USE OF COMPLEMENTARY AND ALTERNATIVE MEDICINE AMONG PATIENTS WITH CHRONIC DISEASES

Mukadder Mollaoğlu[1] and Alkar Aciyurt[2]

[1]Cumhuriyet University, Health Sciences Faculty; [2]Gölova Devlet Hastanesi, Department of Public Health Gölova, Sivas, Turkey

SUMMARY – The objective of this study was to evaluate the use of complementary and alternative medicine (CAM) and related factors among patients with chronic diseases. A cross-sectional study was carried out in outpatient clinics of a general hospital using a random sample of 252 adult patients with chronic diseases. Data included information on patient demographics and socioeconomic factors, as well as items to identify CAM use and the reasons for using CAM. Data were evaluated by Pearson's χ^2-test and Fisher's exact test. It was found that 55.9% of study patients applied CAM. A significant number of patients (63.8%) were using CAM for hypertension. This study found that CAM use was associated with female gender, married status, housewives, low income and high levels of education. The present study confirmed the high frequency of CAM use among patients with chronic diseases in a Turkish public hospital.

Key words: *Complementary and alternative medicine; Prevalence of complementary and alternative medicine use; Factors associated with complementary and alternative medicine use; Chronic disease*

Introduction

Chronic diseases cannot be cured completely and cause life-threatening acute and chronic complications[1]. Therefore, individuals with chronic diseases often seek help from sources other than conventional medicine[2-4]. Prevalence rates as high as 83.3% have been reported[5], although such rates considerably differ from study to study depending on the particular sample and the definition of complementary and alternative medicine (CAM) used. A systematic review of 26 surveys in 13 countries showed that the mean prevalence rate of CAM use was 31.4%[3]. Complementary and alternative medicine (CAM) are used for a wide range of chronic diseases, which are commonly seen in the society, including hypertension, chronic heart failure, diabetes mellitus, chronic obstructive lung disease, chronic renal impairment, migraine, epilepsy and rheumatoid arthritis[4-10]. Research in Turkey and elsewhere has demonstrated high rates of CAM use; the rates range from 25% to 85% in these diseases[1,7,11-13].

The reasons why patients choose to use CAM have been much discussed, but not fully understood[3,13]. It is stated that chronic diseases are among the main causes of illness and death at the present time, and when protection and diagnosis-treatment of these diseases whose natural history is known is not entirely successful, this leads people to apply CAM[1,7]. Some CAM users use CAM because they are dissatisfied with conventional medicine. This dissatisfaction may be related to the failure of conventional medicine to effectively treat many chronic diseases and their symptoms such as debilitating pain[13]. Adult CAM users were most likely to use CAM because they believed that CAM combined with conventional medical treatments would help them in treating the disease. The CAM

Correspondence to: *Prof. Mukadder Mollaoğlu, MD*, Cumhuriyet University, Health Sciences Faculty, 58140 Sivas, Turkey
E-mail: mukaddermollaoglu@hotmail.com; mollaoglumukadder @gmail.com

users believed conventional therapies would not help them[1,7]. Besides that, they are also concerned about side effects of conventional therapies[1,14].

The known determinants of CAM use include sociodemographic and patient characteristics such as age, gender, education level, illness, and illness duration. Many studies indicate that CAM users tend to be women, of white ethnicity, middle-aged, or have higher education. Also, they were more likely to be in perceived poor health[15-18], and suffer from one or more chronic conditions[17-19], especially metabolic, cardiac and musculoskeletal disorders. Cultural characteristics have been reported to have an important role in CAM use[20,21]. Every society has a different cultural character, and health behaviors are often specific to each culture. The most commonly used CAM by adult Americans is prayer. The second most popular CAM are biologically based therapies, followed by mind-body medicine[13]. In Turkey, the two most frequently used CAM methods include herbal therapy and stinging nettle therapy. Herbal medicines and herbs such as garlic, stinging nettle and herbal teas appear to be commonly used to treat specific illnesses[22-25]. In some areas of Turkey, nettle leaves are eaten as a healthy food[26]. These interventions are claimed to reduce the number and severity of symptoms secondary to particular diseases and to increase the quality of life.

