluntary, and written consent was obtained from each participant before being subjected to the questionnaire and after discussing the objective with the participants. No names were recorded on the questionnaires. Ensured protection of confidentiality and all questionnaires was kept safe.

Statistical analysis

Collected data were coded and analyzed using Statistical Package for the Social Sciences (SPSS Inc., Chicago, Illinois, USA). Descriptive statistics for the qualitative and quantitative variables were used. The Chi-square test was used as a test of significance and $p = 0.05$ or less was considered statistically significant. The differences were considered significant at $p = 0.05$ or less.

Results

Table 1 shows the sociodemographic characteristics of the participants. About 52.8% were male. About 56.3% were 26 years old or younger. Most (70.1%) of the participants worked at KSAFH, more than third (35.4%) were family medicine residents, and 31.3% were R1.

Table 2 illustrates the attitude and practices of the participants about alternative medicine. Most of the respondents (95.8%) have heard about alternative medicine, and 70% think that they are knowledgeable about it. Reading was the main source of information about CAM (43.1%). About 25% of participants have used alternative medicine in treatment before, and 72.3% of them reported beneficial outcome. About 78.5% of our study participants believe that alternative medicine is important, 25.7% strongly agree that alternative medicine is a useful complement to pharmacological medicine, while only 17.4% believe that alternative medicine is safe and 7.6% think that it can replace pharmacological medicine. More than

Table 1: Sociodemographic characteristics of the participants, 2020 (n = 144)

Variables	Frequency (n = 144)	Percent
Sex		
Male	76	52.8
Female	68	47.2
Age groups		
26 years or younger	81	56.3
27 years or older	63	43.8
Occupational place		
KSAFH	101	70.1
King Khalid Military Hospital	27	18.8
Primary Health Care Centers	10	6.9
King Khalid University Hospital	6	4.2
Specialty		
Family medicine	51	35.4
General surgery	23	16.0
Internal medicine	18	12.5
Gynecology	14	9.7
Orthopedics	7	4.9
Pediatrics	16	11.1
Others	15	10.4
Academic level		
R1	45	31.3
R2	33	22.9
R3	41	28.5
R4 or 5	25	17.4

KSAFH: King Salman Armed Forces Hospital.

half of the participants (52.1%) recommended using alternative medicine. About 79.9% have knowledge about acupuncture, 54.9% for spiritual healing and herbal medicine, 43.1% massage, 41% yoga, 70.8% bloodletting cupping, and 56.3% for cauterization.

Table 3 shows knowledge of facts about CAM in the participants. About 38.2% of the participants agreed that the use of herbal products is valid form of drugs which can be used for the treatment of variety of diseases, 25.7% strongly agree and 48.6% agree that CAM is a useful complement to pharmacological medicine, 9.7% strongly agree and 28.5% agree that the results of alternative medicine are usually due to the placebo effect, while 36.1% strongly agreed that CAM treatments are not tested in a scientifically recognized manner.

Table 4 illustrates the relation between recommending use of CAM with gender, academic level, specialty, and previous experience with alternative medicine. The table shows a significant relation to gender, specialty, and previous experience with CAM, but shows insignificant relation to academic level.

Discussion

CAM refers to a wide variety of treatments beyond mainstream Western medicine, has received significant attention over the past 10 years [1]. Office physicians opinions about and behaviors regarding CAM have been examined in several surveys revealed that physicians show considerable interest in CAM. Lack of communication between doctor and patient regarding CAM can be a problem which results in declined chances to discuss benefits of CAM and differences between pharmaceuticals and CAM therapies [3]. This study was conducted to compare the CAP of CAM among program's residents in Tabuk region, Saudi Arabia.

Table 2: Attitude and practice of the participants about alternative medicine, KSA, 2020 (n = 144)

