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What Influences Herbal Medicine Use? - Prevalence and Related Factors

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Aims: The use and cost of complementary/alternative medicine (CAM) has been gaining in importance worldwide. Herbal medicine is one of the most commonly used methods. To understand the effectiveness, reliability, and quality of CAM and provide standardization in its analysis, its prevalence and the factors influencing its use must be identified. This study was conducted to identify the prevalence of CAM use and the effective factors in our population.

Materials and Methods: A stratified multistage probability sampling design was used in this cross-sectional, population-based study, which was conducted in Aydin. Participants were interviewed face to face by trained interviewers with a questionnaire. The answers for the open-ended questions were categorized. Univariate and multiple (backward Wald) logistic regression and chi-square test were used for the statistical analysis. A P value <0.05 was considered as statistically significant.

Results: Totally, 873 people completed the questionnaire; 539 (61.7%) were female, 334 (38.3%) were male. Fifty-eight percent of the participants (n: 511) reported that they had used a CAM method at least once in the previous year. More than half of the participants had used herbal medicine (55.4%), and the most commonly used herb was lime (n: 426, 88.1%). The reasons for the use of herbal medicine were mostly for prevention and for treatment. In the previous year, 233 (26.7%) of the participants stated that they had applied one of the CAM methods as a treatment for their children. Health status perception, being a non-smoker and belief that "CAM was superior to conventional medicine" were determined as the factors that influenced CAM use.

Conclusions: CAM, especially herbal medicine, is commonly used in our population, and individuals use these methods not only for themselves but also for their children.

Key Words: Complementary medicine, alternative medicine, herbal medicine, prevalence

Bitkisel Tıp Kullanımını Ne Etkiliyor?: Prevalans ve İlgili Faktörler

Amaç: Tamamlayıcı/alternative tıp (TAT) kullanımı ve maliyeti tüm dünyada giderek artan bir öneme sahiptir. En sık kullanılan yöntemlerden biri de bitkisel tıptır. Etkinlik, güvenilirlik, nitelik ve standardizasyonu sağlayabilmek için, TAT kullanım yaygınlığı ve kullanımı etkileyen faktörler belirlenmelidir. Bu çalışma, toplumumuzdaki TAT kullanım yaygınlığı ve etkileyen faktörleri belirlemek amacıyla düzenlenmiştir.

Yöntem ve Gereç: Aydın'da düzenlenen bu kesitsel, topluma dayalı çalışmada Tabakalı, çok aşamalı olasılıklı örneklem yöntemi kullanılmıştır. Katılımcılara eğitilmiş anketörler tarafından yüzyüze görüşme yöntemiyle anket uygulanmıştır. Açık uçlu sorulara verilen cevaplar kategorize edilmiştir. Univariate ve çoklu lojistik regresyon ve ki kare testleri istatistiksel analiz için kullanılmıştır. 0.05'in altındaki p değerleri istatistikssel olarak anlamlı kabul edilmiştir.

Bulgular: Toplam 873 kişi anketleri tamamladı. Bunların 539'u (% 61.7) kadın, 334'ü (% 38.3) erkekti. Katılımcıların % 58'i (s:511) bir önceki yılda en az bir kez TAT yöntemi kullanmıştı. Katılımcıların yarısından fazlası (% 55.4) bitkisel tıp yöntemi uygulamıştı. En sık kullanılan bitki ıhlamurdu (s:426, % 88.1). Bitkisel tıp kullanma nedenleri arasında koruma ve tedavi amaçları başta geliyordu. Son bir yılda, çocukları için en az bir TAT yöntemi uygulayan kişi sayısı 233 (% 26.7) idi. Sağlık durumu, sigara içmeme ve "TAT, konvensiyonel tıptan üstündür" düşüncesine sahip olma, TAT kullanımını etkileyen faktörler olarak tespit edildi.

Sonuç: TAT, özellikle de bitkisel tıp toplumumuzda yaygın olarak kullanılmaktadır ve sadece kendilerine değil, çocuklarına da bu yöntemleri uygulamaktadırlar.

Anahtar Sözcükler: tamamlayıcı tıp, alternative tıp, bitkisel tıp, yaygınlık

Introduction

The National Center for Complementary and Alternative Medicine (NCCAM) defines alternative medicine as medical and health care systems, practices, and products that are not considered in conventional medicine (ConM) practices (1). Complementary and

alternative medicine (CAM) is common in both developing and developed countries (2). CAM use increased from 34% to 42% between 1990-1997 in the United States (3,4). Each year, two-thirds of the German population (5) and one-fifth of the British population (6) try at least one form of CAM. The frequency of CAM use has been estimated as 10% in Denmark (7), 33% in Finland (4), 49% in Australia (8), 15% in Canada (9), and 19% in Israel (10). On the contrary, knowledge on the prevalence of CAM use and the factors influencing CAM use is limited.