Many studies have focused on CAM use by cancer patients in Turkey[23,26-28]. However, there are few studies about other chronic diseases[11,22]. Also, there are no published studies evaluating a combination of the most common chronic diseases in Turkey. In this study, we examined the prevalence of CAM use in Turkish patients with chronic diseases in an urban community in Middle Anatolia, Turkey, and associated factors in individuals with chronic diseases living in Turkey.

Subjects and Methods

Sample

The subjects in this study were selected at polyclinics providing public sector primary outpatient care in Gölova Hospital. Eligible patients were Turkey citizens, adults above 21 years of age, who had been treated in the past year for one or more of six chronic conditions, which are the most common chronic physical diseases in the region[29,30]: chronic obstructive pulmonary disease (COPD), diabetes mellitus, hypertension, migraine, gastrointestinal tract (GI) disease and rheumatoid arthritis. All study participants were volunteers who could establish verbal communication, and all patients attended polyclinics of Gölova Hospital between August and November 2007. Twenty-three patients were excluded: 15 had a diagnostic period of less than one year and 8 did not consent to take part in the study.

Data collection instruments

Data were obtained *via* Personality and Disease Information Form (PDIF) and Complementary and Alternative Medicine Methods Form (CAMMF) prepared by the researchers.

Personality and Disease Information Form (PDIF)

This form comprises 19 sociodemographic questions (age, gender, marital status, allocation unit, educational status, profession, monthly income) and information about diagnosis, duration and medical treatment of the disease. Disease-related characteristics of the patients were obtained from charts.

Complementary and Alternative Medicine Methods Form (CAMMF)

In this section, data were collected about the use of specific CAM modalities. These modalities were chosen following a literature review, and they represent the modalities most frequently reported in previous studies undertaken in Turkey[24,26,27] and internationally[1,5,6,10-21]. Classification of the CAM categories was constructed based on CAM classification of the National Center for Complementary and Alternative Medicine (NCCAM)[31], where CAM therapies are classified as follows: (1) alternative and medical systems (AMS; acupuncture, homeopathy); (2) mind-body interventions (MBI; relaxation techniques, imagery, spiritual healing/prayer, biofeedback, hypnosis; (3) biologically based therapies (BBT; herbal therapy, dietary supplements); (4) manipulative and body-based methods (MBBM; massage therapy, exercise, chiropractic, or osteopathy); and (5) energy therapies (ET; energy healing, reiki).

Procedures

After determining that potential participants met the inclusion criteria, the information sheet and the consent form were discussed and signed as survey instrument. Upon collection of sociodemographic data, CAM was described to the patients by researchers. The patients' use of CAM was marked with the question: 'After you were diagnosed have you used any method or substance other than those prescribed by your doctor?' The patients who answered 'yes' were asked to continue with other questions about CAM therapies. Then, a list of CAM modalities (CAMMF) was read and the participants were asked to answer 'yes' or 'no' to these questions. In addition, patients were asked about their reasons for using these modalities. Each interview lasted for 15-20 minutes. However, the types of CAM practices in this study were grouped into four domains according to the National Center of Complementary and Alternative Medicine (NCCAM)[31].

Ethical considerations

The study was approved by the Ethics Committee of Cumhuriyet University. All participants were informed about the aim of the study, and then asked if they agreed to participate in the interview. Participants were told that they could withdraw from the interview whenever they wished and that all information would be kept strictly confidential.

Data analysis

Data were scanned for completeness, and responses were coded and entered into the computer program SPSS for Windows Version 14.0. Demographic and clinical data characterizing the sample were summarized through descriptive statistical procedures. In order to identify whether people were more likely to use CAM, and/or use it more frequently/use more modalities, after diagnosis with chronic diseases, the proportions using each CAM modality were first compared using the McNemar test, and then the

Table 1. Use of complementary and alternative medicine (CAM) according to type of disease

