



Original Article

Use of Herbal Medicine Among the Public in Abu Dhabi

Lina Al Kury^{1*}, Haleema Al Shehhi¹, and Rafiq Hijazi²

¹Department of Health Sciences, College of Natural and Health Sciences, Zayed University, Abu Dhabi 144534, UAE

²Department of Mathematics and Statistics, College of Natural and Health Sciences, Zayed University, Abu Dhabi 144534, UAE

ORCID

Lina Al Kury: <https://orcid.org/0000-0002-8338-7655>

Corresponding Author: Lina Al Kury; email: Lina.ALKury@zu.ac.ae

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Abstract

Background: Herbal remedies have been used in traditional medicine for thousands of years to treat various human ailments.

Aim: Given the rising increase in the use of herbal products among the United Arab Emirates (UAE) population, this study aims to explore the level of knowledge, attitude, and beliefs about the use of herbal medicine among the public in Abu Dhabi.

Methods: A total of 410 male and female participants aged between 20 and 60+ years completed a 20-item face-to-face questionnaire that was composed of three sections. The first section of the questionnaire included demographic data (age, gender, nationality, marital status, and level of education), health status, and familiarity with herbal medicine. The second section included practices of using herbal medicine among participants. The last section included respondents' beliefs and attitudes about herbal medicine based on its use.

Results: The results of this study showed that almost half of the respondents were married and aged between 20 and 29 years. Only one-fifth of the participants were very familiar with the herbal medicine while more than one-third reported no familiarity. The results also showed that about 35% of the participants use herbal medicine. The only demographic features linked with the usage of herbal medications were age and marital state, where married respondents reported higher use of herbal medicine than unmarried. In addition, older respondents (40+ years) reported higher use compared to younger generations. Moreover, the patient's high cholesterol level was the sole connected health-related attribute. Interestingly, most users indicated that herbal medicine was recommended to them by family or friends, followed by herbalists and medical doctors. According to nonusers, the biggest deterrent to utilizing herbal remedies was being healthy and having no need for using herbal medicine, while lack of available information about herbal medicine was the second reason. The highest belief of respondents about the use of herbal medicine was their role in maintaining and promoting health.

Conclusion: Although the results of this study showed that herbal medicine is moderately used in UAE, particularly by those who have hypercholesterolemia, it is important to emphasize the benefits and drawbacks of utilizing herbal remedies. Effective herbal medicine policies and health education programs must be developed. Patient counseling and education about medication use are needed to augment their awareness about their use.

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Keywords: herbal medicine, demographic features, hypercholesterolemia

1. Introduction

Since ancient times, herbal treatments have been used as traditional medicine to treat a wide range of human illnesses, including cancer, inflammation, immunological disorders, and cardiovascular problems. Many of these plants are edible and may be used to make food. The World Health Organization (WHO) estimates that over 4000 million individuals in underdeveloped nations frequently utilize plant treatments and consider them to be effective [1]. Even though these nations may have access to modern treatment, herbal remedies frequently continue to be popular for historical and cultural reasons [2].

Factors such as consumer preference for natural therapies that avoid the side effects of synthetic drugs, the notion that herbal medicines might be more effective in treating certain diseases than conventional therapies, and the high cost of modern drugs, have been cited as contributing to the recent rise in public interest in herbal remedies, both in developing and developed countries [3]. Due to the perception that they encourage a better lifestyle, complementary and alternative medicine is becoming more common in the UK and other European nations. Nevertheless, 52.2% of Australians utilized natural health items, with herbal medications being one of the most popular treatments [4]. The use increased from 38.2 million in 2002 to 40.6 million in 2012 in the USA only [5].

Herbal therapy has long been a popular method of treatment for a variety of illnesses in the Mediterranean area. In terms of cultural history, culinary enjoyment, and the connection between food and health, herbal medicine plays a significant role [6]. A study conducted by El Khoury et al. have shown that 53% of Lebanese population use herbal items or dietary supplements [7]. The use of herbal medicine was also noted to be widespread in Jordan [8]. Almost 58% of the consumers used herbal medication for the treatment of their chronic diseases. Consumers often expressed strong beliefs in the efficacy and safety of herbal treatment compared to conventional medicine. In a recent study conducted by El-Dahiyat et al. the prevalence of using herbal medicine was high (80.2%), especially among hypertensive patients. Moreover, the use of herbal medicine was not associated with any demographic factors other than age [3].

