Clinical and Experimental Health Sciences

Complementary and Alternative Medicine Uses of Individuals Diagnosed with Chronic Diseases

Didem Oktar[1], Selma Metintaş[1], Muhammed Fatih Onsuz[1], Ece Elif Öcal[2], Seval Çalışkan Pala[3]

[1] Eskişehir Osmangazi University, School of Medicine, Department of Public Health, Eskişehir, Türkiye.
[2] Uşak University, School of Medicine, Department of Public Health, Uşak,Türkiye.
[3] Eskişehir Provincial Health Directorate, Eskişehir, Türkiye.

Correspondence Author: Didem Oktar
E-mail: ddmoktar@hotmail.com

Received: 07.03.2022 **Accepted:** 26.09.2022

ABSTRACT

Objective: The aim of the study was to evaluate the use of CAM practices by individuals who have been admitted to health institutions and have been diagnosed with chronic diseases.

Methods: Patients with a diagnosis of chronic disease were included in this cross-sectional observational study. The use of 15 CAM modalities were evaluated in accordance with the Traditional and Complementary Medicine Regulations. Logistic regression analysis was further performed the association between CAM use and related factors.

Results: The mean age of 692 people in the study group was 50.6±13.6 years. In this study, the frequency of CAM use was found to be 37.1%. Univariate and age adjusted univariate logistic regression analysis performed to determine the correlation of the use of CAM practices with respect to sociodemographic variables and health-related variables revealed that being a woman, admitting to faculty of medicine, not having an income-generating job and living in an extended family were found to be positive predictors of CAM use.

Conclusion: The fact that one out of every three patients diagnosed with a chronic disease and who have admitted to a health care institution had already experienced CAM practices indicate that the orientation towards CAM practices is quite high. Further comprehensive research is necessary with regard to planning the integration of CAM practices into health services.

Keywords: Complementary therapies, chronic disease, prevalence

1. INTRODUCTION

Gradually increasing incidence of the chronic diseases as well as the fact that they trigger 7 out of 10 every death case in the world and account for a significant portion of the Disability-Adjusted Life Years (DALY) make chronic diseases an important public health priority (1, 2). Recent decrease in fertility rates and the increase in the prevalence of chronic diseases exposed by the aging population due to the prolongation of the life expectancy at birth impose a significant burden on the health system and may lead individuals to seek different treatments (2, 3). Accordingly, health care professionals assume significant roles in the evidence-based delivery of health services.

Complementary and Alternative Medicine (CAM) practices, which are based on beliefs and experiences specific to different cultures, are referred to in order to protect health, prevent, diagnose and treat physical and mental illnesses (4). The World Health Organization has developed and launched the 2014-2023 Traditional Medicine Strategy in response to the World Health Assembly resolution on traditional medicine. The strategy aims to support Member States in developing proactive policies and implementing action plans that will strengthen the safe and effective use of traditional medicine by conducting research on integrating traditional medicine products into health systems to exploit the potential contribution of traditional medicine to human-centered health care services (5). This strategy document is the main document explaining the current global situation and priorities for CAM and constitutes a road map for further research on CAM (6). The Regulation Governing CAM practices in Turkey was introduced in 2014. This regulation, stipulating the purpose, scope and the law constituting the legal grounds stipulates the qualifications of practitioners and medical institutions to practice CAM and clarifies the methods to be applied in different diseases (7).

There are a wide range of CAM practices depending on the strength of the cultural influence, the structure of the health

DOI: 10.33808/clinexphealthsci.1185236

care system and the current regulations in the country (8). Besides, an increasing number of health professionals in various parts of the world are doing research on issues related to the safety, effectiveness, quality and accessibility of different CAM practices (5). High-quality evidence have been obtained in the increasing number of randomized controlled research studies published in recent years. Accordingly, the interest towards CAM practices has been scaling up for reasons such as meeting well-being needs of people with chronic diseases which could not yet been met with in the current health system (9,10). Other reasons why these practices are gaining more and more space in the delivery of health care services are considered as cultural identity, a holistic healing approach and closer communication between patient-practitioner (11). On the other hand, it should be noted that the use of CAM practices which is not based on scientific evidence, may cause serious health problems that can lead to death.

