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Knowledge, Attitudes, and Practices Regarding Complementary and Alternative Medicine among Patients Attending a Family Medicine Clinic in Saudi Arabia: A Cross-Sectional Study

Authors
Alaa Ali Alarbash[1], Dr Sarah Abdul Rahman Morait[2], Dr Enas Assad Demyati[3]
[1]Department of Family Medicine Institution(s): King Fahad Medical City, Riyadh, Saudi Arabia
Email: *a.alarbash.md@gmail.com*, Mobile: 0504670880
[2]Resident, Department of Family Medicine, King saud Medical City, P.O. Box 59046, Riyadh, 11525 Kingdom of Saudi Arabia
Phone numbers: 966-504670880, Email: *dr.sas816@hotmail.com*
[3]Consultant, Department of Family Medicine, King Fahad Medical City, P.O. Box 59046, Riyadh, 11525 Kingdom of Saudi Arabia
Phone numbers: 966-504670880, Email: *idemyati@kfmc.med.sa*

Abstract

Background*: Traditional medicine and herbs are widely used in the Saudi Arabia population.*

Objectives: *Assess the knowledge, attitudes, and practices regarding complementary and alternative medicine (CAM) in a Saudi population.*

Design: *Cross-sectional study*

Setting: *Adults attending an outpatient clinic at King Fahad Medical City, Riyadh, Saudi Arabia.*

Patients and Methods: *A survey questionnaire was used to assess the knowledge, attitudes, and practices concerning CAM.*

Statistical Analysis: *Pearson's chi-square test and t-test.*

Results: *Of 250 respondents, 162 (64.8%) were female. The mean age of the participants was 36.16 ± 11.85 years. Of the respondents, 166 (66.4%) claimed to have knowledge about CAM; 123 stated this knowledge was primarily obtained through social media. A total of 148 respondents (59.2%) practiced CAM, and the most common practices included incantation (36.0%), herbal medicine (33.6%), cupping (33.6%), and honey (27.6%). Most respondents (87.2%), especially older individuals, agreed/strongly agreed that a need for CAM exists, and 217 (86.8%) also agreed/strongly agreed that rules and regulations should be implemented for CAM. A total of 152 respondents (60.8%) believed that CAM is effective, and 74.4% believed that CAM is safe. Women were significantly more likely to use supplements, whereas men were significantly more likely to use camel products.*

Conclusion: *Most of our study population had knowledge about CAM and practiced CAM, particularly older individuals, and more than half of the respondents discussed CAM with health professionals. Old age (>40 years), low education levels, and female sex were linked to a high frequency of CAM usage.*

Introduction

The World Health Organization defines complementary and alternative medicine (CAM) as healthcare practices based on cultural beliefs and experiences that are not part of that country's own tradition or conventional medicine and are not fully incorporated into the current healthcare system.[1]Recently, there has been growing interest in the effectiveness of CAM, which is supported by several clinical studies and publications worldwide for multiple chronic medical conditions and even mental and fertility issues.[2-4]

CAM is practiced in several developed countries such as China and the United Statesas well as in Middle Eastern and African countries such as Saudi Arabia and Lebanon.[5-10] In the United States, the National Center for Complementary and Integrative Health has reported that four in 10 American adults use CAM.[11] In Saudi Arabia, approximately 69.9% of the population with cancer use CAM.[5]CAM use was also reported to be 29.9% in Lebanese adults,[12] 26.1% among hypertensive patients in Congo,[9] 47.9% among cancer patients in Mongolia,[13]and 43.4% among cardiovascular patients in Singapore.[14]

Several studies have demonstrated the efficacy and safety of CAM for certain medical problems. Studies have described the use of CAM for fertility issues.[4]In Taiwan, *Bupleurum* and *Peony formula* are commonly used by patients for dysfunctional uterine bleeding.[15] Medicinal herbs and spiritual therapy (faith healing/prayers) are the most common type of CAM used by patients with HIV and cancer.[16,17] Other types of CAM used particularly by healthy people include homeopathy, meditation, and massage.[18] Even healthcare professionals (doctors and nurses) were also found to use and have used CAM.[19]However, some studies have reported drug-induced liver injury associated with the use of CAM among Asians.[20]

In Saudi Arabia, CAM-reported usage rates are as high as 69.9%.[5] Among diabetic patients in Saudi Arabia, the prevalence of use of CAM was 31.2%.[21] A previous study has reported the use of myrrh, black seeds, fenugreek, and aloe in Saudis (275, 20.3%, 15.2%, and 10.8%, respectively).[22] Reports have also shown spiritual healing (Quran recitation), use of herbs (including honey and dietary products), cupping (Hijama), use of Zamzam water, use of camel urine, and acupuncture as the commonly used CAM practices in Saudi Arabia.[5,23,24] The use of CAM is more prevalent in Saudi women than in men.[25]The use of CAM is widely practiced in Saudi Arabia; however, the awareness and knowledge of CAM among Saudis remain low.[22,23]

Therefore, the present study was conducted to investigate the knowledge, attitudes, and practices regarding CAM in a Saudi population and assess its use among patients visiting a family medicine clinic in a tertiary referral government hospital in Riyadh, Saudi Arabia.