Numerous researches have indicated that herbal medicine is widely used in the Gulf area. For instance, more than 70% of people in Saudi Arabia utilize herbal medication [9]. Herbs were one of the most often used complementary and alternative medicine among Saudis (8–76%), according to data from national surveys carried out in Saudi Arabia and published between 2000 and 2015 [10]. About 64% of diabetic patients in a cross-sectional survey have previously utilized herbs including myrrh, black seeds, fenugreek, and aloe for managing their condition. Additionally, 75% of the patients utilized herbs in addition to the prescribed medications, while roughly 55% preferred utilizing herbs

over the prescribed drugs [11]. The most often utilized natural health items in Kuwait are herbal treatments (41.3%). Natural herbal products were most frequently used to strengthen the immune system, promote and maintain health, and avoid sickness [12].

Traditional and complementary medicine are extensively used and accepted in the UAE. Additionally, a sizable portion of the cuisine in the UAE is made up of herbal plants. It has previously been noted that UAE inhabitants frequently employ herbal medicines for both acute and chronic diseases [13]. The fact that these treatments are widely and easily accessible through condiment shops or from retail stores is one of the primary factors that may have led to the widespread usage of folk and herbal medicine [1]. An earlier study by AlBraik *et al.* has shown that the trust and believe for herbal remedies in UAE citizens is what makes them utilize these items more often. According to the poll, 60% of participants are more confident in herbal remedies than in conventional ones. A total of 48 distinct ailments were being treated with a 65 different plants. Additionally, 85% of respondents think that using herbal remedies has no negative side effects, and 80% think that using herbal remedies is safer than using allopathic drugs [14]. Furthermore, 42% of respondents favor using herbal medicines in addition to conventional treatments. Folk foods and herbs were found to be the most often utilized complementary and alternative medicine categories in the UAE, according to a recent study on patients with Type 2 Diabetes Mellitus [13].

Given the mounting increase in the use of herbal products worldwide in general, and among the UAE population, the knowledge level and attitude of people toward using them should be evaluated. Therefore, the aim of this study is to explore the level of knowledge, attitude, and beliefs about the use of herbal medicine among the public in Abu Dhabi, UAE.

2. Methods

A quantitative, cross-sectional study was conducted on a sample of 410 participants who can communicate in Arabic or English. A 20-item face-to-face questionnaire was modified from previously published questionnaires and distributed to the public in Abu Dhabi [8, 12]. The inclusion group was the public (male and female) who aged between 20 and 60⁺ years old. The questionnaire was written in two versions (English and Arabic) and reviewed by a bilingual expert. Data collection took place between August 2019 and October 2019. The first section of the questionnaire included demographic data (age, gender, nationality, marital status, and level of education), health status and familiarity with herbal medicine. The second section included 9 questions related to the practices of using herbal medicine. The last section included 6 questions related to the

respondent's beliefs and attitudes about herbal medicine based on its use. Participants were informed that all the information provided was completely confidential and the results would only be presented anonymously. After agreeing to the consent form, the questionnaire was filled by the participants.

2.1. Data analysis

Data management and analysis were done using the IBM SPSS Statistics (version 27). Descriptive statistics including the frequencies and percentages were used to summarize the categorical data. The Chi-square test or Fisher's Exact test was used to test the differences in use and knowledge of herbal medicine between male and female participants. The multivariate logistic regression analysis was used to assess factors related to herbal use adjusted for the rest of factors.

2.2. Ethical considerations

The study protocol was approved by the Research Ethics Committee at Zayed University in Abu Dhabi (ZU19_039_F). Informed consent was obtained from subjects who agreed to participate in the study after explaining the purpose of the study, confidentiality, and anonymity.

3. Results

3.1. Sample characteristics

The characteristics of study participants are presented in Table 1. The study included 410 participants, 41.7% were males and 58.3% were females. The participants were predominantly college graduates (73.6%) and Emirati (65.3%). Almost half of the respondents were married (47.4%) and aged between 20 and 29 years (47.3%). Approximately, three-quarters of participants (73.2%) had no health conditions, while 12.9% were diabetic, 4.6% had hypertension, and 5.1% had high cholesterol level. Surprisingly, nearly one-fifth (19.1%) of the participants were very familiar with the herbal medicine while more than one-third (34.5%) reported no familiarity.

TABLE 1: Characteristics of participants, health status and familiarity with herbal medicine ($n = 410$).