Disease	No. of patients with disease	No. of patients using CAM for disease	Prevalence of CAM users (%)	Most frequent CAMs used for disease	n (%)
All patients	252	141**	55.9	BBT (herbal therapy) MBBM: AMS (homeopathy): MBI (prayer):	121 (85.8) 29 (20.5) 13 (9.2) 8 (5.6)
Hypertension	83	53	63.8	BBT (herbal therapy: MBI (prayer):	51 (96.2) 2 (3.8)
Diabetes mellitus	74	46	62.1	BBT (herbal therapy: MBI (prayer):	44 (95.6) 2 (4.4)
Migraine	25	15	60.0	BBT (herbal therapy: MBBM	12 (80.0) 3 (20.0)
Chronic obstructive pulmonary disease (COPD)	36	18	50.0	BBT (herbal therapy): AMS (homeopathy):	13 (72.2) 5 (27.8)
Gastrointestinal tract (GI) disease	41	24	58.5	BBT (herbal therapy: AMS (homeopathy):	17 (70.8) 7 (29.2)
Rheumatoid arthritis	63	32	50.7	MBBM BBT (herbal therapy):	26 (81.2) 6 (18.2)

AMS = alternative and medical systems; BBT = biologically based therapies; MBBM = manipulative and body-based methods; MBI = mind-body interventions; **some patients were using more than one methods.

mean numbers of CAM modalities used in each group were compared using the Wilcoxon signed-rank test. Pearson's χ^2-test and Fisher exact test were used for comparisons between CAM users and non-users. The level of statistical significance for all analyses was set at $p<0.05$.

Results

In this study, the prevalence of CAM use was 55.9%. This varied greatly among individual chronic diseases (Table 1), being most prevalent in hypertension (63.8%), diabetes mellitus (62.1%) and migraine (60%), and lowest for COPD and rheumatoid arthritis; ~46% had two or more chronic conditions. The most common CAMs used were BBT (herbal therapy) (85.8%), MBBM (20.5%), AMS (homeopathy) (9.2%) and MBI (prayer) (5.6%) (Table 1).

The distribution of study participants was as follows: male 53.1% (n=134); 45-64 age group 63.8% (n=161); married 88.8% (n=224); housewives 46.4% (n=117); retired 29.3% (n=74); and living in rural area 67.8% (n=171). In addition, 48.0% (n=121) of the participants were primary school graduates; 18.6% (n=47) were illiterate; 2.7% (n=7) had no social security; and 40.4% (n=102) defined their monthly income as low (Table 2).

The characteristics of the two groups (CAM users vs. non-users) were statistically compared. When we compared demographic details of CAM users and non-CAM users, there was no significant difference between the two groups according to age and living place. Women with chronic disease were more likely to use CAM than men (χ^2=6.436, $p<0.05$), and patients with higher than high school education (χ^2=6.294, $p<0.01$), married (χ^2=5.235, $p<0.05$) and housewives (χ^2=13.667, $p<0.01$) or both were more likely to use CAM than chronic disease patients with none of these characteristics (Table 2).

The rationale for CAM use reported by patients with chronic diseases was diverse. The reasons given

Table 2. Complementary and alternative medicine (CAM) use according to patient personal characteristics

	CAM use				
	User		Nonuser		Statistical test
	n	%	n	%	
Age (years)					
25–44	11	52.4	10	47.6	χ^2=1.724 p=0.422
45–64	95	59.0	66	41.0	
≥65	35	50.0	35	50.0	
Gender					
Male	65	48.5	69	51.5	χ^2=6.436 p=0.011
Female	76	64.4	42	35.6	
Marital status					χ^2=5.235 p=0.022
Married	131	58.5	93	41.5	
Single	10	35.7	18	64.3	
Living place					
District	45	55.6	36	44.4	χ^2=0.008 p=0.930
Village	96	56.14	75	43.86	
Education					
Up to high school	69	45.4	83	54.6	χ^2=6.294 p=0.013
Beyond high school	72	72.0	28	28.0	
Occupation					
Officer	5	33.3	10	66.7	
Farmer	17	54.8	14	45.2	
Housewife	76	65.0	41	35.0	χ^2=13.667 p=0.008
Retired	11	43.2	42	56.8	
Unemployed	32	73.3	4	26.7	
Income level					
High	6	35.3	11	64.7	
Moderate	73	55.3	59	44.7	χ^2=10.936 p=0.027
Low	62	60.2	41	39.8	