Patients and Methods

Between November 2017 and January 2018, a cross-sectional study was conducted using a survey questionnaire among all adults visiting the family medicine clinic at King Fahad Medical City in Riyadh, Saudi Arabia. Patients with prior CAM use were asked to voluntarily participate in the survey. The sample size was calculated using a margin of error of 5% and 80% power for the expected patient population of 700; the estimated sample size was calculated to be 248.

We used a validated questionnaire comprising of questions about patients' knowledge, attitudes, and practices concerning CAM as well as a section in which respondents were asked provide suggestions and comments on CAM. Data were collected, encoded, and analyzed using the Statistical Package for Social Sciences version 22.0 (SPSS Inc., IBM Inc., Armonk, NY, USA). Data are presented as numbers and percentages (for categorical variables) or as means and standard deviations (for continuous variables). Pearson's chi-square test was used to compare the distribution of categorical variables, and a *t*-test was used to compare the distribution of

continuous variables. P<0.05 was considered statistically significant.

Institutional Review Board (IRB) approval was obtained from the IRB Committee of King Fahad Medical City, Riyadh, Saudi Arabia, before commencing the study. Before participants answered the questionnaire, informed consent was obtained from them. Participants' identities were kept anonymous, and all study-related documents were stored in a secured place.

Results

There were 250 respondents, including 88 (35.2%) males and 162 (64.8%) females. The mean age was 36.16 ± 11.85 years (range: 18–80 years). Meanwhile, 86 (34.4%), 77 (30.8%), and 87 (34.8%) respondents earned less than 5,000 SAR, between 5,000 and 10,000 SAR, and more than 10,000 SAR per month, respectively. The respondents' education levels were below-secondary level for 30 respondents (12.0%), secondary level for 76 respondents (30.4%), and college degree or higher for 144 respondents (57.6%) (Table 1).

Moreover, 166 respondents (66.4%) claimed to have knowledge about CAM (Table 2). Most reported learning about CAM from social media [123 participants (49.2%)], followed by family, friends, and community members for 76 respondents (30.4%) and educational institutes for 37 respondents (14.8%). Only 18 respondents (7.2%) claimed to have attended a symposium, seminar, or workshop on CAM. Of these, 12 respondents (4.8%) attended meetings about AM and treatment, and the remaining attended meetings about herbal medicine, cupping, honey, and Ruqaya. In total, 154 respondents (61.6%) said that they practiced CAM. The most commonly used CAM among our respondents was incantation (n = 93, 19.2%), followed by herbs (n = 84, 17.4%), cupping (n = 82, 16.9%), and honey (n = 69, 14.3%).

Most respondents (n = 218, 87.2%) agreed/strongly agreed that a need for CAM exists, and 217 (86.8%) also agreed/strongly agreed that rules and regulations should be implemented for CAM practice. Meanwhile, 220 respondents (88.0%) agreed/strongly agreed that specialized CAM clinics should be established under the healthcare service. A total of 152 respondents (60.8%) stated that CAM is effective, and 186 respondents (74.4%) believed that CAM is safe. Overall, 212 respondents (84.8%) cited a need for more care centers, especially for CAM, whereas 228 respondents (91.2%) believed that there is a need for health education programs regarding the practice of CAM. However, only eight respondents (3.2%) extensively discussed CAM with their doctors, whereas 141 (56.4%) had never discussed CAM with their doctors. Ninety respondents (36.0%) extensively discussed CAM with their relatives/friends instead of their doctors (Table 3).

There were no significant correlations between age and knowledge, use, and practice of CAM ($r = -0.131$, $p = 0.038$). However, older respondents (age > 40 years) were more likely to express a need for CAM than their younger counterparts ($p = 0.044$, Table 4a). Additionally, sex was not significantly correlated with knowledge, use, and practice of CAM ($r = -0.129$, $p = 0.041$). However, women were significantly more likely to use supplements ($p = 0.049$), whereas men were significantly more likely to use camel products ($p = 0.041$, Table 4b). The respondents' educational levels were significantly correlated with knowledge of CAM ($r = -0.137$, $p = 0.030$). Those with secondary education or lower were less likely to have knowledge about CAM than college graduates ($p = 0.037$). However, respondents with lower levels of education were more likely to express a need to practice CAM ($p = 0.020$)

Furthermore, significant correlations were noted between educational levels and the use of some CAM practices, including incantation ($r = 0.143$, $p = 0.024$), natural therapy ($r = -0.125$, $p = 0.049$), and Korean medicine ($r = -0.132$, $p = 0.037$). Respondents with lower educational levels expressed greater interest in practicing CAM and

cited a need for additional rules and regulations concerning CAM (p = 0.020 and p = 0.002, respectively). There were no other significant differences in the responses to questions according to the educational level (Table 4c).

