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Original Research

Complementary and Alternative Medicine Use and Its Determinant Factors in Iranian Asthma and Chronic Obstructive Pulmonary Disease Patients

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Abstract

Asthma and chronic obstructive pulmonary disease (COPD) are the most common chronic diseases with a high global burden of disease. Today, the use of complementary and alternative medicine (CAM) has become more popular. In general, in developing countries, easy access and low cost of traditional medicine, and in developed countries, more access to health information, the prevalence of old age and the increase in chronic diseases are the reasons for this increasing use of traditional medicine. This study aimed to determine the rate and pattern of CAM used and their relationships with demographic characteristics among asthmatic and COPD patients. This research was a cross-sectional study performed on asthma and COPD patients (n=357) referring to the Pulmonary Diseases affiliated with Ardabil University of Medical Sciences, Ardabil, Iran from 2019 to 2020. Data were collected by using semi-structured questionnaires including open and closed questions and face-to-face interviews. Three hundred and thirty-nine patients (95%) used at least one type of CAM in the last year of study. About half of the patients (49.9%) used more than two types of CAM during the last 12 months. Three hundred and four patients (85.2%) used medicinal plants. Few patients reported with the use of CAM to their physician or health care providers (16.1%, 12.5%, and 16.7% of the users of medicinal plants, bloodletting, and dry cupping respectively). Relatives and friends (77.9%) were with the most common sources of recommendation of CAM to the patients. The present study showed the high prevalence of using different types of CAM, especially herbal medicines in Iranian asthmatic and COPD patients. The main incentive for using CAM was for friends and family members, not health care providers. The use of CAM is associated with age patients age, family size, habitat, education, and occupation.

Keywords: Asthma; Chronic obstructive pulmonary disease; Complementary therapy; Plant; Persian medicine

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Introduction

Respiratory diseases are a major threat to global health among chronic diseases, and in the meantime, asthma and chronic obstructive pulmonary disease (COPD) are the leading causes of death in this category [1]. COPD and asthma are similar respiratory disorders that are characterized by chronic inflammatory processes of the airways and obstruction and decreased airflow. Although these two diseases have similar symptoms, such as cough and wheezing, they have two distinct conditions in terms of disease onset, frequency of symptoms, and reversibility of airway obstruction. Identifiable stimuli for exacerbating asthma symptoms are often allergens, cold weather, or exercise, while respiratory tract infections stimulate the exacerbation of symptoms in COPD patients. Through proper treatment, asthmatic patients have almost normal lung function and are asymptomatic between exacerbation intervals that rarely occur in COPD patients [2]. According to The Global Burden of Disease Study reports, the global prevalence of 339 million patients with asthma and COPD is estimated at 251 million [3,4]. In 2015, about 17.3 million people died of COPD, accounting for 5% of all deaths. Similarly, 417918 deaths were reported from asthma in 2016 [5]. More than 90% of COPD-related deaths occur in low-income and middle-income countries. It is estimated that COPD will become the third leading cause of death worldwide by 2030 [6]. According to a study (2019) conducted in Iran on 5420 adults in Bushehr province (one of the southern provinces of Iran), the prevalence of asthma was estimated at 10% [7]. According to another study conducted in 2013 on 750 people, the prevalence of COPD among men and women in Tehran was 10.1% and 8.5%, respectively [8].

The results of studies conducted in several countries show a high prevalence of complementary and alternative medicine (CAM) use by adult patients with asthma [9]. The aim of current conventional therapies for COPD and asthma is to control the disease by using bronchodilators and various anti-inflammatory drugs. Despite all the recent advances in the development of new therapies, physicians may experience adverse treatment outcomes, inadequate responses to some conventional medications, and also side effects associated with several categories of medications, such as steroids and theophylline; therefore, physicians struggle with the problem of asthma and COPD treatment [10,11].

As a result, nowadays, the use of CAM, especially medicinal plants have received more attention than ever before. Also, the use of CAM is remarkably increasing in the general population [12]. CAM includes medications and procedures that are not part of conventional medicine [13]. CAM have been used for decades to manage chronic diseases such as cancer, diabetes, cardiovascular disease, and respiratory diseases [2]. Integrative medicines are interventions used along with conventional medicine, while alternative medicines are used to replace conventional medicine [13].

