Complementary and Alternative Medicines: Usage and Its Determinant Factors Among Outpatients in Southeast of Iran

Fateme Ghaedi, MSc[1], Mahlagha Dehghan, PhD[2],
Masoumeh Salari, MSc[2], and Akbar Sheikhrabori, MSc[2]

Abstract

Prevalence of complementary and alternative medicines is increasing specially in patients with chronic diseases. Therefore, based on the high prevalence of chronic disorders, the present study aimed to determine complementary and alternative medicine usage frequency and its determinant factors. This was a cross-sectional study. Five hundred clients participated in the study by using convenience sampling. A 2-part questionnaire (including demographic form and researcher-created questionnaire) was used for studying the prevalence of using complementary and alternative medicine methods, and users' satisfaction. Findings showed that 75.4% of people used at least one complementary and alternative medicine method. Most of users consumed medicinal plants (69.4%). The most common reason of using a complementary and alternative medicine method was common cold (32.9%). The highest satisfaction belonged to massage (2.94 ± 0.74). The usage of complementary and alternative medicine was 3.22 times higher in people with academic educations when compared with illiterate people. Concerning the high usage of complementary and alternative medicine, it is necessary to train specialists in this field in order to offer such treatments in a safe manner. Also, outcomes of application of complementary and alternative medicine methods should be studied.

Complementary and alternative medicine refers to a group of medicinal systems, health care, practices, and products that are considered as a part of common medicine.[1,2] This field has several branches including massage therapy and plant therapy.[3] In recent decades, usage of complementary and alternative medicine has been increasing rapidly throughout the world[4] and its acceptance has increased obviously.[5] In the United States, nearly half of people use complementary and alternative medicine methods, and annually 14 million dollars are spent for such treatments.[6] Also, studies show that 5% to 74.8% of people throughout the world are using complementary and alternative medicine.[7]

People use complementary and alternative medicine methods due to complaints from different diseases.[7] Studies have indicated that physical problems, chronic diseases, lack of physical ability, disabilities, and mental stresses play important roles in the usage of such treatments.[8] Most of the users of such methods are chronic patients wherein modern treatments are less effective or ineffective on them.[9] In addition, pain, specially pain after surgery, is one of the common reasons that people prefer such treatments.[10] A study indicated that biophysical treatments have been the most common type of complementary and alternative medicine method used by cancer patients.[11] In Iran, several studies have been conducted to evaluate the prevalence of complementary and alternative medicine usage in different cities and among different populations. According to these studies, the prevalence of complementary and alternative medicine usage varied between 35% and 79.8%.[2,12,13] Cancer patients were the target population of most of these studies.[2,12] The most common reasons for using such treatments were problems resulting from breast and digestive system cancers,[14] the fear of cancer,[12] concerns of the side effects of medical therapy, beliefs in being less risky and fewer side effects of complementary medicine,[2] dissatisfaction of general practitioners,[2,12] and the increase of well-being feelings in physical conditions.[2] Yekta et al focused on the general population. According to their study, the most common problems of using complementary and alternative medicine were

[1] Isfehan University of Medical Sciences, Isfehan, Iran
[2] Kerman University of Medical Sciences, Kerman, Iran

Corresponding Author:
Akbar Sheikhrabori, MSc, Department of Prehospital Emergency, Kerman Medical University, Kerman, Iran.
Email: p.shykhrabori@gmail.com

digestive problem, obesity, hyperlipidemia, anxiety, and depression. They found that herbal medicine and bless therapy were the most common methods that were chosen by people of Isfahan.[13]

Prevalence of using each of the groups of complementary and alternative medicine methods in adults has been estimated differently, and it depends on the target population and research method.[5] Nevertheless, the real amount of using complementary and alternative medicine is different in various countries because socioeconomic and cultural factors have an impact on its usage. In addition, the prevalence is affected by methodological factors in the studies.[15,16] Since many people are using complementary and alternative medicine, it is necessary to recognize how and why such treatments are used.[8] In addition, one of the main goals of health services in any country is to promote personal health in the society, and the health system has been interested in the identification of people who are using such treatment, the reason of its usage, and the relation between complementary and alternative medicine and modern treatment.[17] Therefore, the health system should increase its research potential in the direction of recognition of social needs. Nevertheless, nursing and holistic cares focus on integrity of human existence and pay attention to personal experiences, beliefs, and opinions related to health. In this direction, the nurse should be aware of such experiences in order to spread, reinforce, and complete his/her area of practices and help people access the best state of health.[18] On this basis, the present study aims to investigate the usage prevalence of some of the complementary and alternative medicine treatments, the reasons for using such treatments, and users' satisfaction.