Herbal drugs and dietary supplements belong to one of the five CAM therapies (1). Herbal/mineral/vitamin supplements, acupuncture and relaxation techniques are the most commonly used CAMs (1).

Economical data can show the financial importance of CAM use. Malaysia allocates $500 million annually for CAM versus $300 million for ConM. The expenditure on CAM is $2.7 billion in the United States and $80 million in Canada, Australia and the United Kingdom (12).

The factors influencing CAM use can differ from country to country. The common use of CAM in developing countries is thought to be due to the efficiency and economic availability of the method. In addition, religious beliefs can have an effect on CAM use. The common use of CAM in developed countries is thought to be related to the fact that it is easier to access the information about side effects of chemical drugs. In addition, the increasing life expectancy affects all chronic illnesses, cancer and mental illness forms. As the use of CAM increases, the need for evidence showing its reliability, quality and efficiency rises (12).

Many countries do not include regulations about CAM methods in their medical policies. The absence of regulations is very important not only for efficacy, quality, and reliability of the resources but also for education of the population (13-15). Only acupuncture falls under legal regulation in medical policies in Turkey (16).

Because CAM applications vary in parallel to the culture, it is not easy to standardize an analysis of CAM methods. This subject is especially important for herbal medicine, because its efficiency and quality are prone to many factors (12). In order to standardize the efficiency, reliability and the quality of CAM, the prevalence and factors affecting its use in the population have to be identified.

On the other hand, as primary care physicians are the "gatekeeper" of health care, they can play a very important role in the use of CAM. Because of its widespread use, CAM is increasingly considered as acceptable among family physicians (17). Physicians' approach to CAM use is generally "don't ask, don't tell" (18), but individually the approach range is wide. Most physicians generally do not discuss CAM therapies with their patients, and most patients do not inform their physicians that they are using CAM therapy (19).

Therefore, the aims of this study were:

- To identify the prevalence of CAM methods, especially herbal medicine and those used in our population;
- To search the reasons and the factors affecting CAM use;
- To identify the thoughts and beliefs about this issue;
- To identify the patients' opinion about the roles of doctors in CAM use;
- To bring CAM and herbal medicine use to the attention of the population, particularly physicians.

Materials and Methods

This cross-sectional study is a pilot research of a nationwide study, which was designed by one of the authors (M.M.) and presented as a project during a nationwide Family Medicine meeting. The questionnaire used in the study was primarily designed by the authors (M.M., S.A., A.O.B). The preliminary form was applied to 25 people and after the arrangements, the final form was constituted.

Participants and Setting

Aydin is a city of approximately one million inhabitants (about 350,000 inhabitants in urban area) (20). It is located in the Aegean part of Turkey, where herbs and the Mediterranean diet are generally consumed. Many types of herbs can be found in this region.

We used a stratified multistage probability sampling design in this study. The sample was stratified for dwelling place (urban, rural), gender and age groups (18-39 years, 40-59 years, 60 years and older) in proportions similar to the general Aydin population. A total of 334 male (38.3%) and 539 female (61.7%)

participants who were 18 and older were chosen from the District Population Institute records by systematic sampling. Lifetime prevalence of CAM use was reported to be 36-60.1% in Turkey (21); we used 40% prevalence to determine the sample size of this study.

Study Procedure

Participants were interviewed face to face at homes and in offices by trained interviewers. The participants were informed about this study. The questionnaire included 42 open- and closed-ended questions about sociodemographic features, CAM use, beliefs and factors affecting use of herbal medicine, and questions regarding whether they informed their physicians about using CAM. Their previous medical history was also included in the questionnaire. Although the study is based on informed consent, it was approved by the Ethics Committee of Uludag University.

Statistical Analysis

The answers for the open-ended questions were categorized for the statistical analysis. Univariate and multiple (backward Wald) logistic regression were used to analyze the effect of variables on using CAM therapies. Birthplace (urban and rural), location of residence (urban and rural), occupation, age, education, income and smoking were the variables used in logistic regression. A P value of <0.05 was considered as statistically significant. The chi-square test was used to compare the categorical variables.

Results

Among the 873 participants, 539 (61.7%) were female and 334 (38.3%) were male. Sociodemographic features are given in Table 1.

After univariate analysis, the factors affecting CAM use were identified (Table 2). Results of the multivariate analysis can also be seen in Table 2.