In general, people who choose CAM approaches either look for solutions to improve their health and well-being [14,15] or use this type of medicine to relieve the symptoms associated with chronic diseases or to treat or reduce the side effects of conventional treatments [16,17]. The rate and type of CAM used varies between different religions, cultures, countries, and different plant species.

To the best of our knowledge, there was no comprehensive study on the use of CAM and its related factors among patients with asthma and COPD in Iran. The primary objective of this study was to determine the rate and pattern of CAM used and their relationships with demographic characteristics among asthmatic and COPD patients in Ardabil, Iran.

Materials and Methods

Design and setting

This research was a cross-sectional study performed on asthma and COPD patients referring to the Pulmonary Diseases Clinic of Imam Khomeini Hospital affiliated with Ardabil University of Medical Sciences, Ardabil, Iran from December 2019 to November 2020.

Sampling and sample size

Convenience sampling was used to enroll the participants. The minimum sample size with 95% confidence and an error of 0.05 was considered 357 people, which seemed appropriate considering the study objectives.

Inclusion and exclusion criteria

The enrolled population included patients with asthma and COPD referred to the Pulmonary Diseases Clinic affiliated with Ardabil University of Medical Sciences who were over 18 years old and had a history of at least one year of asthma or COPD and signed informed consent. Patients were excluded from the study if they could not complete the interview process or were unable to express their views for any reason.

Data collection tools

To collect information, we used a standard two-part Persian adapted questionnaire(I-CAM-IR) based on the objectives of the present study (16). After signing the informed consent form, data were collected by using semi-structured and face-to-face interviews. Each interview lasted about 15 to 20 minutes. All questions were read to the participants, and the questionnaires were completed. The questionnaires included open and closed questions, which were divided into two areas.

The first area included demographic information such as age, gender, marital status, education, occupation, number of households, place of residence, income, type of illness, duration of illness, other comorbidities, body mass index (BMI), and how to get familiar with CAM. The second area of the questionnaire, which was used to assess the types of CAM, consisted of four parts. In the first three parts, various treatment methods (including medicinal plants, bloodletting, cupping, phlebotomy, hydrotherapy, leech therapy, and massage), the use of medicinal plants and dietary supplements (including various pills, capsules, and fluids), individuals providing CAM, the rate of using CAM therapies in the previous year and the last three months, informing or not informing the physician, and the reason for using each of these methods have been raised. The use of the types of CAM has been assessed by the yes/no answers; if the answer was positive, the rate of using each type of CAM in the last three months was asked. Reasons for using CAM was assayed, for example of an acute disease, a long-term illness or its side effects, promoting health and well-being, etc. Satisfaction level was also assessed by using a four-item scale with titles of "Very much," "To some extent, " By no means", and " I do not know". High satisfaction was noted if the patients stated the availability, harmlessness, facility for using, solving the problem, not interfering with daily activities, not worrying about interfering with their other medications, feeling well, and recommendation to others. The fourth part was about self-medication practices or activities that the people used without consulting a physician willfully. In addition, some questions were asked regarding the rate of using these CAM therapies (such as mindfulness, yoga, Chi Gong, Tai Chi, relaxation, mental imagery, attending traditional healing ceremonies, praying for healing, and energy therapy) in the previous year and the last three months and informing or not informing the physician. The reason for using each of these methods was also questioned. Also, several questions were asked regarding changing the conventional drugs, local access to CAM delivery centers, and complaints or satisfaction with using.

Ethics

The study protocol was reviewed and approved by the ethics committee of Ardabil University of Medical Sciences (reference number: IR.ARUMS.REC.1398.527). The treating physician was not involved in the interview process. Participants were informed about the study purpose of the study and how to use the research data. In addition, all of them signed the informed consent form before enrolling in the study. The participants were assured that they could leave the study at any time without any reprimand. They were also assured that the data would be kept completely confidential and their information would not be disclosed individually.