The aim of the study was to evaluate the use of CAM practices by individuals who have been admitted to health institutions and have been diagnosed with chronic diseases.

2. METHODS

2.1. Study Design, Setting and Population

This cross-sectional research was conducted between March – June 2019 with individuals who had been diagnosed with chronic diseases, applied to the health institutions for treatment.

Eskişehir province consists of two central and twelve semi-rural/rural districts and has a population of 887,475 in accordance with 2019 TURKSTAT data. Male individuals make up 49.9% of the population, 78.5% are 18 years of age or older and 88.3% live in the city center (12). There is one Level 3 (Tertiary) and two Level 2 (Secondary) hospitals in Eskişehir city center. In addition, 74 Family Health Centers (FHC) (56 FHCs in the provincial center and 18 FHCs in the semi-rural areas) provide primary health care services (13).

2.2. Sample Size

A two-step sampling method was used in the study. At the first stage, the health institutions included in the study were selected via cluster sampling, which is one of the Probabilistic Sampling Methods. Accordingly, a total of five clusters were formed: three clusters were drawn up for Family Health Centers (FHC), which provide primary health care services, one each from two central districts and one from the semi-rural district in addition to one cluster each for Level 2 (secondary) and Level 3 (Tertiary) health institutions. In case there is more than one health care institutions in any level of health care institutions, a simple, random sampling method with a closed envelope was used. At the next stage of the study, a non-probabilistic sampling method was used and individuals aged 18 years and over, who admitted to the selected health institutions for treatment and who had provided their consent to participate in the research were included. As the number of patients who would admit to health institutions for treatment throughout the term of our research cannot be accurately estimated, we used the sample size calculation formula for unknown population. The sample size was calculated, taking into consideration 25% as the percentage of using CAM practices in accordance with the findings of similar studies conducted earlier, accepting 95% of confidence interval, a 5% margin of error and a pattern effect of '2' (14). Minimum sample size was calculated to be at least 580, with 116 individuals from each cluster and the study group consisted of 692 individuals.

2.3. Data Collection

Consecutive patients who admitted to the designated health institutions throughout the term of the study and who agreed to participate in the survey were informed about the subject and purpose of the study; subsequently their verbal consent was obtained. The question of whether the participant had any chronic disease was resolved by asking 'Have you been diagnosed with a chronic disease that requires constant use of any medication?'. Multimorbidity and comorbidity were not questioned. Having used GETAT applications at least one time in a life period was counted as using these applications. The questionnaire was filled out personally by the participants under observation during a face-to-face interview. This procedure took about 10-15 minutes. Individuals who did not agree to participate in the study, who had insufficient cognitive functions or who could not be communicated were excluded from the research.

The questionnaire, which was prepared by the researchers as a data collection tool by referring to the literature, consists of 2 sections (15-16). Section 1 included questions on sociodemographic variables, health-related variables and questions that are considered to be related with the use of CAM practices whereas Section 2 included questions asking the participants whether they have heard of, used or wanted to have further information about 15 CAM practices included in the regulation.

2.4. Statistical Analysis

Data collected were statistically evaluated with the SPSS (v15.0) statistical software. Descriptive statistics of all the data in the study were provided in numbers and percentages. Chi-square test was used to compare the categorical variables between the groups. The relation of the use of CAM practices, which is a dependent variable, with respect to significant independent variables of the Chi-Square test was examined by univariate and age-adjusted univariate Logistic Regression Analysis.

2.5. Ethics Approval

The research was initiated upon receiving the approval of the Non-Interventional Clinical Research Ethics Committee of Eskişehir Osmangazi University dated 15.02.2019 and numbered 25403353-050.99-E.20.484 and the necessary administrative permits of relevant health care institutions.

3. RESULTS

The ages of 692 individuals who made up the study group ranged between 18 to 87 and the mean age was 50.6±13.6 years. Chronic diseases of the individuals included in the study group are exhibited in Table 1.