	Sample	Using herbal medicine	P-value
	Freq (%)	Freq (%)	
Total	410 (100)	144 (35.1)	
Gender			
Male	171 (41.7)	63 (36.8)	0.537
Female	239 (58.3)	81 (33.9)	
Age (yr)			
20–29	194 (47.3)	59 (30.4)	0.055
30–39	99 (24.1)	32 (32.3)	
40–59	96 (23.4)	43 (44.8)	
60+	21 (5.1)	10 (47.6)	
Nationality			
UAE	267 (65.3)	93 (34.8)	0.827
Not UAE	142 (34.7)	51 (35.9)	
Marital status			
Married	194 (47.4)	90 (46.4)	<0.001
Not married	215 (52.6)	54 (25.1)	
College degree			
No college	107 (26.4)	34 (31.8)	0.385
College	299 (73.6)	109 (36.5)	
Having health diseases			
No health conditions	300 (73.2)	96 (32.0)	0.007
Diabetes	53 (12.9)	20 (37.7)	
Hypertension	19 (4.6)	8 (42.1)	
High cholesterol	21 (5.1)	15 (71.4)	
Other	17 (4.1)	5 (29.4)	
Familiarity with herbal medicine			
Not at all familiar	141 (34.5)	25 (17.7)	<0.001
Somewhat familiar	190 (46.5)	76 (40.0)	
Very familiar	78 (19.1)	43 (55.1)	

3.2. Herbal medicine use

As presented in Table 1, approximately 35% of study participants indicated their current use of herbal medicine. Married respondents reported higher use of herbal medicine than unmarried ($P < 0.001$). Older respondents (40+ years) reported slightly higher use compared to younger generations ($P = 0.055$). Education and gender were not significantly associated with the herbal medicine use ($P > 0.05$). As expected, respondents with health problems, particularly those with high cholesterol, reported a higher

TABLE 2: Predictors of herbal medicine use by logistic regression analysis.

	OR	P-value	95% CI for OR	
Age (yr)				
30–39	0.82	0.535	0.43	1.55
40–59	1.01	0.974	0.53	1.94
60+	1.53	0.458	0.50	4.65
Emirati	1.59	0.099	0.92	2.77
Female	0.86	0.569	0.51	1.45
Married	2.52	0.001	1.47	4.32
College degree	1.14	0.624	0.67	1.97
Health conditions				
No health conditions	1.12	0.846	0.36	3.44
Diabetes	1.61	0.460	0.46	5.69
Hypertension	1.39	0.667	0.31	6.19
High cholesterol	6.79	0.014	1.48	31.09
Familiarity with herbal medicine				
Somewhat familiar	3.68	<0.001	2.09	6.51
Very familiar	6.01	<0.001	3.06	11.81

usage of herbal medicine ($P = 0.007$). Obviously, herbal medicine use increased with respondent's familiarity with these products ($P < 0.001$).

3.3. Predictors of herbal medicine usage

The multivariate logistic regression analysis is used to identify the predictors of herbal medicine usage while adjusting for other factors. The model included all variables listed in Table 1. The findings are presented in Table 2 along with odds ratio (OR) and corresponding 95% confidence intervals (CI).

The likelihood of herbal medicine usage was significantly higher among married respondents (OR: 2.52; 95% CI: 1.47-4.32) and respondents with high cholesterol (OR: 6.79; 95% CI: 1.48-31.09). Moreover, the odds of using herbal medicine were associated significantly with the increasing familiarity with herbal medicine (For somewhat familiar, OR: 3.68; 95% CI: 2.09-6.51 and for very familiar, OR: 6.01; 95% CI: 3.06-11.81).

3.4. Practices and use of herbal medicine

As shown in Table 3, many users indicated that herbal medicine was recommended to them by family or friends (75%) followed by herbalists and medical doctors (11.8% and

TABLE 3: Practices of using of herbal medicine among participants (*n* = 144).

	Total
Who recommended use of the herbal medicine?	
Family/Friend	108 (75)
Herbalist	17 (11.8)
Medical Doctor	9 (6.3)
Pharmacist	6 (4.2)
Other	4 (2.8)
Use of a natural health product	
Daily	77 (53.5)
Weekly	31 (21.5)
Monthly	16 (11.1)
Seasonally	20 (13.9)
The use of herbal medicine in the treatment of chronic diseases is effective	
Always	58 (40.3)
Usually	43 (29.9)
Often	35 (24.3)
Seldom	8 (5.6)
Using herbal medicine for treatment rather than conventional drugs	
Always	38 (26.2)
Usually	37 (25.5)
Often	55 (37.9)
Seldom	15 (10.3)
Side effects related to the use of herbal medicine	
Always	0 (0)
Usually	4 (2.8)
Often	11 (7.6)
Seldom	129 (89.6)

6.3, respectively). More than half of the users (53.5%) reported the use of herbs daily while around 14% use it during certain seasons.

