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Complementary and alternative medicine practice and perceptions of attendees of primary care centers in Eastern Saudi Arabia

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Abstract:

BACKGROUND: Complementary and alternative medicine (CAM) refers to the use of nonconventional medical practices together with standard medical care. Specific forms of CAM included in this study are the use of honey, dry and wet Hijama, Quran, Zamzam water, *Nigella sativa* (black seed), and others. The objective was to determine the prevalence of the use of different CAM modalities by the attendees of primary health-care centers (PHCCs) and assess the reasons behind their use.

MATERIALS AND METHODS: A cross-sectional study was conducted at PHCCs in the cities of Dammam and Al Khobar, over a period of 12 months. The study population was patients and their accompanying relatives attending the PHCCs, aged 18 years and above. Data were collected using a self-administered questionnaire in Arabic designed by the investigators after a review of the literature on the use of CAM. Questionnaire was modified after pilot testing among 200 medical students, and was validated by two expert consultants of the family and community medicine department at the university. The questionnaire was administered and supervised by the 3rd and 4th year medical students. Data were entered and analyzed using the SPSS version 16 (SPSS Inc., Chicago, IL, USA) statistical software. Descriptive statistics were computed, and odds ratios were calculated for associations between CAM use and various independent factors. Logistic regression analysis was used to determine the factors which predict the use of CAM by attendees. All the analyses were performed at $\alpha = 0.05$.

RESULTS: The total number of attendees interviewed was 2114; 52.5% of whom reported using CAM. The types of CAM varied in their popularity of use, the majority of users favoring honey and Quran, 24.6% and 20.5%, respectively. Recommendations by relatives and friends were reported as the most common reason in this sample for using CAM (56.1%). Age, awareness of CAM, perceptions that use of CAM is better, use of CAM helps, herbs had no side effects, CAM was easy to obtain, and the attendee currently suffers from a disease were significantly associated with higher CAM use.

CONCLUSION: More than 50% of the participants reported using CAM; honey and Quran were the most widely used modalities. For people to make informed decisions on the use of complementary medicine, physicians should impress on their patients to inform their doctors of their use of complementary medicine modalities so that encouragement could be given where appropriate.

Keywords:

Attendees, complementary medicine, practice, primary care, Saudi Arabia

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Introduction

Complementary and alternative medicine (CAM) is defined by the National Center for Complementary and Integrative Health as a group of diverse medical and health-care interventions, practices, products, or disciplines that are not generally considered part of conventional medicine but can be used alongside it.^[1,2] The use of CAM which has increased in all countries in the past few years has been examined in a systematic review of 16 different papers.^[3] In 2007, nearly 40% of adults in the United States used some forms of CAM.^[4] A study on Arab women of 18 different nationalities in midlife living in Qatar showed that nearly 35% of them had used CAM in the past year.

Not many CAM studies are available in Saudi Arabia. However, a study of 158 participants from different districts of Riyadh revealed that 85% of the people interviewed had used or knew a family member who had used CAM at some point in their lives.^[5] Furthermore, a study done in the Western region reported that 42% of randomly selected 79 mothers attending the outpatient department in King Abdulaziz University Hospital had used CAM for chronic conditions in their children.^[6]

Materials and Methods

The study was approved by the department of family and community medicine of the university. The necessary permission was sought from Directorate of Public Health, Eastern Province, as well as from the Directors of the primary health-care centers (PHCCs) to interview attendees at their PHCCs. Ethical approval was obtained from the Institutional Review Board at Imam AbdulRahman Bin Faisal University. The purpose of the research was explained to the attendees, permission for the interview was sought, and informed written consent was obtained from all participants of the study. Confidentiality was assured as there were no names on the questionnaire. All data were to be used for research purposes only.

This was a cross-sectional study conducted at PHCCs in Dammam and Al Khobar cities, Eastern Saudi Arabia, and results assessed over a period of 12 months. The study population was attendees of PHCCs, both patients and their relatives.

Included in the study population were 13 government PHCCs randomly selected from a total of 31 PHCCs using a simple random sampling, targeting 16 PHCC (about 50% of PHCC in the area of study). However, a delayed response from three PHCs meant that a second visit by the data collectors was not feasible due to time constraints.