Table 1. *Chronic diseases of the individuals included in the study group*

Chronic Diseases	n	%
Hypertensive disorders	186	26.9
Impaired glucose regulation and diabetes mellitus	163	23.6
Diseases of the thyroid gland	81	11.7
Chronic lower respiratory tract diseases	52	7.5
Diseases of the musculoskeletal system and connective tissue	39	5.6
Ischemic heart diseases	33	4.8
Diseases of the nervous system	32	4.6
Mental and behavioral disorders	31	4.5
Malignant neoplasms	20	2.9
Benign diseases of the esophagus, stomach and duodenum	11	1.6
Other	44	6.4
Total	692	100.0

Most common chronic disease that adversely affect individuals' daily live was reported as hypertensive disorders (26.9%).

The results of the univariate and age adjusted univariate logistic regression analysis performed to determine the frequency of the use of CAM practices in the study group and related factors are exhibited in Table 2.

Research findings indicated the frequency of CAM use as 37.1% (n:257). Univariate and age adjusted univariate logistic regression analysis performed to determine the correlation of the use of CAM practices with respect to sociodemographic variables and health-related variables revealed that being a woman, admitting to faculty of medicine, not having an income-generating job and living in an extended family were found to be positive predictors of CAM use.

Individuals who want CAM practices to be prescribed by a physician and to be applied within a health institution were found to be more likely to use CAM practices (p<0.001). The individuals in the study group stated that they wanted CAM practices to be applied within the family health centers (40.9%).

Responses of the participants regarding whether they have heard of, used or wanted to have further information about CAM practices included in the regulation are exhibited in Figure 1.

Table 2. *The results of the univariate and age adjusted univariate logistic regression analysis performed to determine the frequency of the use of CAM Practices in the study group and related factors*

Sociodemographic Variables and Health-related Variables		Use of CAM practices n (%)	Univariate OR (95% CI)	Age Adjusted Univariate OR (95% CI)
Age Group	18-39	33 (12.8)	1	
	40-60	155 (60.3)	2.06 (1.32-3.20)[b]	
	61 and above	69 (26.9)	1.95 (1.19-3.21)[b]	
Gender	Male	88 (34.2)	1	1
	Female	169 (65.8)	1.55 (1.12-2.12)[b]	1.69 (1.22-2.34)[b]
Place of Referral	Level 2	30 (11.7)	1	1
	Level 1	151 (58.8)	1.65 (1.04-2.61)[a]	1.51 (0.95-2.41)
	Level 3	76 (29.5)	2.53 (1.51-4.25)[c]	2.43 (1.45-4.10)[b]
Marital Status	Single	17 (6.6)	1	1
	Married	180 (70.1)	1.98 (1.12-3.51)[a]	1.55 (0.81-2.99)
	Widow/ Divorced	60 (23.3)	2.47 (1.31-4.67)[b]	1.84 (0.88-3.87)
Income Generating Job	Yes	144 (56.0)	1	1
	No	113 (44.0)	1.42 (1.04-1.94)[a]	1.45 (1.05-1.98)[a]
Type of Family	Extended family	58 (22.6)	1.80 (1.02-3.18)[a]	1.86 (1.05-3.28)[a]
	Nuclear Family	172 (66.9)	1.35 (0.83-2.20)	1.49 (0.91-2.45)
	Single Parent Family	27 (10.5)	1	1
Alcohol Consumption	Yes	25 (9.7)	1	1
	No	232 (90.3)	1.66 (1.02-2.71)[a]	1.50 (0.91-2.46)
	Total	257 (100.0)		

a: p<0.05, b: p<0.01, c: p<0.001
OR: Odds ratio, CI: Confidence interval, CAM: Complementary and alternative medicine, Level 1: Family Health Centers (FHC), Level 2: State Hospital, Level 3: Faculty of Medicine

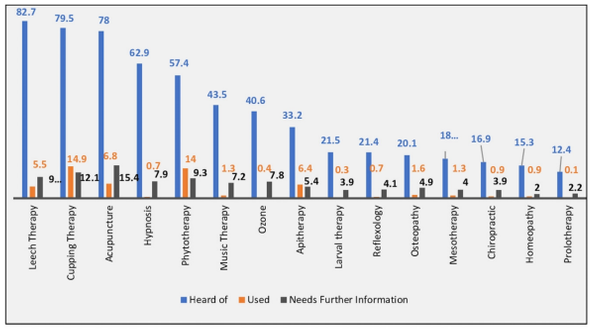

Figure 1. *Responses of the participants regarding whether they have heard of, used or wanted to have further information about complementary and alternative medicine practices included in the regulation. *Percentages are calculated based on the responses.*

The most CAM practice frequently heard of in the study group was Leech Therapy (82.7%), the most commonly used CAM practice was found to be Cupping Therapy (14.9%). Acupuncture (15.4%), Cupping Therapy (12.1%) and Leech Therapy (9.9%) were the top three CAM practices that the participants wanted to learn more about.