Table 1 Demographic data of the 250 survey respondents

Demographic variables	Mean (SD)	n (%)
Age, years	36.16 (11.85)	
Sex		
Male		88 (35.2)
Female		162 (64.8)
Educational level		
Below-secondary level		30 (12.0)
Secondary level		76 (30.4)
College and above		144 (57.6)
Monthly income		
Less than 500 SAR		86 (34.4)
5000–10,000 SAR		77 (30.8)
More than 10,000 SAR		87 (34.8)

SD: standard deviation

Table 2 Knowledge about and use of complementary and alternative medicine (CAM) among survey respondents

Knowledge and use variables	n	%
Have knowledge about CAM	166	66.4
Source of knowledge (multiple answers are possible)		
Social media	123	49.2
Family, friends, and community members	76	30.4
Educational institutions	37	14.8
Have attended or listened to any CAM symposium	18	7.2
CAM types discussed at symposia		
Alternative medicine	12	4.8
Cupping	2	0.8
Herbal	2	0.8
Honey black bean	1	0.4
Ruqaya legitimacy	1	0.4
Have practiced any type of CAM	148	59.2
Type of CAM practiced		
Reflection therapy	1	0.2
Medical massage	42	8.7
Acupuncture	15	3.1
Relaxation	12	2.5
Herbs	84	17.4
Cupping (Hijama)	82	16.9
Supplements	19	3.9
Aromatherapy	11	2.3
Cauterization	28	5.8
Spiritual therapy	3	0.6
Incantation	93	19.2
Energetic therapy (reiki)	1	0.2
Honey	69	14.3
Indian medicine (Ayurveda)	1	0.2
Natural therapy	3	0.6
Camel products	14	2.9
Chiropraxy	5	1.0
Korean medicine	1	0.2

Table 3 Responses to questions concerning complementary and alternative medicine (CAM) practices

Questions	Responses	n (%)
Do you think that we need to practice CAM?	Strongly agree	65 (26.0)
	Agree	153 (61.2)
	Disagree	28 (11.2)
	Strongly Disagree	4 (1.6)
Do we need roles and regulation for CAM practice?	Strongly agree	100 (40.0)
	Agree	117 (46.8)
	Disagree	26 (10.4)
	Strongly Disagree	7 (2.8)
Do we need to have a specialized clinic for practicing CAM under the health care service?	Strongly agree	110 (44.0)
	Agree	110 (44.0)
	Disagree	27 (10.8)
	Strongly Disagree	3 (1.2)
Do you think that CAM is not expensive?	Strongly agree	50 (20.0)
	Agree	102 (40.8)
	Disagree	85 (34.0)
	Strongly Disagree	13 (5.2)
Do you think that CAM is effective?	Strongly agree	68 (27.2)
	Agree	150 (60.0)
	Disagree	26 (10.4)
	Strongly Disagree	6 (2.4)
Do you think that the CAM is safe?	Strongly agree	41 (16.4)
	Agree	145 (58.0)
	Disagree	55 (22.0)
	Strongly Disagree	9 (3.6)
Do we need to develop a specialized center for CAM practice?	Strongly agree	105 (42.0)
	Agree	107 (42.8)
	Disagree	32 (12.8)
	Strongly Disagree	6 (2.4)
Do we need health education for practicing CAM?	Strongly agree	143 (57.2)
	Agree	85 (34.0)
	Disagree	20 (8.0)
	Strongly Disagree	2 (0.8)
Have you ever discussed with your doctor about CAM practice?	A lot	8 (3.2)
	Sometimes	101 (40.4)
	Never	141 (56.4)
Have you received advice from your friend/relative to practice CAM?	A lot	90 (36.0)
	Sometimes	115 (46.0)
	Never	45 (18.0)

Table 4a Responses to the question on "the need to practice CAM" across age groups

Responses	Age groups			Total
	≤30 years	31–40 years	≥41 years	
Strongly agree	19 20.0%	22 24.7%	24 36.4%	65 26.0%
Agree	60 63.2%	58 65.2%	35 53.0%	153 61.2%
Disagree	16 16.8%	6 6.7%	6 9.1%	28 11.2%
Strongly disagree	0 0.0%	3 3.4%	1 1.5%	4 1.6%
Total	95	89	66	250