Statistical analysis

Descriptive statistics were used to describe participants in general and within the group. The Chi-square test (for qualitative variables) and t-test (for quantitative variables) were used to perform the bivariate comparison of user and non-user groups. $P<0.05$ values were considered statistically significant. The Chi-square and Fisher's exact tests were used to evaluate and compare patients' use of CAM during the last 12 months based on patient demographic information. SPSS software version 26.0 (SPSS Inc., Chicago, IL, USA) was used for all statistical analyses.

Results

Social and demographic data

A total of 357 patients with asthma and COPD were included in the study (mean age = 43.6-+12.63). Socio-demographic characteristics of patients are shown in table 1.

More than 50% of the participants (N = 188) were male. Twenty-six of them lived alone. Less than 27% were illiterate. About 8% were unemployed. Only the salary of 50% of the participants was more than 1,500,0000 IR Rials (approximately US $ 54). About 24% of the participants had no chronic disease. The most common comorbidities associated with pulmonary diseases were hypertension (33.6%), gastrointestinal diseases (8.2%), liver diseases (6.2%), neurological diseases (6.2%), thyroid abnormalities (5.6%), diabetes mellitus (5.3%), and rheumatism and musculoskeletal diseases (5%).

CAM use: rate, types and related details

A total of 95% of patients (N = 339) used at least one type of CAM in the last year, including praying (participants without praying: 92% [N = 328]). According to the findings, 14.8% of participants used one type of CAM, 30.3% used two types of CAM, and 49.9% used more than two types of CAM during the last 12 months. Accordingly, 5% of patients (N=18) had not used any CAM in the last 12 months.

Among those who used CAM, 85.2% (N = 304) used medicinal plants, 59.4% (N = 212) used spiritual therapies such as prayer, 49.9%, (N = 178) used vitamins and dietary supplements, 17.9% (N = 64) used bloodletting (wet cupping) and phlebotomy, 5% (N = 18) used dry cupping, 1.7% (N = 6) used leech therapy, and nobody used acupuncture, hydrotherapy, and massage.

The rate of using medicinal plants varied from only once (34.5%) to 12 times daily (30.9%) in the last three months. The rate of using dry cupping, wet cup-

Table 1. Sociodemographic characteristics of included patients

Variables	Frequency	Valid Percentage
Age (years)		
18-40	79	22.1
41-60	176	49.3
61-80	93	26.1
>80	9	2.5
Sex		
Male	188	52.7
Female	169	47.3
Education		
Illiterate	95	26.6
Under diploma	140	39.2
Diploma	93	26.1
Academic degree	29	8.1
Occupation		
Housewife	150	42
Unemployed	29	8.1
Employed	151	42.3
Pensioner	27	7.6
Number of family members		
Single	26	7.3
2-4	255	71.4
>4	76	21.3
Habitation		
Urban	293	82.1
Rural	64	17.9
The family income per month (IR Rial)		
<8000000	173	48.5
8000000-15000000	6	1.7
15000000-30000000	81	22.7
>30000000	97	27.1
Comorbidities		
No chronic disease	86	24.1
Rheumatoid arthritis/osteoarthritis	18	5
Diabetes	19	5.3
Chronic skin disease	3	0.8
Thyroid disease	20	5.6
Neuropsychological disease	22	6.2
Hypertension	120	33.6
Kidney Disease	18	5
Liver disease	22	6.2
Gastrointestinal disease	29	8.2
Duration of asthma/COPD		
1-2 years	156	43.7
2-10years	104	29.1
>10years	97	27.2

Table 2. Pattern of use in CAM users

Pattern of CAM use	NO	%
Types of CAM		
Herbal medicine	304	85.2
Spiritual therapy	212	59.4
Vitamins& Supplement	178	49.9
Wet cupping/phlebotomy	64	17.9
Dry cupping	18	5
Leech therapy	6	1.7
Acupuncture	0	0

ping, phlebotomy, and leech therapy was just once in the last three months, spiritual treatments varied from one (2.8%) to daily (71.5%), and vitamins and dietary supplements varied from one (9.6%) to daily (27.5%) (Table 2).