Materials and Methods

Study Design and Setting

This was a cross-sectional study conducted in Besat Clinic of Kerman. This is the only educational center that serves specialized and postspecialized care to outpatients from the southeast of Iran. Kerman is the largest city in southeast of Iran, with a population of more than 722 000.

Sampling and Sample Size

Convenience sampling was used. Sample size was estimated to be 474 by using the Cochrane formula with an error amount of 0.045. Totally, 525 subjects were considered after taking into account dropout probability.

Instrument

In order to gather information, a 2-part questionnaire was used including a demographic data form (such as age, gender, marital status, educational degree, job, income, and having chronic disease) and a researcher-created questionnaire for studying types and usage of some complementary and alternative medicine methods, problems and diseases that persuade the user to use such methods, and his/her satisfaction with the method. The second part of the questionnaire includes types of complementary medicine (medicinal plants, wet cupping, cupping, phlebotomy, hydrotherapy, leech therapy, and massage) and cause of using each of these methods. The amount of usage has been measured by yes or no answers, and if the answer is yes, it will be estimated based on patient's report on number of using each technique in last year. Reason for using complementary and alternative medicine includes backache, pain in knee, other chronic pains, kidney stone, depression, anxiety, psychotic disorders, skin disease, allergy, obesity, thinness, anorexia, common cold, malnutrition, irritable bowel syndrome, hypothyroidism, hyperthyroidism, diabetics, hypertension, chronic fatigue, asthma, insomnia, and others. In addition, amount of satisfaction was measured by using an 8-item scale about accessibility, harmlessness, ease of usage, relief of problem, no interference with daily activities, no concern for interfering with other therapeutic methods, feeling well after using treatment, and suggesting the method to others. This scale was scored by a 5-point Likert-type scale (4 = very satisfied, 3 = satisfied, 2 = unsatisfied, 1 = very unsatisfied, and 0 = no idea). Based on mean scores of the scale of satisfaction, the scores were variable ranging from 0 to 4, and higher scores show higher satisfaction from using complementary and alternative medicine. The mean scores ≥ 2.5 were considered as satisfied, and the mean scores below 2.5 were considered as unsatisfied. In order to obtain content and face validity, books, sources, and opinions of 10 faculty members of Isfahan University of Medical Science, who have been trained in complementary and alternative medicine, were used and the questionnaire was assessed regarding clarity, ease of usage, and the time required for its completion. Also in order to determine the reliability of the satisfaction scale, a pilot study was done on 30 persons of the target population who used complementary and alternative medicine and the internal consistency of the scale was calculated. Cronbach's α was .77.

Data Collection and Analysis

In present study, the target population was all clients referring to Besat Clinic of Kerman. People older than 15 years who had the mental and physical ability to answer the questions were eligible to participate in the study. The questionnaires were given to patients in order to be completed in the form of self-report. In case the patient was illiterate, the questionnaire was completed by the researcher. Sampling was taken from the beginning of June to late June 2015. Data were analyzed by SPSS version 18. Descriptive statistics (frequency distribution tables, percentage, mean, and standard deviation) were applied to describe the amount of usage and satisfaction from complementary and alternative medicine, and logistic regression was used to determine the relation between demographic characteristics and being user of complementary and alternative medicine. Significance level was considered at .05.

Ethical Consideration

Kerman University of Medical Science approved this project. After approval, permission was offered to the management of Basat Clinic. The researcher offered some oral information to the participants including the goals and objectives of the study, the confidentiality and anonymity of the data, and that they were free to withdraw from the study at any time. Verbal consent was given individually.