Based on their experience, more than 40% of users indicated that the herbal medicine is always effective in the treatment of chronic diseases, while less than 6% reported that it is rarely effective. Moreover, more than one-quarter of users always use herbal medicine for treatment while a close portion reported that they usually do that. Many users (89.6%) have not experienced any side effects from using herbal medicine while less than 3% said that they usually experience side effects.

Table 4 represents the reasons for not using herbal medicines from nonusers' perspective. Around 44% of nonusers indicated that they are healthy and have no need for using herbal medicine, while lack of available information about herbal medicine

TABLE 4: Reason for not using herbal medicine ($n = 266$).

Reason	Freq (%)
I do not believe in the efficiency of the herbal medicine	47 (17.7)
I am healthy and no need for its use	116 (43.6)
I don't know enough information available about herbal medicine	80 (30.1)
Other reasons	23 (8.6)

represents the second common reason. Approximately 18% of nonusers indicated that they do not believe in the efficacy of herbal medicine.

3.5. Beliefs and attitudes about herbal medicine

The beliefs and attitudes of respondents about the use of herbal medicine classified by herbal use are shown in Table 5. Overall, the majority of respondents agreed with the six statements. The highest agreement was on the role of herbal medicine in maintaining and promoting health (80%) followed by the statement on the safety of herbal medicine due to their natural ingredients (74.8%). On the other hand, the lowest agreement was on the precedence of herbal medicines over conventional medicines (59.7%).

Additionally, herbal users have expressed significantly more agreement than nonusers in the first five statements ($P < 0.05$). The most significant difference between users and nonusers appears in the statement on the safety of herbal medicine due to their natural ingredients (90.9% and 66.2%, respectively), followed by the statement on the role of herbal medicine in maintaining and promoting health (94.4% and 72.2%, respectively). No significant difference was observed between users (58.7%) and nonusers (60.5%) regarding the necessity of consulting a medical doctor or pharmacist before using herbal medicine ($P = 0.471$).

4. Discussion

In this study, the level of knowledge and usage pattern of herbal medicine among the public in Abu Dhabi, United Arab Emirates were investigated. The participants were predominantly college graduates and Emirati. The results showed that only 19% of the participants were very familiar with the use of herbal medicine. In addition, approximately 35% of study participants indicated their current use of herbal medicine. The only demographic features linked with the usage of herbal medication were age and marital status, where married respondents reported higher use of herbal medicine than unmarried. This finding is consistent with a previous study which showed that those married were 3.9 times more likely to use herbs than the unmarried women

TABLE 5: Respondent's beliefs and attitudes about herbal medicine based on herbal medicine use.

	Using herbal medicine			Total
	Yes	No	P-value	
Herbal medicine can be used to help maintain and promote health				
Agree	135 (94.4)	192 (72.2)	<0.001	327 (80)
Disagree	1 (0.7)	12 (4.5)		13 (3.2)
Neutral	7 (4.9)	62 (23.3)		69 (16.9)
Herbal medicine can be used to treat illness				
Agree	122 (85.3)	178 (66.9)	<0.001	300 (73.3)
Disagree	1 (0.7)	14 (5.3)		15 (3.7)
Neutral	20 (14)	74 (27.8)		94 (23)
Herbal medicines are safe because they are made from natural ingredients				
Agree	130 (90.9)	176 (66.2)	<0.001	306 (74.8)
Disagree	2 (1.4)	20 (7.5)		22 (5.4)
Neutral	11 (7.7)	70 (26.3)		81 (19.8)
If a herbal medicine is for sale to the public, I am confident that it is safe				
Agree	100 (69.9)	147 (55.3)	0.008	247 (60.4)
Disagree	8 (5.6)	34 (12.8)		42 (10.3)
Neutral	35 (24.5)	85 (32)		120 (29.3)
Herbal medicines are better for me than conventional medicines				
Agree	101 (70.6)	143 (53.8)	<0.001	244 (59.7)
Disagree	4 (2.8)	37 (13.9)		41 (10)
Neutral	38 (26.6)	86 (32.3)		124 (30.3)
It is important to talk to a medical doctor or pharmacist before using herbal medicine				
Agree	84 (58.7)	161 (60.5)	0.471	245 (59.9)
Disagree	28 (19.6)	40 (15)		68 (16.6)
Neutral	31 (21.7)	65 (24.4)		96 (23.5)