Satisfaction rate by CAM

The mean score of satisfaction level by using CAM was varied. A high level of satisfaction was reported by 35.9% of participants who used medicinal plants. Approximately 50% of spiritual therapy users and 24.2% of vitamins and dietary supplement users were highly satisfied with these medications. A high level of satisfaction was observed in 37.5% of bloodletting users (wet cupping and phlebotomy) and 50% of dry cupping users. All the participants who used leech therapy had a high level of satisfaction.

CAM providers

The most common sources of recommendation for using the kinds of CAM were as follows: medicinal plants were recommended by relatives and friends in 47.7% of participants, wet cupping and phlebotomy by plant sellers in 68.8%, dry cupping by relatives and friends in 83.3% and leech therapy by CAM traditional physician in 50% of cases.

Half of the patients who used vitamins and dietary supplements utilized them arbitrarily without any recommendation. The most common type of vitamins and dietary supplements used by the participants were multivitamins and zinc, in contrast, vitamin C and omega 3 were the lowest.

CAM users and their physicians

Approximately 50% of the participants informed their physicians about the with use of vitamins and dietary supplements. Only 16.1% of the patients declared the use of medicinal plants to their physician. In contrast, few patients reported the use of other types of CAM to their physician or health care providers (12.5% and 16.7% of the users of bloodletting and dry cupping respectively, with no information for prayer and leech therapy).

Herbs use

The most common medicinal plants used by the participants were *Mentha pulegium* and *Thymus vulgaris*. The list of medicinal plants is presented in table 3.

Main reasons for CAM use

The most common reason for using types of CAM was patients' health promotion (39.5% of medicinal plants users, 42.1% of the users of vitamins and dietary supplements, 50%, 64.1%, and 100% in dry cupping, bloodletting, and leech therapy users respectively).

In addition, 51 patients (14.3%) had used medicinal plants to treat problems related to asthma and COPD. Forty-eight (94.1%) out of 51 patients were satisfied with this treatment (21 participants [41.2%] "very much" and 27 participants [52.9%]"to some extent"). Of these, only 14 patients (27.5%) had informed the

Table 3. The list of most common medicinal plants used by studied patients

Medicinal plants	Persian name	Patients used No))	Patients used (%)
Mentha pulegium L.	*Pooneh*	254	%71.1
Thymus vulgaris L.	*Avishan*	158	%44.3
Ziziphora tenuior L.	*Kakooti*	139	%38.9
Cinnamomum verum J.Presl	*Darchin*	40	%11.2
Urtica dioica L.	*Gazaneh*	33	%9.2
Matricaria chamomilla L.	*Babooneh*	27	%7.6
Althaea officinalis L.	*Khatmi*	25	%7.0
Echium amoenum Fisch. & C.A.Mey.	*Gol gav zaban*	24	%6.7
Rosa canina L.	*Nastaran*	24	%6.7
Laurus nobilis L.	*Barge beh*	23	%6.4

use of this treatment to their treating physician. Most patients had provided medicinal plants by relatives and friends (52.9%) and willfully (35.3%).

Analytic data

The correlation between the use of CAM and patients' demographic information was described in table 4.

The use of wet cupping or phlebotomy was significantly associated with participants' age (P = 0.000), level of education (P = 0.000), income (P = 0.004), number of household members (P = 0.005), and occupation (P = 0.000). The use of CAM was higher in participants over 80 years old and was more in urban regions. Also, the participants with higher education, with an income of 8 to 15 million Rials, lived alone, and employees used CAM significantly more than others.

In addition, the use of medicinal plants was significantly associated with age (P = 0.000), habitat (P = 0.014), level of education (P = 0.009), number of family members (P = 0.007), and duration of illness (P = 0.006). Accordingly, patients between 18 and 40 years old, residents in cities, with higher education, and those with 2 to 4 family members used medicinal plants more than others. Also, the use of medicinal plants was more common among patients with 2 to 10 year history of their disease.

The use of dry cupping therapy was significantly related to participants' gender (P = 0.007), level of education (P = 0.019), and occupation (P = 0.001). Men, employees, and participants with higher education used cupping therapy more than others.