The first three most commonly used CAM practices in the presence of chronic diseases were compared with the chi-square test for each chronic disease with respect to the preference of the individuals diagnosed with and without the disease. The frequency of using the top 3 CAM in the presence of chronic diseases on the basis of chronic diseases is exhibited in Table 3.

Table 3. *The frequency of using the top 3 CAM in the presence of chronic diseases on the basis of chronic diseases*

Chronic Diseases	CAM Practice Used n (%)		
	Cupping Therapy n (%)	Phytotherapy n (%)	Acupuncture n (%)
Hypertensive disorders	24 (12.9)	16 (8.6)*	14 (7.5)*
Impaired glucose regulation and diabetes mellitus	21 (12.9)	29 (17.8)	8 (4.9)
Diseases of the thyroid gland	10 (12.3)	15 (18.5)	7 (8.6)
Chronic lower respiratory tract diseases	5 (9.6)	3 (5.8)*	2 (3.8)
Diseases of the musculoskeletal system and connective tissue	9 (23.1)	7 (17.9)	2 (5.1)
Ischemic heart diseases	6 (18.2)	4 (12.1)	3 (9.1)
Diseases of the nervous system	10 (31.3)**	5 (15.6)	5 (15.6)
Mental and behavioral disorders	6 (19.4)	2 (6.5)	2 (6.5)
Malignant neoplasms	1 (5.0)	4 (20.0)	1 (5.0)
Benign diseases of the esophagus, stomach and duodenum	2 (18.2)	3 (27.3)	2 (18.2)

CAM: Complementary and alternative medicine
** CAM Practice is more frequently used by individuals who do not have the related chronic disease (p<0.05).*
*** CAM Practice is more frequently used by individuals who have the related chronic disease (p<0.05).*

Phytotherapy was found out to be used frequently by individuals without any chronic lower respiratory tract disease and hypertensive disorder, whereas Acupuncture was found out to be used by individuals who did not have hypertensive disorders. Cupping Therapy was found out to be used frequently by individuals with diseases of the nervous system.

Most common reasons underlying the individuals' application to CAM practices were reported as rheumatic complaints (37.1%). The reasons of individuals in the study group applying to CAM practices and their frequency of application are exhibited in Figure 2.

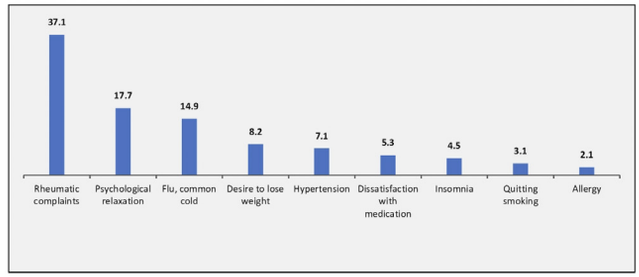

Figure 2. *The reasons of individuals in the study group applying to complementary and alternative medicine practices and their frequency of application. *Percentages are calculated based on the responses.*

The reasons underlying the perceptions of individuals in the study group towards CAM practices are exhibited in Table 4.

Table 4. *The reasons underlying the perceptions of individuals in the study group towards CAM Practices*

Reasons for Using CAM Practices	n=417*	%
There is no medical treatment for my disease/disorder	89	21.4
Interest	71	17.0
Recommendations of the Health care Professional	70	16.8
These are economic interventions	63	15.1
Side effects of the medical treatment	56	13.4
Access to health care services is challenging	39	9.4
High expenses of the medical treatment	29	6.9
Reasons for not considering CAM Practices	**n=585****	**%**
I did not need	254	43.4
Lack of confidence on CAM	59	10.1
Worries about side effects	56	9.6
Doesn't believe in its benefits	49	8.4
Worries about possible harms	48	8.2
Practitioners are not experienced	35	6.0
Insufficient research	28	4.8
Lack of the practitioner's referral	23	3.9
Not covered by medical insurance	15	2.6
Expensive	10	1.7
Negative views of the family	8	1.3