In the event of an illness, 723 people (82.8%) stated that they would present to a medical institution, whereas 116 participants (13.3%) preferred to use a CAM method and 34 (4.5%) would do nothing. One hundred forty-one (16.1%) reported that they had a previously diagnosed chronic disease, 52 (6%) had depression, 3 (0.3%) had cancer, and 181 (20.7%) had another illness. Among all participants, 511 (58.5%) used a CAM method at least once in the previous year, and of these, 484 (94.7%) used herbal treatment. Methods used are given in Table 3. From among the participants who were still using herbal therapy (n: 113), 27 (23.9%) used lime, 17 (15.1%) sage tea, 15 (13.3%) thyme, 5 (4.4%) nettle, and 5 (4.4%) mint.

About one-third of the participants (n: 275, 31.5%) had a particular doctor whom they visited at regular intervals. Seventy-two (26.2%) of them had primary care doctors; the rest were secondary or tertiary care specialists. Among all participants, only 52 (5.9%) were queried about CAM use by their doctors. Only 128 (26.4%) of participants who used herbal medicine (n: 484) informed their doctor in this regard. Of the 128, only 51 (10.5%) consulted with their doctors about herbal therapy and 23 (4.8%) were advised by their doctors to use herbal treatments. The remainder of the participants were informed about herbal medicine from friends and family.

The most commonly used herb was lime (n: 426, 88.1%) (Table 4). Most of the participants (n: 368, 76.1%) had been using various herbs to supplement their diet. Among these, 127 (34.5%) were using citriculture products, 106 honey, 99 herbal tea and 36 other products.

The reasons for the herb use were for prevention in 37.4%, treatment in 25.6%, and other reasons in 37%.

Only 10 of the participants (2.1%) noted that they had a side effect when using an herbal method.

About one-fifth of those who used herbs (n: 88, 18.2%) could receive herbal products without payment. Only 28 (5.8%) bought herbs from a drug store or a bazaar.

From the total, 233 (26.7%) participants used at least one CAM method for their children in the previous year. Most of these (n: 219, 93.9%) preferred herbal therapy and 6 (0.7%) used religious prayer. Almost one-third of all participants (n: 260, 29.8%) were still using herbs for their children to supplement their diet. The most commonly indicated was honey (n: 123, 47.3%), followed by citriculture products (n: 59, 22.7%) and herbal tea (n: 28, 10.8%).

When their opinions regarding herbal therapy were questioned, 414 (47.4%) of the participants stated that "It can be used to support modern medicine". Two hundred fifty-seven (29.4%) thought that it was purely

Table 1. Characteristics of the study population.

Subject profile	Male		Female	
	n	%	n	%
Gender	334	38.3	539	61.7
Birthplace				
Urban	221	25.3	158	29.3
Suburban	440	50.4	308	57.1
Rural	212	2.3	73	13.5
Location of Residence				
Urban	96	28.7	213	39.5
Suburban	238	71.3	326	60.5
Age groups				
18-39 years	200	59.9	301	55.8
40-59 years	118	35.3	201	37.3
60 and older	16	4.8	37	6.9
Body mass index				
<18.5	4	1.2	32	5.9
18.5-24.9	134	40.1	288	53.5
25-29.9	155	46.4	151	28.0
>30	41	12.3	68	12.6
Marital status				
Married	235	70.4	355	65.9
Single	97	29.0	140	26.0
Divorced-widowed	2	0.6	44	8.2
Education				
8 years	69	20.7	162	30.1
9-11 years	33	9.9	44	8.2
12-14 years	120	35.9	201	37.3
>15 years	112	33.5	132	24.5
Family income (self-rated)				
Good	85	25.4	158	29.3
Fair	203	60.8	327	60.7
Bad	46	13.8	54	10.0
Family income (self-rated)				
<500 $	125	37.4	233	43.2
500-1000 $	133	39.8	155	28.8
>1000 $	41	12.3	68	12.6
Not reported	35	10.5	83	15.4

Table 1. (Continued)

Subject profile	Male		Female	
	n	%	n	%
Smoking				
Non-smoker	146	43.7	369	68.5
0-9 cigarettes/day	57	17.1	70	13.0
10-19 cigarettes/day	47	14.1	42	7.8
>20 cigarettes/day	38	11.4	22	4.1
Ex-smoker	46	13.8	36	6.7
Regular alcohol consumption				
Yes	139	41.6	53	9.8
No	195	58.4	486	90.2
Recommendation of herbal therapy				
Yes	9	2.7	14	2.6
No	325	97.3	525	97.4
Using herbal therapy (life-long)				
Yes	167	50.6	317	59.3
No	163	49.4	218	40.7

natural and harmless. Thirty-two (3.7%) reported that they made decisions about their health by themselves, not with their doctors, so they chose herbal treatment. Only 28 (3.2%) thought that it was easily available. Seventeen (1.9%) reported that those around them were content with it, so they saw no reason not to use it. Fourteen (1.6%) stated that herbal methods could be used instead of ConM. Only 7 (0.8%) believed it could prevent cancer. Four (0.5%) participants noted that they received no benefit from ConM, but did benefit from herbal therapy.