Results

Sociodemographic Characteristics

In total, 500 participants were assessed. The mean age of the participants was 39.84 ± 13.92 years. More than 50% of them

were women. Nearly 14 were single. Less than 20% were illiterate. Less than 9% were unemployed. Only the salary of 8.2% of participants was more than 1 500 000 tomans (nearly US$450). Almost 20% of the participants had no chronic disease, and the most prevalent disease was hypertension (17.2%). It should be noted that 25 clients rejected to participate in the study, so the dropout rate was 4.76% (see Table 1). In addition, the missing values were less than 1% so none of the filled questionnaires was dropped out accordingly.

Findings

In total, 75.4% (n = 377) of the participants used at least one complementary and alternative medicine method in the previous year. Of those who used complementary and alternative medicine, 69.4% (n = 347) used medicinal plants, 21.4% (n = 107) wet cupping, 12.3% (n = 61) hydrotherapy, 3.8% (n = 19) massage, 2.2% (n = 11) cupping, 0.4% (n = 2) phlebotomy, and 0% leech therapy. The frequency of using medicinal plants varied between 1 and 500 times (mean = 123.92, SD = 116.12) in previous year. The frequency of using wet cupping, hydrotherapy, massage, cupping, and phlebotomy in the previous year varied from 1 to 6, 1 to 30, 1 to 100, 1 to 15, and 1 to 4 times, respectively. The most prevalent reasons for using complementary and alternative medicine were common cold (32.9%), backache (14.3%), knee pain (13%), depression (10.6%), migraine (9%) hypertension (7.2%), sleep disorders (6.4%), fatigue (5.3%), and diabetes (5%). The mean score of satisfaction from using medicinal plants, wet cupping, hydrotherapy, massage, cupping, and phlebotomy were $2.93 \pm 0.71, 2.84 \pm 0.54, 2.84 \pm 0.96, 2.94 \pm 0.74, 2.80 \pm 0.79$, and 2.12 ± 1.06, respectively, meaning that participants were satisfied by using complementary and alternative medicine because of its accessibility, harmlessness, ease of usage, relief of problem, no interference with daily activities, no concern for interfering with other therapeutic methods, feeling well after using treatment, and suggesting the method to others.

To check the association between being user of complementary and alternative medicine and sociodemographic characteristics, univariate logistic regression was performed. We further adjusted the model using multivariate logistic regression (Table 2). Based on the results, adjusted odd ratio showed that using complementary and alternative medicine in participants with academic education was 3.22 times more than that in illiterate participants (confidence interval = 1.37-7.59, P = .007). It is noteworthy that we did not find any association between being user of complementary and alternative medicine and other sociodemographic characteristics.

Discussion

The findings showed that 75.4% of the participants used complementary and alternative medicine in the past year. A review study showed that 5% to 74.8% of people throughout the world use complementary and alternative medicine.[2,7] Another study showed that 62.5% of people used at least one method of

Table 1. Description of the Study Sample (N = 500).

Variables	Frequency[a]	Valid Percentage
Age (years)		
15-25	82	16.4
26-35	136	27.2
36-45	128	25.6
46-55	79	15.8
>55	75	15.0
Sex		
Male	198	39.6
Female	302	60.4
Marital status		
Single	69	13.9
Married	405	81.3
Other[b]	24	4.8
Education		
Illiterate	93	18.6
Under diploma	153	30.6
Diploma	106	21.2
Academic degree	148	29.6
Job		
Housewife	241	48.2
Unemployed	43	8.6
Employed	196	39.2
Pensioner	20	4.0
Family income per month (toman[c])		
<500 000	174	34.8
500 000-1 000 000	166	33.2
1 000 001-1 500 000	119	23.8
>1 500 000	41	8.2
Disease		
No chronic disease	99	19.8
Rheumatoid arthritis/osteoarthritis	65	13.0
Hernia disc	73	14.6
Anemia	78	15.6
Migraine	68	13.6
Hypertension	86	17.2
Diabetes	63	12.6
Neuropsychological disease	72	14.4
Asthma/allergy	45	9.0
Chronic skin disease	19	3.8
Thyroid disease	25	5.0
Heart disease	53	10.6