CAM: Complementary and alternative medicine
**The figures were derived on the basis of multiple answers provided by the individuals who have used CAM Practices before.*
***The figures were derived on the basis of multiple answers provided by the individuals who have not used CAM Practices before.*

The most common reasons reported by 257 (37.1%) individuals in the study group for using CAM practices at any time of their lives were "There is no medical treatment for my disease/disorder" (21.4%), "interest" (17.0%) and "Recommendations of the Health care Professional" (16.8%). The most common reasons reported by 435 individuals (62.9%) in the study group for not considering CAM practices at any time of their lives were "I did not need" (43.4%),

"Uncertainty" (10.1%) and "Worries about side effects" (9.6%).

4. DISCUSSION

Reasons such as the aging population, the increasing prevalence of chronic diseases caused by inactivity and irregular nutrition, the inability of physicians to devote sufficient time to their patients due to the heavy burden on the health system, side effects of the drugs due to the use of multiple medications and new health needs brought about by the age has revealed the need to expand the scope of health services. Bearing the qualifications compatible with the cultural background of society, accompany the individuals to accept and frequently use of CAM practices. Having sufficient knowledge about CAM practices is accordingly suggested for the physicians to accurately guide patients' demands.

Most common reported chronic diseases within the scope of the study were found to be hypertensive disorders, impaired glucose regulation and diabetes mellitus and diseases of the thyroid gland, respectively. Most common diseases reported in the study conducted in Hong Kong were cardiovascular, musculoskeletal and diabetes (17). Most common diseases reported in the study conducted in Ireland were hypertension and hyperlipidemia (18). Different results obtained may have been attributed to the age and gender differences of the participants. Research findings indicated the frequency of CAM use as 37.1%. In the studies conducted on patients diagnosed with chronic diseases in Australia, Bangladesh and India, the frequency of CAM use was reported as 32-38% (10,19,20). Another study reported that CAM was used by 44.0% of participants during the COVID-19 pandemic (17). The frequency of CAM use by hypertensive patients in Nigeria was found to be 29% (21). This figure is noted as 33-46% for diabetic patients from different countries (19,22,23). It was reported as 87% for patients diagnosed with cancer in the United States (24). Accordingly, the frequency of CAM use was concluded to be similar with the literature.

Research findings indicated that CAM use was rare in single patients under the age of 40, admitted to a Level 2 health facility and who consumed alcohol. Furthermore female participants who lived in extended families and who did not have an income generating job were found to be less frequently using CAM. After evaluating the effect of the age variable; being female, having admitted to a tertiary health facility, not working in an income-generating job and living in an extended family were found to be positively related variables with using CAM. In a study conducted with adults diagnosed with a chronic disease in Australia, it was reported that regular use of CAM is more frequent in females aged ≥ 60 years and with a low-income (25). Another research conducted in Pakistan on patients diagnosed with Type 2 diabetes revealed that CAM use was frequent among females, divorced individuals, unemployed and illiterate individuals (26). In the study conducted in Saudi Arabia, being over the age of 50, being unemployed and knowing the advantages of CAM practices were mentioned as effective variables with regard to the use of them (27). Another research conducted in Turkey revealed that the use of CAM practices are associated with female gender, being married, not working in an income-generating job, low income and high levels of education (28). In studies conducted in Malaysia and Turkey, the use of CAM practices has been reported to be more frequent within individuals with family members who have experienced CAM before (15,29). Another research conducted in Turkey revealed no correlation between smoking habit and alcohol consumption and CAM use (30). Considering that individuals who have admitted to a faculty of medicine have not received a definitive treatment for their suffering or have multiple health needs, it is expected that they will seek different treatments. The presence of individuals who have previously experienced CAM practices in an extended family is expected to reduce family members' prejudices about the issue and raise awareness.

It is important to prevent the public from applying to people who are not experts about GETAT practices and to provide equal and accessible health services to everyone.