All attendees of the selected PHCCs were invited to complete a self-administered questionnaire after giving their consent. A few non-Arabic speakers as well as those with little education were assisted in completing the questionnaire. The total number of participants was 2214 with convenience sampling from each sample according to the visits. The numbers from the PHCCs varied depending on the cooperation of the attendees. Inclusion criteria were attendees of PHC centers and their relatives, both Saudis and non-Saudis, 18 years of age and above. Excluded were non-Saudis who spoke no Arabic or English.

Data were collected using a questionnaire in Arabic designed by the investigators after reviewing the literature on CAM use. The questionnaire was translated into English and back into Arabic to ensure the correctness. The questionnaire was validated by a pilot study on 200 medical students who completed the questionnaires and gave their feedback. Some questions were modified, but that data were not included in the result. The questionnaire was also reviewed by two expert consultants of the family and community medicine department of the university.

Reliability (Cronbach's alpha) was ensured and tested. The questionnaire was administered and supervised by the 3rd and 4th year medical students.

The questionnaire had questions on: A – sociodemographic characteristics such as age, sex, education, occupation, and income; B – current health status and diseases; and C – the use of different types of CAM, reasons for use of CAM, attitude, and satisfaction with CAM use.

Data were checked for accuracy and completeness

Data were entered and coded using the SPSS version 16 (SPSS Inc., Chicago, IL, USA) statistical software. Descriptive data were analyzed and associations were determined by the bivariate and multivariate analyses. Logistic regression analysis was used to determine factors which predicted attendees' use of CAM. The dependent variable was the use of CAM coded as: yes = 1 and no = 2. The following independent variables were entered into the model: age, gender, nationality, marital status, educational level, income per month, awareness of CAM, the use of CAM by relatives and friends, advice from relatives and friends to use CAM, high cost of CAM, use of CAM is better, use of CAM helps, herbs have no side effects, CAM cures disease, CAM is easily obtained, and attendee currently suffers from a disease.

Results

As shown in Table 1, in the period of 12 months, the

Table 1: Sociodemographic characteristics of the study population (n=2214)

Sociodemographic characteristics	N (%)
Age group (years)	
18-30	982 (44.4)
31-45	817 (36.9)
46-60	320 (14.5)
>60	95 (4.3)
Gender	
Male	1687 (76.2)
Female	527 (23.8)
Nationality	
Saudi	1958 (88.4)
Non-Saudi	256 (11.6)
Marital status	
Single	644 (29.1)
Married	1501 (67.8)
Divorced/widow/widower	69 (3.2)
Educational level	
Illiterate/read and write	51 (2.3)
Primary/intermediate	258 (11.7)
Secondary/diploma	1037 (46.8)
University/higher education	868 (39.2)
Occupation	
Physician/nurse	136 (6.1)
Lawyer/engineer/businessman	230 (10.5)
Soldier/police	262 (11.9)
Teacher/university teacher	253 (11.5)
Technician	61 (2.8)
Housewife	178 (8.1)
Retired/unemployed	435 (19.8)
Others	645 (29.3)
Monthly income (SR)	
<5000	796 (36.7)
5000-9999	666 (30.1)
>10,000	707 (31.9)

number of males out of 2214 attendees participating in this research was higher than the females, 76.2% versus 23.8%. The mean age of attendees was 34.61 ± 12.61 (1 standard deviation) years, ranging from 18 to 91 years. The highest number of participants was aged between 18 and 30 years (44.4%). Approximately 88% were Saudis. The majority were married (1501; 67.8%). Most of the attendees had a secondary school diploma (1037; 46.8%), and the family monthly income was evenly distributed. Some had an income of < 5000 SR (36.7%) and others an income of more than 10,000 SR (31.9%).