Table 4b Use of different methods of CAM between males and females

CAM methods and practices	Males n (%)	Females n (%)	p value
Medical massage	15 (17.0)	26 (16.0)	0.385
Acupuncture	4 (4.5)	12 (7.4)	0.377
Relaxation	5 (5.7)	9 (5.6)	0.967
Herbs	28 (31.8)	56 (34.6)	0.660
Cupping	30 (34.1)	54 (33.3)	0.904
Supplements	3 (3.4)	17 (10.5)	0.049*
Aromatherapy	3 (3.4)	8 (4.9)	0.573
Cauterization	9 (10.2)	18 (11.1)	0.830
Incantation	30 (34.1)	60 (37.0)	0.643
Honey	27 (30.7)	42 (25.9)	0.422
Natural therapy	2 (2.3)	1 (0.6)	0.251
Camel products	8 (9.1)	5 (3.1)	0.041*
Chiropraxy	3 (3.4)	2 (1.2)	0.241

*significant

Table 4c Responses to question on knowledge about CAM across different educational levels

Do you know about CAM?	EDUCATION LEVEL			Total
	Below-secondary education	Secondary education	College	
Yes	18 60.0%	43 56.6%	105 72.9%	166 66.4%
No	12 40.0%	33 43.4%	39 27.1%	84 33.6%
Total	30	76	144	250

Discussion

This study highlighted the prevailing high percentage use of CAM among our Saudi respondents (61.6%), which is significantly higher than the rates reported by previous studies[9,11-14] and lower than that reported by Abuelgasim et al.[5] However, in contrast to the previous studies, our study was conducted among the general population visiting the primary care clinics irrespective of whether they have chronic medical conditions (including cancer). Our reported rate would have been different if we had delved further into the existing medical conditions of our patients.

Six of ten of our respondents reported having awareness and knowledge about CAM, but less than that use and know the more detailed aspects of CAM, including its benefits and adverse effects. This discrepancy in awareness and use of CAM is comparable with that reported previously.[11-14,26] Another possible explanation for these divergent findings is that CAM is less frequently used among populations with a high educational level.[26] In our study, the finding that participants with a low educational level were more likely to use CAM reflected that people with a high educational level prefer to visit hospitals to receive modern medical treatments. Most people, irrespective of their educational status and income, practice CAM mainly because they have been exposed to such practices, which have proven helpful. Furthermore, the higher frequencies of the use of CAM in our country than in other countries are traditionally and culturally based because Saudi Arabia has a known century-old rich tradition and culture of herbal medicines and strong faith and belief in spiritual healing.[26,27]

This study also showed that females use CAM significantly more than males, similar to previous reports.[24,26] The cultural influence and differences in health beliefs between males and females may likely explain this gender difference. Saudi females are more likely to use CAM than males because of cultural barriers, indicating a need to integrate CAM into primary care services, where

most patients in Saudi Arabia are females and their children.

The use of herbs, in particular, remains to be the most widely used type of CAM, particularly among elderly patients. Our study showed that 17.4% of patients use herbal medicines to relieve various symptoms, similar to previous studies.[2,4-6,8,14,20,22,25,26] This is brought about by the patients' belief that herbal medicine is more efficacious than modern medicine, brought about by the experience and accessibility to buy herbs from local markets and stalls. Another possible explanation is that patients usually do not seek immediate consultation from a doctor owing to long-waiting hours, the burden of buying more expensive modern drugs, and previous disappointments on the use of conventional medicine as well as the sense of well-being and perceived effectiveness and safety of the use of CAM (as shown in this study).

Our results were consistent with those of a previous study reporting that social media effectively delivers information and increases knowledge about CAM to a significant part of the population.[25] The hazards associated with misleading and inaccurate information obtained through social media remain to be explored, given that the information provided through social media sites is readily believed and easily shared.[26,27]

The practice of incantation using rites and readings from the Holy Quran in Saudi Arabia has been used as therapy, including cupping (Hijama), use of honey and other herbs, and black cumin healing for difficult-to-treat cases.[28] However, in contrast to the study by Musaiger and Abahussain,[28] our respondents reported higher use of medical herbs than of prayer, honey healing, and incantation. Furthermore, most (>90%) respondents of their study agreed that there is a need for practicing and regulating CAM as well as for health education on CAM and specialized centers and clinics, far exceeding the findings in our study.

The need to practice CAM among patients with low educational levels has also been observed. This study found the significant influence of educational level on the use of CAM. This implies the need for health education and information dissemination campaigns concerning the health benefits and disadvantages of using CAM that should be conducted to increase the knowledge and awareness of CAM in society. Furthermore, there is a need for primary care centers and clinics to integrate CAM into traditional Western medicine.

In conclusion, approximately two-thirds of our study sample had knowledge about CAM and practiced CAM. However, less than half of our respondents discussed CAM with health professionals. Older individuals (aged >40 years), those with low education levels, and females tended to use CAM more frequently than their counterparts.

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