There was a significant relationship between the use of leech therapy and participants' age (P = 0.000), gender (P = 0.019), level of education (P = 0.001), and occupation (P = 0.000). It was more common in 18-40 years old, in men, in participants with higher education, and employees than others.

All the users used CAM as a supplement to their conventional treatment and did not change their medication schedule or dosage.

• The relationship between patients regarding informing their treating physician about CAM use and demographic information is reported in table 5.

According to the study, participants who were men who lived in the villages, were workers, and farmers, with incomes between 15-30 million Rials and a history of 2-10 years of asthma and COPD more informed about the use of wet cupping and phlebotomy to their physician.

Comparing the relationship between informing the use of medicinal plants to the physician and demographic characteristics showed that participants over 80 years old, with bachelor's and master's degrees, retirees, who live alone, and have had asthma or COPD for more than 10 years gave more information to their physician.

The patients who informed dry cupping to their physicians were more likely in 18-40-year-old individuals with low incomes (below 8 million Rials) (50%), were unemployed (100%), who live alone (100%), and have had asthma or COPD for 1 to 2 years.

• The relationship between the use of CAM and comorbidities in the studied patients is reported in table 6.

Wet cupping and phlebotomy were more common in non-diabetic and non-hypertensive participants and those free of liver and neurological diseases.

The use of medicinal plants was more common in non-diabetic participants and those free of kidney and neurological diseases. The use of vitamins and dietary supplements was higher in patients with heart diseases, thyroid problems, and comorbid musculoskeletal problems. The use of spiritual therapies, such as praying for one's health, was more common in patients

Table 4. The possible correlation between CAM usage and demographic information of patients

Demographic information		Types of CAM Used					
		Medicinal plants	Vitamins and Dietary Supplements	Praying	Bloodletting	Dry cupping	Leech therapy
Age		0.000	0.658	0.000	0.000	0.054	0.000
Sex		0.786	0.013	0.002	0.082	0.007	0.019
Habitation		0.014	0.021	0.000	0.121	0.802	0.304
Level of Education		0.009	0.000	0.000	0.000	0.019	0.001
Occupation	P value	0.096	0.001	0.000	0.000	0.001	0.000
Income		0.580	0.000	0.013	0.004	0.161	0.101
Members of family		0.007	0.004	0.008	0.005	0.281	0.295
BMI		0.122	0.122	0.000	0.494	0.374	0.224
Duration of the disease		0.006	0.004	0.000	0.067	0.655	0.269

Chi-square and Fisher's exact tests were used. P<0.05 is significant

Table 5. The correlation between the informative use of CAM to the physician

Demographic information		Informing the use of CAM, the physician			
		Medicinal plants	Vitamins and Dietary Supplements	Bloodletting	Dry cupping
Age		0.001	0.012	0.514	0.025
Sex		0.063	0.297	0.021	1.000
Habitation		0.052	0.270	0.000	1.000
Level of Education		0.004	0.035	0.171	0.165
Occupation	P value	0.044	0.285	0.022	0.001
Income		0.530	0.047	0.000	0.027
Members of family		0.004	0.000	0.274	0.000
BMI		0.000	0.171	0.006	0.000
Duration of the disease		0.003	0.379	0.001	0.027

Fisher's exact tests were used. P<0.05 is significant

Table 6. The correlation between CAM usage and co-morbidities

Comorbidities		Types of CAM Used					
		Medicinal plants	Vitamins and Dietary Supplements	Praying	Bloodletting	Dry cupping	Leech therapy
Gastrointestinal diseases		0.595	0.849	0.423	0.621	0.381	1.000
Cardiovascular diseases		0.331	0.000	1.000	0.116	0.237	1.000
Hypertension		1.000	0.264	0.000	0.005	0.133	0.185
Diabetes		0.047	0.819	0.000	0.031	0.612	1.000
Kidney diseases	P value	0.036	1.000	0.464	1.000	0.055	1.000
Liver diseases		1.000	0.667	0.824	0.019	0.000	1.000
Neurological diseases		0.001	0.654	0.823	0.019	0.613	1.000
Thyroid diseases		1.000	0.022	0.359	1.000	0.612	0.003
Musculoskeletal diseases		0.162	0.001	0.012	0.052	0.613	1.000
Skin diseases		1.000	0.623	0.274	1.000	1.000	1.000
Mental disorders		1.000	0.499	0.406	1.000	1.000	1.000

Fisher's exact tests were used. P<0.05 is significant

with diabetes, hypertension, and musculoskeletal problems. Dry cupping therapy was more common in patients with liver diseases, and the use of leech therapy was higher in patients with thyroid disorders.