[a]Some variables had less than 500 frequencies because of missing values.
[b]Widowed or divorced.
[c]Iran currency (1$US = 3200 toman).

complementary and alternative medicine.[13] Although the findings of these studies agree with the high frequent usage of complementary and alternative medicine, it should be noted that such range for prevalence of usage of complementary and alternative medicine can suggest methodological differences including sampling, target population, and type of questionnaire in various studies. The present study has focused on 7 Iranian traditional treatments, that is, phlebotomy, hydrotherapy, plants therapy, leech therapy, massage, wet cupping (*Hijamat*), and cupping (*Badkesh*) with clinical-based sampling. In this study, among complementary and alternative medicine users, the highest frequency belongs to medicinal plants (70%) and

Table 2. Unifactor Logistic Regression Model for Being User of Traditional Medicines, With Adjustment for All Listed Variables.

Variables	Unifactor logistic regression			Multifactor Logistic Regression		
	OR	CI	P Value	OR	CI	P Value
Age (years)						
15-25	I		.15	I		.42
26-35	1.66	0.90-3.06	.10	1.28	0.62-2.57	.51
36-45	1.93	1.02-3.62	.04	1.76	0.80-3.84	.16
46-55	1.93	0.94-3.96	.07	2.27	0.93-5.56	.07
>55	1.11	0.57-2.18	.76	1.47	0.58-3.70	.41
Sex						
Male	I			I		
Female	0.84	0.56-1.29	.43	0.93	0.42-2.01	.84
Marital status						
Single	I		.39	I		.37
Married	1.08	0.60-1.93	.80	1.06	0.49-2.27	.88
Other[a]	2.47	0.66-9.28	.18	2.64	0.60-11.6	.20
Education						
Illiterate	I		.000	I		.02
Under diploma	1.15	0.661.98	.62	1.12	0.60-2.06	.72
Diploma	1.89	1.01-3.55	.047	2.01	0.92-4.36	.08
Academic degree	3.36	1.77-6.34	.000	3.22	1.37-7.59	.007
Job						
Housewife	I		.21	I		.99
Unemployed	0.76	0.38-1.54	.45	0.90	0.34-2.36	.82
Employed	1.49	0.95-2.34	.08	0.90	0.38-2.12	.81
Pensioner	1.11	0.39-3.17	.84	0.87	0.23-3.30	.84
Family income per month (toman[b])						
< 500 000	I		.000	I		.12
500 000-1 000 000	1.98	1.23-3.19	.005	1.72	1.02-2.91	.04
1 000 001-1 500 000	3.40	1.87-6.20	.000	2.08	1.03-4.18	.04
>1 500 000	3.31	1.32-8.30	.01	1.61	0.57-2.49	.37
Disease						
No chronic disease	I			I		
At least one chronic disease	2.06	1.28-3.31	.003	1.48	0.88-2.49	.45

Abbreviations: OR, odds ratio; CI, confidence interval.
[a]Widowed or divorced.
[b]Iran currency (1$US = 3200 toman).

the lowest belongs to leech therapy (0%). According to the study by Yekta et al, herbal medicine and bless therapy were the most common methods.[13] This finding is congruent with our study, but a study done on cancer patients in Tehran showed that the most commonly used complementary and alternative medicine methods were prayer and spiritual healing.[12] The difference between the present and prior studies can be due to the population studied and kinds of complementary and alternative medicine methods. In the present study, we did not focus on religious and spiritual methods. Iran is known as a religious country and the majority of Iranians are Muslims.[19] Therefore, in Iran using prayer and spiritual healing in different situations is predictable. Also, we focused on outpatients who had acute or chronic conditions. This may provide a better understanding of complementary and alternative medicine prevalence among patients for health care providers.