Variables	Frequency (n = 144)	Percent
Hearing of alternative medicine		
Yes	138	95.8
No	6	4.2
Knowledge about alternative medicine		
Knowledgeable	11	7.6
Some knowledge	102	70.8
Not knowledgeable	31	21.5
Source of information about alternative medicine		
Family and friends	41	28.5
Reading	62	43.1
University	5	3.5
Others	36	25.0
Believing alternative medicine is important		
Yes	113	78.5
No	31	21.5
Believing alternative medicine is safe		
Yes	25	17.4
Not sure	87	60.4
No	32	22.2
Believing that alternative medicine can replace pharmacological medicine		
Yes	11	7.6
No	133	92.4
Following alternative medicine content on social media		
Yes	23	16.0
No	121	84.0
Previous experience with alternative medicine		
Yes	71	49.3
No	73	50.7
If the answer is yes, what were the outcomes? (n = 71)		
Beneficial	51	71.8
Not beneficial	16	22.5
Harmful	4	5.7
Knowing complications of alternative medicine		
Yes	65	45.1
No	79	54.9
Believing alternative medicine has better outcomes than pharmacological medicine		
Yes	17	11.8
In some cases	73	50.7
No	54	37.5
Type of illness alternative medicine fits to		
Physical illness	43	29.9
Psychological illness	22	15.3
Both	22	15.3
Not sure	57	39.6
Having used alternative medicine in treatment before		
Yes	36	25.0
No	108	75.0
If the answer is yes, what were the outcomes? (n = 36)		
Beneficial	26	72.3
Not beneficial	7	19.4
Harmful	3	8.3
Alternative medicine common in your city or neighborhood		
Yes, a lot	53	36.8
A little	79	54.9
No	12	8.3
Recommend using alternative medicine		
Yes	75	52.1
No	69	47.9
Interest in knowing more about alternative medicine		
Yes	114	79.2
No	30	20.8
Types of alternative medicine you know about		
Acupuncture	115	79.9
Spiritual healing	79	54.9
Herbal medicine	79	54.9
Chiropractic	23	16
Massage	62	43.1
Yoga	59	41
Bloodletting cupping	102	70.8
Naturopathy	51	35.4
Cauterization	81	56.3
Music therapy	31	21.5
Meditation	27	18.8
Homeopathy	16	11.1
Maggots therapy	13	9
Hypnosis	13	9

KSA: Kingdom of Saudi Arabia.

According to our results, 25% of participants have used alternative medicine in treatment before (72.3% of them reported beneficial outcome). The prevalence of CAM use in a previous study was 92.4% for nurses, 64.9% for doctors, 83.3% for pharmacists, and 77.1% for other health-care providers (HCPs) [4]. In a previous study in Trinidad, 40.6% of physicians admitted to having used herbs [5]. Prevalence in

Table 3: Knowledge of the participants toward alternative medicine, KSA, 2020 (n = 144)

Item	Strongly agree (%)	Agree (%)	No opinion (%)	Disagree (%)	Strongly disagreed (%)
The use of herbal products is valid form of drugs which can be used for the treatment of variety of diseases	6.9	38.2	36.8	14.6	3.5
Patients mostly benefit from physicians with knowledge of alternative medicine	20.8	43.8	27.8	6.3	1.4
Alternative medicine is a useful complement to pharmacological medicine	25.7	48.6	19.4	6.3	—
The results of alternative medicine are usually due to the placebo effect	9.7	28.5	45.1	14.6	2.1
Alternative medicine treatments are not tested in a scientifically recognized manner	36.1	45.1	17.4	1.4	—
In general, alternative medicine is a threat to public health	4.2	15.3	38.9	31.3	10.4

KSA: Kingdom of Saudi Arabia.

developed countries is also quite high: 36% and 12% among nurses and doctors, respectively, in Norway [6], and 40% [7] and 76% [8] in two US studies.

Table 4: Relation between recommending using alternative medicine with gender, academic level, specialty, and previous experience with alternative medicine

Item	Recommend using alternative medicine		Total (n = 144) (%)	p-value
	Yes (n = 75) (%)	No (n = 69) (%)		
Gender				
Male	32	44	76	0.009
	42.1	57.9	100.0	
Female	43	25	68	
	63.2	36.8	100.0	
Academic level				
R1	20	25	45	0.157
	44.4	55.6	100.0	
R2	17	16	33	
	51.5	48.5	100.0	
R3	20	21	41	
	48.8	51.2	100.0	
R4 or R5	18	7	25	
	72.0	28.0	100.0	
Specialty				
Family medicine	32	19	51	0.036
	62.7	37.3	100.0	
General surgery	9	14	23	
	39.1	60.9	100.0	
Internal medicine	13	5	18	
	72.2	27.8	100.0	
Gynecology	8	6	14	
	57.1	42.9	100.0	
Orthopedics	1	6	7	
	14.3	85.7	100.0	
Pediatrics	7	9	16	
	43.8	56.3	100.0	
Others	5	10	15	
	33.3	66.7	100.0	
Previous experience with alternative medicine				
Yes	47	24	71	0.001
	66.2	33.8	100.0	
No	28	45	73	
	38.4	61.6	100.0	