Table 3. Reasons for starting complementary and alternative medicine (CAM) use

Reason	n	%
To relieve symptoms related to chronic disease	33	23.4
To maintain physical health	32	22.6
To support treatment and decrease treatment side effects	27	19.1
People around them believe in CAM treatment	26	18.4
CAM is consistent with their culture	10	7.1
Living far away from health institutions	8	5.7
They are dissatisfied with conventional medicine	5	3.5

for CAM use were as follows: 22.6% (n=32) of patients believed that cures for diseases were found in nature; 23.4% (n=33) believed there was no definite treatment for their disease; 19.1% (n=27) stated that their relatives also used these methods; and 18.4% (n=26) preferred CAM as they believed it had a supportive effect on medical treatment and decreased treatment side effects (Table 3).

The most common expectation of the benefits, ranked highest to lowest, were as follows: to relieve symptoms (23.4%), to maintain physical health (22.7%), to support treatment and decrease treatment side effects (19.1%), to choose CAM because people around them believed in CAM (18.4%), and others, such as to CAM is consistent with their culture, living far away from health institutions, and dissatisfaction with conventional medicine

Discussion

During the last decade, complementary and alternative medicine (CAM) has widespread in developing countries including Turkey and current situation shows that the use of CAM has expanded to developed countries although conventional medicine is predominant in national health care systems[16,32]. A high percentage of CAM use (55.9%) was found in this study population, endorsing a similar trend of CAM use throughout the world[1,3,5,32], as well as in Turkey[22-29]. The popularity of CAM highlighted by recent studies indicates the patients' preference of holistic approach over health care. We found that patients with specific chronic diseases, i.e. hypertension, diabetes mellitus, migraine, COPD and rheumatoid arthritis, were more likely to use CAM. These diseases were included because they are the most common chronic diseases in the study region[29,30].

The present study revealed CAM to be most frequently used by patients with hypertension and diabetes, at a rate of 63.8% in hypertension patients and 62.1% in diabetes patients. For hypertension specifically, Shafig et al.[33] report that as many as 63.9% of their hypertensive subjects in a clinic of India took herbal medicines, while in Morocco 80% of patients with hypertension and diabetes used medicine plants to treat their ailments[34]. In Nigeria, two hospital-based studies found the use of herbal medicine among

hypertension patients to be 39% and 24%, respectively[35,36]. The rates of CAM use vary from country to country. This conflicting evidence might be due to differences in beliefs, values, and cultural features of the communities included in the studies.

In Turkey, the types of CAM most frequently used by chronic disease patients are BBT and AMS[11]. Similarly, in this study, it was noted that the most frequently used CAM therapies included herbal therapies and herbal essences. Interestingly, herbs appear to be the most commonly used CAM therapy in 13 of 14 countries and were the primary therapy of choice in nine countries (Turkey, Israel, Serbia, Czech Republic, Denmark, Italy, Switzerland, Spain and Greece) and among the top five in all countries but Sweden[37]. The results obtained here may be due to the fact that herbal therapies are inexpensive and easily available. A common belief among patients is that natural products are safe because of their "naturalness"[5]. In Belgium, homeopathy was the most commonly used CAM therapy and in the top five in six other countries (Turkey, Czech Republic, Sweden, Italy, Spain and Greece)[37]. Similarly, homeopathy was identified as one of the more frequently used CAM therapies in this study.

We found significant differences in the level of education, gender, marital status, occupation and income between CAM users and nonusers. The higher usage of CAM in high educated patients observed in this study is in agreement with that reported in some studies[11,38-40]. The majority of people using CAM have the highest educational level. It is likely that in Asian populations, education and cultural influence are intertwined, such that less educated patients were more culture-bound to the use of CAM; in Western populations, better educated patients behave like 'cultural creative persons' in exploring alternative medicines[1].