Discussion

The present study showed that 92% of asthma and COPD patients referring to the academic pulmonary clinic of Ardabil University of Medical Sciences, Ardabil, Iran used at least one type of CAM (without considering prayer) in the last year. Several studies indicate that the general population is increasingly using different methods of CAM in many countries, including developing countries [15]. These studies show that 30% to 90% of the adult populations in industrialized countries and more than 70% of people in developing countries still use CAM to prevent or treat diseases [18]. The results of previous studies showed that patients with chronic diseases used CAM more than healthy individuals or patients with acute diseases [19]. However, as far as we examined, there is no study focusing on the use of CAM by patients with asthma and COPD in the Iranian population.

The high and different prevalence of using various types of CAM in different studies can be due to differences in methodology, sampling method, sample size, type of questionnaire, different types of CAM, and the time of conducting the study. The questionnaire of the present study has focused on some types of traditional treatments, such as phlebotomy, herbal therapy, leech therapy, massage, wet cupping, dry cupping, hydrotherapy, acupuncture, homeopathy, yoga, sports movements such as Tai Chi, energy therapy, and spiritual therapies.

In this study, medicinal plants were the most common types of CAM used by asthma and COPD patients (85.2%), followed by spiritual therapies (59.4%), cupping therapy (5%), and leech therapy (1.7%) were at the bottom of the list. None of the subjects in this study used massage therapy, acupuncture, energy therapy, yoga, and Tai Chi.

In addition to the impact of socio-economic and cultural factors, it seems that some other factors such as the mountainous geography of Ardabil, the abundance of medicinal plants, the existence of several herbal medicine stores in this city, and easier access were effective in high tank use of herbal medicine in this study. The results of Argüder et al. (2009) study on 521 patients with asthma and COPD showed that 52% of asthmatic patients and 70% of COPD patients used the same type of CAM and 46% of asthmatics and 28% of COPDs used medicinal plants to improve their condition [20]. According to Yekta et al. study, herbal medicine, and prayer were the most common methods of CAM in the general population in Isfahan, Iran, which were consistent with our study [18].

According to the study by Abolhassani and his colleagues (2012), praying for one's health was the most common and desirable method of CAM among users in Iran [21]. The study by Montazeri et al. (2007) in Tehran, Iran, showed that praying and participating in healing ceremonies (75.7%) were the most common methods of CAM which were used by patients with various kinds of malignancies [22]. It can be concluded that according to the cultural and religious beliefs of the Iranian people, the use of spiritual therapies was one of the most common types of CAM for treating diseases [18].

In the present study, the use of wet cupping and phlebotomy were more common among non-diabetic and non-hypertensive patients, as well as those free of liver and neurological diseases. In the Mayuree Tangkiatkumjai et al. study in Thailand on patients with kidney diseases, herbal products and dietary supplements were the most common types of CAM (about 45%) used by these patients [23]. The findings of the present study showed that asthmatic and COPD patients with kidney diseases used dietary supplements more frequently than other comorbidities. However, the use of herbal medicines in this group of patients was lower.

According to the current study, relatives and friends (77.9%) were with the most common sources of familiarity with types of CAM, followed by the Internet (17.9%). A similar study was conducted in Turkey by Arguder et al. (2009). The study aimed to determine the rate of using CAM in patients with asthma (N=313) and COPD (N=208) patients. In this study, 163 patients with asthma (52%) and 70 patients with COPD (33%) used different types of CAM, among which relatives and friends were the main sources of familiarity with CAM methods, which are consistent with the results of the present study [20].