[15]. Older respondents reported slightly higher use compared to younger generations. Many studies have shown that the utilization of herbal treatments is influenced by age. For example, Rashrash *et al.* has shown that older age was associated with a higher use of herbal medicine [5]. According to Arcury *et al.*, the use of herbal remedies diminishes among those aged 85 and beyond but stays quite high among those aged between 65 and 69 [16]. The similar tendency for overall herbal medicine use among older people was documented by Arcury and colleagues [17]. To better understand how older people start using or discontinue utilizing herbal medicine, further studies are required. Gender was not substantially linked with herbal medicine usage when distribution of use was examined across sociodemographic factors of respondents. In contrast to previous research, it was found that women were more likely to use dietary supplements and/or herbal remedies than men. This may be attributed to female characteristics such as pregnancy and to boost their general health [18, 19].

As expected, respondents with health problems, particularly those with high cholesterol, reported a higher usage of herbal medicine. Obviously, herbal medicine use increased with respondent's familiarity with these products. Based on their experience, more than 40% of respondents indicated that the herbal medicine is always effective in the treatment of chronic diseases. The relationship between health condition and the usage of herbal remedies has been shown in other studies. Azzawi *et al.* found that most respondents believed in herbal medicine and used it mostly for the treatment and prevention of various ailments such as hypercholesterolemia, cardiovascular diseases, urinary tract infection, and diabetes. Participants were encouraged to use herbal medication, since it was associated with a lower incidence of side effects and helped them stay healthy [20]. Similarly, Issa *et al.* showed that among the chronically ill customers, more than 50% were using herbal medicine to treat their chronic health conditions with no significant differences between the two genders. The highest use was to treat hypertension followed by diabetes and dyslipidemia, respectively [8].

In our study, majority of respondents reported no experience of side effects from using herbal medicine. A study conducted by Kamel *et al.* found that one-half of diabetic patients thought that herbs may take the place of diabetes medications [11]. According to the research done in Palestine, a large percentage of patients said that taking herbs had helped them by reducing the side effects of conventional medicine [21, 22]. Therefore, it was not unexpected that most of the users were satisfied with the herbal effect on disease outcomes.

The fact that these treatments are widely and easily accessible through condiment shops or from retail stores is one of the primary factors that may have led to the widespread usage of herbal medicine [1]. An earlier study by AlBraik *et al.* have shown that UAE citizens trust and believe in herbal remedies is what makes them utilize these items very often [14]. The results of our study showed that about 60% of the participants agreed on the precedence of herbal medicines over conventional medicines. It is important to mention that patients' strong conviction on the safety of using herbs and the absence of adverse effects is a concerning result. In fact, combining herbal and conventional medications may have negative interactions and adverse effects. Alarming evidence of potential herb-drug interactions was found in many studies [1, 23]. Despite this, participants in this study and earlier ones of a similar nature [13, 19] have shown a high usage of herbal therapy in conjunction with conventional treatment, a situation that calls for the need of increased awareness.

Most participants indicated that herbal medicine was recommended to them by family or friends, followed by herbalists and medical doctors. Similar findings were observed by Dahiyat *et al.* who found that most consumers said that their herbal medication

was recommended to them by family or friends, followed by herbalists and physicians [3]. Other research consistently revealed a pattern where people seeking help do not ask for medical advice, but rather rely on friends and relatives for guidance in the first place [24, 25]. A study conducted on 809 adults to explore the participants' knowledge, attitude, and practice regarding the use of traditional medicines in Saudi society found that almost half of the participants were taking information from friends. In addition, majority stated that they do not trust the published information in commercial channels [19]. This could be attributed to the conservative nature of the Saudi Arabian society where people prefer to consult their relatives, neighbors, elders, and religious leaders for using traditional therapies.

Interestingly, the results of our study showed that no significant difference was observed between users in terms of the necessity of consulting a medical doctor or pharmacist before using the herbal medicine. As for nonusers, almost half of them indicated that they are healthy and have no need for using herbal medicine, while lack of available information about herbal medicine represented the second common reason for not using herbal medicine. The most significant difference between users and nonusers appears in their belief on the safety of herbal medicine due to their natural ingredients followed by the belief on the role of herbal medicine in maintaining and promoting health.

In conclusion, even though the study's findings indicate a moderate use of herbal medicine in the UAE, particularly among people with hypercholesterolemia, it is worth knowing that there are risks associated with using herbal products, and the danger of medication interactions is not completely understood. As a result, further studies are necessary in this area. It is of great importance to develop effective herbal medicine policies and health education initiatives that emphasize both the benefits and drawbacks of using herbal remedies in order to improve patients' knowledge and awareness about their use.

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