About 78.5% of our study participants believe that alternative medicine is important, 25.7% strongly agree that alternative medicine is a useful complement to pharmacological medicine, but only 17.4% believe that alternative medicine is safe and 7.6% think that it can replace pharmacological medicine. This was on the line with findings of other previous study reported that 44.2% of doctors felt that it should be placed in a drug formulary. Most HCPs (doctors (61%), nurses (42.4%), pharmacists (53.3%), and other HCPs (67.1%)) believe that conventional medicine and evidence-based CAM should be integrated [4]. In another Saudi study, 15% of the participants believed that the use of CAM should be restricted to patients who have failed conventional therapy, and 85% considered CAM to be inferior to conventional medicine and thus is not beneficial to patients and 61.5% relied on family and friends as their main source [9]. However, El-Olemy and AlBedah reported that 29.08% of their sample used family and friends as a source of information about CAM [10].

Regarding knowledge about alternative medicine, 79.9% have knowledge about acupuncture,

54.9% for spiritual healing and herbal medicine, 16% chiropractic, 43.1% massage, 41% yoga, 70.8% bloodletting cupping, and 18.8% meditation. More than half of the ocular motor disorders (OMDs) reported knowing the principles of chiropractic, taping therapy, and aromatherapy. In a previous study, more than half of the OMDs reported knowing the principles of chiropractic, taping therapy, and aromatherapy [11]. The majority (50–75%) reported fair knowledge of herbal, spiritual, alternative, and physical types of CAM, but had no knowledge of energy therapy and therapeutic methods [4]. Another previous study reported aromatherapy (15.5%), biofeedback (9.4%), naturopathy (8.5%), reflexology (6.9%), Ayurvedic medicine (6.1%), energy medicine (5.8%), and iridology (2.3%) [12]. Wahner-Roedler *et al.* reported that biofeedback was that one most physicians (47%; 95% CI 40–53%) were familiar with, followed by massage (41%; 95% CI 34–47%), and chiropractic and relaxation therapy (38% each; 95% CI 32–45%). Energy healing was the least familiar CAM treatment to the surveyed physician group. Of the herbs listed, St. John's Wort saw that palmetto and garlic were most familiar to the physicians and those they felt most comfortable counseling patients about [13]. This agreed with the findings of Wahner-Roedler *et al.* reporting that biofeedback was that one most physicians (47%) were familiar with and felt comfortable counseling their patients about, followed by massage (41%), and chiropractic and relaxation therapy (38%). Energy healing was the least familiar CAM treatment to the surveyed physician group [13].

In our study, 43.1% heard about alternative medicine from reading. Another study about medical students' knowledge about CAM found that the best known CAM was herbal medicine (63.6%), with relatives and friends being their main source of information [14]. In a previous study, authors reported that relatives and friends at home first made respondents aware of herbal medicine (38.1%) and traditional African healing (34.5%), school was the first source of information on herbal medicine (17.5%), traditional African healing (26.7%), and hypnosis (19.4%), and books and journals were the sources of awareness for the following CAMs for some students; yoga (15.4%), meditation (20.8%), and hypnosis (19.4%) [12]. The Saudi study (Sarah *et al.*) found that almost 50% of the participants in our study reported that they obtained knowledge about CAM from websites, books, and evidence-based medicine articles [9].

Up to our findings, 49.3% had previous experience with alternative medicine and 52.1% of

participants recommend using alternative medicine. This agreed with the results of other study; the overall prevalence of CAM use among HCPs was high (82.3%): Nurses (92.4%), pharmacists (83.3%), other HCPs (82.3%), and doctors (64.9%) and the majority of doctors (50.6%) and nurses (52.6%) remain neutral or non-committal about CAM [4]. Clement *et al.* found that 40.6% of physicians have used herbs but only 27.1% recommended them to their patients [5]. This is in contrast to other studies that found that physicians who used CAM previously are more likely to recommend CAM to their patients [15], [16].

Conclusion and Recommendations

In our study, the majority of program's residents in Tabuk region agree that CAM is a useful complement to pharmacological medicine and recommended using CAM while reasonable percentage of them believed that the results of CAM are usually due to the placebo effect. We recommend decision-makers to conduct educational sessions and lectures to increase the program's residents' awareness about the benefits and drawbacks of CAM. Furthermore, more detailed large-scale national research is needed to evaluate CAP of Saudi physicians about CAM.

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