In addition to socioeconomic and cultural factors affecting the amount of usage of complementary and alternative medicine, availability of treatments can affect frequency of usage of such treatments. Therefore, it seems that regarding several groceries in the city and high availability, high frequency of medicinal plants can be explained compared to other treatments. Also, this finding agrees with report of the American National Complementary and Alternative Medicine Association,[20] and other studies.[21,22] But the study done by Stewart showed that the most common complementary and alternative medicine method used by women was minerals and medications.[23] The reason of such disagreement is due to the type and number of treatments and the population under consideration, which was different from the current study. For example, evidences show that some populations, especially cancer patients, use complementary and alternative medicine more than others,[24] and if studies are done on only cancer patients, it will be expected that the more common treatment among them is different from that of a general or clinical population.[25] In this regard, a study indicated that the most common complementary and alternative medicine has been spiritual healing,[26] which was not investigated in the current study.

The most common problems leading to using complementary and alternative medicine were common cold (33%) and backache (14%). Since sampling has been clinical in this study, higher frequency of these disorders can be explained compared to nonoptional or society-based population. On the one hand, it can be expected that in this study setting (clinical center) people are benefited from therapeutic outcomes of such methods more than other outcomes such as promotion of health and primary prevention. On the other hand, this finding can suggest low information in people about complementary and alternative treatments and their usage. However, there is no systematic system in the country to serve these treatments and educate about them. The highest and the lowest means of satisfaction from complementary and alternative medicine belong to massage therapy and wet cupping, respectively. Concerning that massage therapy is a noninvasive practice and wet cupping is invasive, this might affect participants' satisfaction. Therefore, these means are explainable.

Multivariate logistic regression showed that usage of complementary and alternative medicine in people with academic education is 3 times higher than that in illiterate people and there was no relation between other demographic factors and usage of complementary and alternative medicine, while evidences show that gender, educational level, and economic status are associated with usage of complementary and alternative medicine.[14] It seems that this finding can associate with methodological differences (such as the population under study, amount of the sample) of the present study and comparative ones.

As seen in most studies, our study also has some limitations. We used convenience sampling to collect the data, and this would affect generalizing the findings to other populations. The complementary and alternative medicine methods are so various, although we tried to evaluate the more prevalent complementary and alternative medicine methods and the most traditional ones in Kerman, some prevalent complementary and alternative medicine methods might have been missed.

In conclusion, the results of this study supported previous knowledge about the popularity of complementary and alternative medicine among clients with clinical problems. A comprehensive context-based understanding of the complementary and alternative medicine usage and determinant factors may assist health care providers to design suitable interventions to educate and evaluate the outcomes of using complementary and alternative medicine. Further experimental studies are needed to assess the effect of each complementary and alternative medicine method in different health problems.

Author Contributions

FG designed the study, wrote the protocol and managed the literature searches, and wrote the first draft of the manuscript. MD performed the statistical analysis, provided advice for the study design, and helped in writing the manuscript. AS gathered the data and provided advice for the study design. MS provided advice for the study design and helped in writing the manuscript. All authors read and approved the final manuscript.

References

1. Hori S, Mihaylov I, Vasconcelos JC, McCoubrie M. Patterns of complementary and alternative medicine use amongst outpatients in Tokyo, Japan. *BMC Complement Altern Med*. 2008;8:14.

2. Anbari K, Gholami M. Evaluation of trends in the use of complementary and alternative medicine in health centers in Khorramabad (West of Iran). *Glob J Health Sci*. 2015;8(2):46587.

3. Akkas BE, Kitapci MT, Arpaci F, Gurses MA, Unlu N. Complementary and alternative medical therapies can be potential pitfalls for PET/CT imaging: report of false-positive FDG PET/CT findings caused by *Nerium oleander* vaccine in a patient with lymphoma. *J Altern Complement Med*. 2013;19:916-917.

4. Wilkinson JM, Jelinek H. Complementary medicine use among attendees at a rural health-screening clinic. *Complement Ther Clin Pract*. 2009;15:80-84.

5. Wilson K, Dowson C, Mangin D. Prevalence of complementary and alternative use in Christchurch, New Zealand: children attending general practice versus pediatric outpatients. *N Z Med J*. 2007;120(1251):U2464.

6. Bega D, Gonzalez-Latapi P, Zadikoff C, Simuni T. A review of the clinical evidence for complementary and alternative therapies in Parkinson's disease. *Curr Treat Options Neurol*. 2014;16:314.