According to the present study, pennyroyal (71.1%) and thyme (44.3%) were the most common medicinal plants used by the patients. Heydarnejad and Tavassoli's study (2009) stated that 47.2% of patients had used medicinal plants to treat asthma in their study. The most common plants used by these patients included pennyroyal, borage, basil, thyme, and plane seed, among which pennyroyal and thyme were reported to be the most effective [24]. According to the findings of the studies, it can be said that the residents of Ardabil use mostly native plants of their province, such as thyme and pennyroyal.

Based on the findings of the present study, a high satisfaction rate of wet cupping and phlebotomy was reported among the studied patients (81.3%:37.5% "very much" and 43.8% "to some extent"). In a study conducted by Vakili et al. (2014) in Yazd, Iran, out of 272 patients who underwent wet cupping, 48.9% were satisfied [25]. In a study conducted by Abdul Javad (2011) in Egypt on 50 patients with asthma in two wet cupping and control groups, a significant improvement was observed in the peripheral eosinophil count, FEV1 rate, and also the FEV1/FVC ratio in the intervention group [26]. It can be concluded that according to the possible positive outcomes and in some evidence, satisfaction with wet cupping and phlebotomy has been reported among asthmatic and COPD patients.

According to the results of this study, only 16.1% of users informed their physicians regarding the use of medicinal plants. Alshagga et al. (2011) conducted a study in Malaysia on 95 patients with asthma and COPD. Their study showed that the most common types of CAM used by the patients were medicinal plants and food. About 62% of patients had not reported the use of CAM to their physician. The most common reasons for not informing the physician were: Lack of asking by the physician (55.6%), lack of information about the necessity of declaring the use of CAM to the physician (25%), lack of need to tell this issue to the physician because physicians do not know about CAM (8.3%), fear of the physician's opposition (8.3%), and lack of enough time to express this issue (2.8%) [27].

According to the finding of the present study, the rate of using medicinal plants was significantly associated with age, location, level of education, number of family members, and duration of illness. Accordingly, patients with 18-40 years old, urban residents, with higher education, and those with 2 to 4 family members used medicinal plants more often than others. Ceylan et al. showed that larger family size was positively correlated with CAM use in Turkish patients with cancer, which was similar to our findings in the

Iranian population [28].

Finally, it should be noted that 51 patients (14.3%) used medicinal plants to treat problems related to asthma and COPD; 48 (94.1%) of them were satisfied with the use of this treatment (21 participants (41.2%) "very much" and 27 participants (52.9%) "somewhat"). Among these participants, only 14 (27.5%) had informed their physicians about the use of CAM. The relatively high prevalence of CAM use and the high percentage of not informing physicians about using CAM indicate that physicians and other healthcare providers should get familiar with such treatments to provide better services to their patients in this regard. In addition, they are required to be fully aware of their contraindications and drug interactions. Regarding the sources of receiving medicinal plants, most of the patients had provided them through relatives and friends (52.9%) and willfully (35.3%). It also indicated that the health care system must organize and supervise CAM services.

Study limitations

Our study also has some limitations. The most important limitation is the limited generalizability of its sample community. We used non-random convenient sampling to collect data, which affects the generalization of the findings to other populations. The pulmonary patients selected in this study may not be representative of all asthmatic and COPD patients. Due to the outbreak of the coronavirus disease 2019 (COVID-19) pandemic and the periodic closures of the clinics of this center, the data collection took longer than planned. Also, due to this pandemic, most subjects refrained from gathering in public places and traveling, and consequently, it was impossible to accurately evaluate CAM treatments such as hydrotherapy, sports such as yoga and Tai Chi, and healing ceremonies.

Conclusion

The present study showed the high prevalence of using different types of CAM, especially herbal medicines, in Iranian asthmatic and COPD patients. The main motivation for using CAM was set of recommendations by friends and family members, not by healthcare providers. The finding of this study supported previous knowledge about the popularity of CAM among people with clinical problems. A comprehensive understanding of CAM use and determinants may help healthcare providers to design appropriate interventions, give suitable services, and monitor and evaluate the results of using CAM. Further empirical studies are needed to evaluate the efficacy of each CAM method on various health problems.

Conflict of Interests

None.

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