A total of 1163 (52.5%) attendees, as shown in Table 2, had used CAM in the past 12 months. Twenty-five different kinds of complementary medicine were used by primary health-care attendees in this study. Some of them were honey, herbal medicine, Hijama (the Arabic name for cupping therapy), Quran recitation, *Nigella sativa* seeds, Ajwa al Madinah (famous dates in Madinah, Saudi Arabia, used for therapeutic

Table 2: Types of complementary and alternative medicine used by attendees of PHCCs. (n=2214)

Types	N (%)
Honey	544 (24.5)
Quran	454 (20.5)
Zamzam Water	403 (18.2)
<i>Nigella sativa</i> (Al Haba Alsoda/black seed)	350 (15.8)
Alruqiyah	289 (13)
Dry Hijama (fire cupping on intact skin)	238 (10.7)
Diet	216 (9.8)
Herbal mix	211 (9.7)
Oils/perfume	210 (9.5)
Wet Hijama (bloody cupping on cut skin)	209 (9.4)
Food supplements	195 (8.8)
Ajwa al Madinah	143 (6.5)
Chinese massage	119 (5.4)
Bees queens diet	90 (4.1)
Honey wax	83 (3.8)
Cautery	80 (3.6)
Chinese herbal medicine	60 (2.7)
Camel milk or urine	57 (2.6)
Chinese acupuncture	49 (2.2)
Others	45 (2.0)
Bees poison	31 (1.4)
Seeds	24 (1.1)
Energy	12 (0.5)

purposes), Zamzam water (famous water from the Zamzam well near Makkah, Saudi Arabia, known to have therapeutic benefits), Alruqiyah (a collection of Quranic verses and supplications recommended to be read by the Prophet Muhammad during illness), herbal medicine, and dietary constituents and food supplements, as shown in Table 3. The most widely used was honey (544; 24.6%) followed by Quran (454; 20.5%), Zamzam water (403; 18.2%), and herbal medicine (401; 18.1%).

Recommendations by relatives and friends were the most common reasons given by the PHCCs attendees (1239; 56.1%) for using CAM, as shown in Table 4. Those who used CAM as a form of relief for pain or a cure were 500 (22.6%), which was similar to the number of attendees who used it because there were no side effects (497; 22.5%). A total of 491 (22.2%) attendees reported that they had used CAM because it was easily available.

Table 4 shows the logistic regression model of the factors predicting the use of CAM by PHCC attendees. The following factors were statistically significantly associated with the use of CAM: age, awareness of CAM, use of CAM is better, use of CAM helps, herbs had no side effects, CAM was easy to obtain, and the attendee currently suffers from a disease. As they got older attendees 1.014 were more likely to use CAM than attendees who were younger (odds ratios [OR] = 1.014; 95% confidence interval [CI] 1.005–

1.023; $P = 0.002$). Attendees who had heard of CAM were 73% more likely to use CAM than attendees who had not heard of CAM (OR = 1.731; 95% CI 1.350–2.218; $P < 0.001$). Similarly, attendees who reported that the use of CAM was better, CAM was helpful, that herbs had no side effects, and CAM was easy to obtain, were statistically significantly more likely to use CAM than those who, as shown in the logistic model, had no such ideas.

Discussion

In this study, results over a period of 12 months showed that 52.5% of the attendees at PHCCs in Dammam and Khobar, Eastern Saudi Arabia, used CAM, which means that almost half of the sample was exposed to one or more different types of CAM. This result was similar to another study conducted at King Khalid University Hospital, Riyadh.^[7] Some reported only occasional use while the others regularly used CAM. Patient’s baseline health and associated comorbidities influenced the results. A national survey conducted in the USA on CAM use by patients with diabetes reported that out of 95 participants who had diabetes mellitus, 57% reported using CAM.^[8] A systematic review of five types of CAM use by the general population of several countries reported a range of use between 9.8% and 76%.^[9] This was expected because of the broad spectrum of the samples’ demographic, religious, and socioeconomic data.

The most widely used CAM modality reported in this

study was honey followed by Quran and the third most commonly used one was Zamzam water. These results are similar to a multistage cluster cross-sectional household survey conducted among Saudi residents of the Riyadh region,^[10] in which the highest reported form of CAM used was Quran followed by honey and the black seed (50.1%, 40.1%, and 31.2%, respectively).

The reason these modalities are so popular in the Saudi community is that the practices are deeply rooted in the religion of Islam giving the patients spiritual as well as physical comfort. These were recommended by the Prophet Mohammed, peace be upon him, that is why people trust these methods of healing.

Other spiritual modalities noted as widely used common modalities of CAM were prayer and Ruqyah recitation. Ruqyah refers to a collection of Quranic verses and supplications recited by Prophet Mohammed, peace be upon him, in times of physical distress. In a cross-sectional study conducted on pharmacy students in Sierra Leone, a high percentage of the participants (59%) used prayer as a modality for CAM.^[11]

Another very commonly used modality unrelated to the spiritual found in literature was herbal treatment, which is the essence of complementary medicine. In the study done in Sierra Leone, its value was 70%, which was quite significant. However, in this study, herbal treatment was not significant.