More than half of the participants (n: 517, 59.2%) thought that ConM was superior to herbal therapy. Of these, 195 (32%) pointed out that herbal treatments were not controlled or supervised; 180 (29.5%) considered them only as a support to ConM. Nearly one-fourth (n: 147, 24.1%) of the participants who preferred herbal medicine thought that herbal drugs were natural and that they were used as ingredients in all drugs. Fifty-seven (9.3%) reported that they benefitted from herbal drugs and thought there were no side effects. Twenty-five participants (4.1%) thought that herbal medicine could be used in some untreatable diseases. Six (1%) stated the ease of obtaining herbal therapy as a reason for using it.

Chronic diseases were more common in females and married people (P: 0.002 and P: 0.000, respectively). Furthermore, health status perception of males was better than of females (P: 0.04).

Discussion

Concordant with worldwide results, our study yields a high prevalence of CAM use, with herbal medicine the most commonly used CAM method in our population (12-15). In our study, approximately one-third of the participants thought that herbal medicine was natural and harmless, while Algier and colleagues (21) reported this ratio as 18.9%. In the same study, the most commonly applied CAM method was also herbal medicine, concordant with our results. In Algier's study, the most commonly used herb was thyme, while it was lime in our study. This difference could be due to the fact that Algier's study involved cancer patients, and thyme is believed to prevent and cure cancer in our country. Another study showed 70% prevalence of CAM use in the eastern part of Turkey, with herbal medicine again the most commonly used method (22). According to Ernst and White (6), the most frequently used CAM therapy in England is also herbal medicine.

Table 2. Factors affecting CAM use.

Factors	Univariate logistic regression analysis		Multiple logistic regression analysis (backward Wald)	
	Odds ratio	95% CI Lower-Upper	Odds ratio	95% CI Lower-Upper
Birthplace				
City center	1	0.690-1.611	-	-
County	1.054	0.789-1.693		
Town	1.156	0.539-1.718		
Village	0.962	0.962-.539		
Gender				
Male	1		-	-
Female	1.419	1.077-1.871		
Marital status				
Married	1		-	-
Single	1.014	0.748-1.376		
Divorced or widowed	1.029	0.562-1.885		
Education				
0-5 years	1	0.592-1.688	-	-
6-8 years	1.000	0.679-1.347		
8-10 years	0.957	0.672-1.394		
More than 10 years	0.968			
Income (monthly)				
<500 $	1			
500-999 $	1.102	0.804-1.510	-	-
>1000 $	0.919	0.596-1.416		
Self-rated income				
Good	1		-	-
Fair	0.919	0.676-1.249		
Bad	1.148	0.712-1.852		
Health status perception				
Good	1		1	
Fair	1.364	1.022-1.821	1.486	1.077-2.051
Bad	2.349	1.181-4.674	2.866	1.227-6.696
Smoking				
Non-smoker	1	0.566-1.244	0.848	0.547-1.314
0-9 cigarettes/day	0.839	0.416-1.036	0.493	0.294-0.827
10-19 cigarettes/day	0.656	0.412-1.202	0.566	0.316-1.015
>20 cigarettes/day	0.703	0.510-1.301	0.797	0.476-1.335
Ex-smoker	0.814			

Table 2. (Continued)

Factors	Univariate logistic regression analysis		Multiple logistic regression analysis (backward Wald)	
	Odds ratio	95% CI Lower-Upper	Odds ratio	95% CI Lower-Upper
Alcohol consumption				
Regularly	1		-	-
Non-user	1.125	0.814-1.554		
Chronic diseases				
None	1	0.948-1.701	-	-
At least one chronic disease	1.270	1.539-2.495		
More than one disease	0.949			
CAM is superior to ConM				
Yes	1			
No	0.396	0.242-0.646	0.382	0.219-.0664
Sometimes	0.843	0.499-1.425	0.846	0.467-1.532
Body mass index				
<18 5	1			
18 5-24,9	1.153	0.581-2.289	-	-
25-29,9	0.907	0.453-1.818		
>30	0.877	0.411-1.870		

CI: confidence interval.