Similarly, we found that women used CAM more frequently than men did. Similar findings have been reported in previous studies[22,41]. The reason for women's preference for CAM modalities may be that women generally have been more involved in self-care and self-treatment, which are major factors involved in the use of CAM[40]. Unlike some studies, however, we did not observe a positive association between aging and CAM use. However, Ceylan et al. conclude that the higher the age, the less is the probability of CAM

use[11], whereas Barnes *et al.*[13] report on older adults to be more likely than younger adults to use CAM.

In the present study, there was a significant relationship between occupation and CAM use. The great majority of unemployed people and more than half of the housewives in the study used CAM methods. The reason for this high prevalence among CAM users in unemployed people could be due to their low costs. In the present study, the rate of CAM use was particularly high among patients with low income. Metcalfe *et al.* found that CAM use was associated with high income[42]. Similarly, Garrow and Egede report high rates of CAM use among individuals with high income[43]. In Turkey, none of CAM therapies is paid by health insurance companies and individuals have to pay by themselves; however, most CAM users preferred relatively inexpensive methods such as herbal remedies. This may explain why individuals with low income are more likely to use CAM. Marital status was found to be another significant factor in the use of CAM. This study found that married people used CAM methods more than single people. While some studies[44,45] found no difference in CAM use according to marital status, Wu *et al.* report that single people use CAM more frequently compared to married people. This conflicting evidence might be due to differences in beliefs, values, and cultural features of the communities included in the studies[46].

Since people view CAM use as one element in the individually mediated approach to the self-management of their health and illness, it is important for healthcare professionals to be aware of which CAM modalities are commonly used by people with chronic diseases and why. The majority of participants in this study primarily used CAM for other health-related conditions; to relieve symptoms related to chronic disease, to maintain physical health, and to support treatment and decrease treatment side effects, thus confirming the findings of previous studies[12,47,48]. It seems that the majority of those who used CAM considered wellness and quality of life as more important than directly treating chronic disease. However, the opinion of others heavily influenced the decision-making process and the most common reason for initial CAM use, reported by participants, was that people close to them believed in the efficacy of CAM. Considering the popularity

of CAM among chronic disease patients, rigorously designed studies seem warranted.

The present study revealed a high percentage of CAM use among patients with chronic diseases. The study found the variables such as gender, marital status, education level, occupation and income level to be significantly associated with CAM use. In addition, our study showed that a significant portion of the patients using CAM used it to relieve symptoms associated with chronic disease. The findings in this study can be used to improve healthcare professional awareness, patient assessment, healthcare professional and patient education, and clinical research. Improving CAM education for patients and healthcare professionals and developing open communication between patients and healthcare professionals is imperative for efficient patient care when managing a chronic disease.

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Sažetak

PRIMJENA KOMPLEMENTARNE I ALTERNATIVNE MEDICINE MEĐU BOLESNICIMA S KRONIČNIM BOLESTIMA

M. Mollaoğlu i A. Aciyurt

Cilj ovoga ispitivanja bio je procijeniti primjenu komplementarne i alternativne medicine (KAM) i s tim povezanih čimbenika među bolesnicima s kroničnim bolestima. Ova studija presjeka provedena je u izvanbolničkim ambulantama opće bolnice na slučajnom uzorku od 252 odraslih bolesnika s kroničnim bolestima. Prikupljeni su demografski i socioekonomski podaci bolesnika, kao i podaci o primjeni KAM i razlozima za njenu primjenu. Podaci su procijenjeni pomoću Pearsonova χ^2-testa i Fisherova egzaktnog testa. Utvrđeno je da 55,9% bolesnika primjenjuje KAM. Značajan broj bolesnika (63,8%) je primjenjivalo KAM za hipertenziju. Ispitivanje je pokazalo povezanost primjene KAM sa ženskim spolom, oženjenim statusom, kućanicama, niskim dohotkom i visokim obrazovanjem. Ova studija potvrdila je visoku učestalost primjene KAM među bolesnicima s kroničnim bolestima u turskoj javnoj bolnici.

Ključne riječi: *Komplementarna i alternativna medicina; Učestalost primjene komplementarne i alternativne medicine; Čimbenici udruženi s primjenom komplementarne i alternativne medicine; Kronična bolest*