According to a systematic review conducted across Europe, North America, Australia, East Asia, Saudi Arabia, and Israel, the lowest reported forms of CAM used were homeopathic treatments – 1.5%,^[9] and cautery – 4% used by participants in a study from King Khalid Hospital, Riyadh.^[7] However, in this study, the least commonly used type of CAM was energy.

The main incentive reported in this study, for the use of complementary medicine as a form of healing was recommendation by family and friends. This is generally perceived as a common means in the Saudi society by

Table 3: Reasons for using complementary and alternative medicine by attendees of PHCCs. (n=2214) (modern medicine...removed)

Reasons for using CAM	N (%)
1. Recommended by relatives/friends	1239 (56.1)
2. High cost of others	359 (16.2)
3. CAM is better	462 (20.9)
4. Use of CAM helps	500 (22.6)
5. Herbs have no side effects	497 (22.5)
6. CAM cures disease	374 (16.9)
7. CAM is easily obtained	491 (22.2)
Others	158 (7.1)

CAM=Complementary and alternative medicine

Table 4: Logistic regression analysis showing factors associated with the use of complementary and alternative medicine

Variables	β coefficient	SE of β	P-Value	OR	95% CI of OR	
					Lower	Upper
Age	0.014	0.004	0.002	1.014	1.005	1.023
Hear of CAM	0.549	0.127	<0.001	1.731	1.350	2.218
Use of CAM is better	0.400	0.118	0.001	1.491	1.184	1.878
Use of CAM helps	0.483	0.114	<0.001	1.620	1.295	2.027
Herbs have no side effects	0.290	0.113	0.010	1.336	1.071	1.668
CAM is easily obtained	0.293	0.111	0.008	1.341	1.079	1.666
Attendee is suffering from disease now	0.490	0.095	<0.001	1.633	1.355	1.967
Constant	-1.726	0.193	-	-	-	-

OR=Odds ratio, CI=Confidence interval, SE=Standard error, CAM=Complementary and alternative medicine

which people are influenced to try new things. The second most common reason was that CAM actually proved to be beneficial in many cases. Similarly, in two other studies done in Sierra Leone and the USA, the reason for using CAM was that patients found it effective and safe compared to conventional treatments, which are associated with troublesome side effects.^[8,11]

Another interesting and uncommon reason reported was that complementary medicine providers spent more time with their patients than doctors of conventional medicine. This is an important factor since the better the doctor–patient relationship, the more compliant patients are toward different integrative treatment approaches that the physician takes.

Many factors have been investigated in the research of CAM. This study demonstrated the association between CAM use and different sociodemographic data, but other studies investigated the effect of associated comorbidities on the use of CAM. The parameters were statistically significant for some demographic data such as age, as older adults were more likely to use CAM than younger adults.

Conclusion

The use of CAM was common among participants of this study, 52.5% of whom had used CAM in the past 12 months. The popularity of the use of the various types of CAM differs for many religious and cultural reasons, with the majority of participants using honey and Quran. Recommendations by relatives and friends were reported as the most common reason for using CAM in this sample. Attendees who reported that they had heard that CAM was better, that it CAM helped, that herbs had no side effects, CAM was easily available, as well as those who were suffering from some kind of illness were more likely to use CAM than other attendees.

It is recommended that health-care providers should educate the population about the rational and appropriate use of CAM through mass media channels. Regulations and clear guidelines governing the use of CAM and its benefits should be given by health authorities. This is important because this study has shown that people use CAM on the recommendation of their family or friends, so it is necessary to educate people about its benefits and risks.

Physicians should impress on their patients to inform them of the different complementary medicine modalities they are using so that they could give encouragement when appropriate. They should also be required to ask all patients if they are using any of the methods of

complementary medicine to treat their condition since this could impact on their treatment.

This study has shown that the use of CAM is quite prevalent, so further studies should be done to assess the effectiveness of different known modalities and their impact on the overall management of various conditions.

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Conflicts of interest

There are no conflicts of interest.

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