7. Frass M, Strassl RP, Friehs H, Müllner M, Kundi M, Kaye AD. Use and acceptance of complementary and alternative medicine among the general population and medical personnel: a systematic review. *Ochsner J*. 2012;12:45-56.

8. Ganguli SC, Cawdron R, Irvine E. Alternative medicine use by Canadian ambulatory gastroenterology patients: secular trend or epidemic? *Am J Gastroenterol*. 2004;99:319-326.

9. McCan J. *Nurse's Handbook of Alternative and Complementary Therapies*. 2nd ed. Philadelphia, PA: Lippincott Williams & Wilkins; 2003.

10. Hoffman C. Benefits of complementary therapies. *Breast Cancer Res*. 2007;9(2):S9.

11. Hök J, Tishelman C, Ploner A, Forss A, Falkenberg T. Mapping patterns of complementary and alternative medicine use in cancer: an explorative cross sectional study of individuals with

reported positive "exceptional" experiences. *BMC Complement Altern Med*. 2008;8:48.

12. Montazeri A, Sajadian A, Ebrahimi M, Haghighat S, Harirchi I. Factors predicting the use of complementary and alternative therapies among cancer patients in Iran. *Eur J Cancer Care*. 2007;16:144-149.

13. Yekta Z, Zamani AR, Mehdizade M, Farajzadegan Z. Pattern of complementary and alternative medicine use in urban population. *J Res Health Sci*. 2007;7:24-31.

14. Sajadian A, Kaviyani A, Montazeri A, et al. Use of complementary and alternative medicines in cancer patients. *Payesh*. 2005; 205:194-197.

15. Harris PE, Cooper KL, Relton C, Thomas K. Prevalence of complementary and alternative medicine (CAM) use by the general population: a systematic review and update. *Int J Clin Pract*. 2012;66:924-939.

16. Quandt SA, Verhoef MJ, Arcury TA, et al. Development of an international questionnaire to measure use of complementary and alternative medicine (ICAM-Q). *J Altern Complement Med*. 2009; 15:331-339.

17. Adams J, Lui CW, Mclaughlin D. The use of complementary and alternative medicine in later life. *Rev Clin Gerontol*. 2009;19: 227-236.

18. Zanini A, Quattrin R, Goi D, et al. Italian oncology nurses' knowledge of complementary and alternative therapies: national survey. *J Adv Nurs*. 2008;62:451-456.

19. Dehghan Nayeri N, Dehghan M, Iranmanesh S. Being as an iceberg: hypertensive treatment adherence experiences in southeast of Iran. *Glob Health Action*. 2015;8:1-11.

20. Kramlich D. Introduction to complementary, alternative, and traditional therapies. *Crit Care Nurse*. 2014;34(6):50-56.

21. Posadzki P, Watson LK, Alotaibi A, Ernst E. Prevalence of use of complementary and alternative medicine (CAM) by patients/consumers in the UK: systematic review of surveys. *Clin Med*. 2013; 13:126-131.

22. Tehrani A, Fard H, Haghdoost AA, et al. The frequency of use of complementary and traditional medicines in Tehran. *Payesh*. 2008;7:355-362.

23. Stewart D, Pallivalappila AR, Shetty A, Pande B, McLay JS. Healthcare professional views and experiences of complementary and alternative therapies in obstetric practice in North East Scotland: a prospective questionnaire survey. *BJOG*. 2014;121: 1015-1019.

24. Ben-Arye E, Frenkel M, Margalit RS. Approaching complementary and alternative medicine use in patients with cancer: questions and challenges. *J Ambul Care Manage*. 2004;27:53-62.

25. Mao JJ, Palmer CS, Healy KE, Desai K, Amsterdam J. Complementary and alternative medicine use among cancer survivors: a population-based study. *J Cancer Surviv*. 2011;5:8-17.

26. Rausch SM, Winegardner F, Kruk KM, et al. Complementary and alternative medicine: use and disclosure in radiation oncology community practice. *Support Care Cancer*. 2011;19:521-529.