Table 3. Complementary and alternative medicine methods used by our participants.

CAM METHODS	Total n: 511	
	n	%
Herbal drugs	484	94.7
Thermal spring	13	2.5
Religious prayer	7	1.4
Acupuncture	3	0.6
Magnetic field treatment	2	0.4
Others	2	0.4
Total	511	100

Table 4. Herbal products used by our participants.

HERBAL PRODUCTS	n	%
Linden tea	426	88.1
Garden sage	20	4.1
Thyme	15	3.1
Stinging nettle	8	1.6
Mint	6	1.2
Aloe vera	2	0.4
Kantaran pasture	1	0.2
Others	6	1.2
Total	484	100

In a study conducted in Izmir, the results of age and educational status were similar to those of our participants (23). In that study, the number of patients was fewer than ours, but similar to results in our study, females noted more chronic illness and had poorer health perception compared with males, while males sought treatment less than females. Males can be considered as being less sensitive to illness than women, or as not taking action as quickly (23). In our study, married people had more chronic illnesses. Our study revealed that 17% of the participants chose not to do anything in the event of an illness, and this result is concordant with

Araz's study (23). This can be due to the unavailability of health services and the absence of health insurance. In health education and planning, this should be better taken into account. Contrary to that study (23), a large majority of our participants did not inform their doctors about their CAM use. Physicians should thus be aware and inquire if their patients use CAM.

Our study reveals that albeit common use of CAM, participants generally believed ConM was superior. This was justified by the fact that although people used CAM methods, their first resort in case of an illness was ConM. Their cultural and religious beliefs and geographic and economical situation can play a role in this issue.

Although the side effects of herbs are known scientifically (12,21), our study showed that only a few participants faced side effects. This can be due to lack of awareness or with not relating the side effects to the herbal product. It would be better if physicians inform their patients about the side effects, also stating that although herbal medicine is natural, side effects can still occur.

In comparison with the study of Algier and friends (21), our study showed higher prevalence of CAM use among women. In their study, friends played an important role in recommending CAM, while in our study family was the most common resource. In their study, there was also a relationship between CAM use and educational status (21), but our study showed no such relationship.

In a study conducted in North Carolina, United States, 20% of participants had used medicinal herbs in the past 12 months (24). This rate was 58.5% in our study. In that study, herbal medicine use was related to increased age, education, joint pain, alcohol consumption, and being overweight (body mass index [BMI] >25.0). Our study showed that being female, a non-smoker and of normal weight increased the use. In the mentioned study (24), "never diagnosed with cardiovascular disease" was found to be related to past 12-month medicinal herb use. In our study, chronic diseases led to an increase in CAM use. In the US study (24), one-third of the participants reported discussing medicinal herb use with a physician, while this ratio was one-tenth in our study. Wheaton et al. (24) stated that only 5% of adult respondents had given medicinal herbs to their children in the previous 12 months, while in our study it was more than 25%. When the harm of herbal medicine is considered, this difference is very interesting. It can be due to cultural and health perception differences between the two countries. To prevent the side effects and harm, education of individuals is very important and family physicians in particular play an important role (24).

Our study has some limitations. The questionnaire is not validated. Since alternative herbal medicine is queried, herbal products that are believed to prevent certain illnesses may not have been included. The strong point of our study is that it is a population-based study in which the sample size can represent the Aydin population. It is the only known study searching the sociodemographic uses of CAM and the factors affecting its use in our population. Another important point of this study is that patients do not consult their doctors about alternative treatments. For this reason, it is very important for physicians to question their patients about CAM use, but many doctors are not educated or aware in this regard. For example, only one-third of medical schools in the US provide education regarding this important issue (24). It is included in only some schools in Turkey (23). Similar to our study, Al-Rowais (25) stated that 73% of herb-user diabetic patients do not inform their doctor regarding their use of herbs. Having the key role in the health care system, primary care physicians should be aware of CAM use (26). CAM lectures can be added to the medical curriculum. In Adnan Menderes University, a two-hour lecture is given to fifth-year students and family medicine residents for three years (by author SA).

It is clear that a biopsychosocial approach will help patients understand and co-operate better (27). This biopsychosocial approach should better include CAM regarding its most common use.

In conclusion, CAM, especially herbal medicine, is commonly used in our population, and individuals employ these methods not only for themselves but also their children. Our study shows that half of the population applies CAM treatments and this is affected by health status perception, being a non-smoker and believing that "CAM is superior to ConM". As patients do not consult their doctors regarding CAM, the subject should be included in medical curricula.

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