During the research, individuals who prefer CAM practices to be prescribed by a physician and to be applied within a health institution were found to be more likely to use CAM practices. Accordingly, the participants stated that they wanted CAM practices to be applied within the family health centers. Similar result was reported in the previously conducted a study (31).

In this research, it was concluded that the most commonly heard CAM practices are Leech Therapy, Cupping Therapy and Acupuncture however, the most commonly used CAM practices are Cupping Therapy, Phytotherapy and Acupuncture. In studies conducted on the general population in the United States and Malaysia, most frequently used CAM practices were indicated as biological-based applications (plant-based products, vitamins and supplements) (24,32). The research conducted in Saudi Arabia revealed the most commonly used CAM practices as herbs, wet cupping and vitamin-minerals (27). The research conducted in Brazil noted that the use of CAM practices varies depending on the income status and it was reported that individuals with a high income level tend to use acupuncture and homeopathy whereas individuals with a lower income tend to refer to herbal medication and medicinal plants (33). It is observed in studies that the most frequently used CAM practices differ, however herbal products occupy the first place in majority of these studies and individuals tend to use and experience the practices that they know or have heard about. In addition, being cost-effective and easily accessible may also be important reasons underlying preference.

Research on the use of CAM practices in diagnosed diseases are limited. This research indicated that Cupping Therapy has frequently been applied to individuals with diseases of the nervous system and Phytotherapy and Acupuncture have frequently been applied to individuals without hypertensive disorders. In a study conducted in Canada it was reported that chiropractic has frequently been applied to individuals

diagnosed with migraine and asthma whereas acupuncture and reflexology have frequently been applied to individuals diagnosed with diabetes (34). In a study conducted in India it was reported that ayurveda has frequently been applied to individuals diagnosed with epilepsy, rheumatoid arthritis and HIV whereas natural remedies prepared at home has frequently been applied to individuals diagnosed with diabetes (20).

Research indicated that the most common reasons for applying to CAM practices are rheumatic complaints, the need for psychological relief and flu-colds. A research conducted in the Germany indicated that the most common reasons for applying to CAM practices are flu infection, sleeping disturbances and musculoskeletal issues (35). Another research conducted in Iran reported that 23% of the participants referred to CAM practices due to digestive system diseases, 14.4% due to colds and 13.2% due to migraines (36). In a study conducted with patients with cancer in Uganda it was reported that reasons for referring to CAM practices are cancer treatment, strengthening the immune system and relieving pain (37). Rheumatic complaints that persist for a long time, reducing the quality of life, may lead a person to seek different treatments. However, dissatisfaction from medical treatment and believing that some complaints are not important enough to require a doctor's referral may have caused these results.

The cultural viewpoint of the society, the level of knowledge of individuals about CAM practices and the inclusiveness of the health care system are important predictors affecting the orientation towards these practices. Research findings indicated most common reasons for applying CAM practices were believing that there is no medical treatment for the disease/disorder, interest and recommendations of the Health care Professional, while the most common reasons for not considering CAM practices were lack of need, uncertainty and worries about side effects. Another research conducted in Czechia indicated that individuals have more often referred to CAM practices to prevent and treat diseases (38). Similar results were reported in another research conducted in Zimbabwe (39). Another research conducted in Saudi Arabia on patients diagnosed with Type 2 diabetes indicated that the most common reasons for applying to CAM practices are less side-effects, benefits for controlling diabetes, being cost-effective and ease of access (27). Several other research conducted in Turkey indicated that the most common reasons for applying to CAM practices are need for relief, treatment, seeking support for current treatment, complaints about insufficient benefit from medical treatment, inability to access health care providers and medical treatment for reasons such as distance, desperation related to chronic diseases that are inadequately treated with current medical methods and no worry about possible harms/disadvantages/damages (15,40). In another research participants reported the reasons underlying their indifference towards CAM practices as not believing in their benefits and worries about possible harms/disadvantages/damages (15). Most common reasons underlying individuals' orientation towards CAM practices were observed to be disease/disorder related reasons such as considerations with regard to ineffective medical treatment and worries about side effects of the medical treatment. The findings, in particular, suggest the need for a thorough questioning of the medical history of the patient in the presence of chronic diseases that require long-term treatment and follow-up as well as the need for further information about CAM practices.

5. CONCLUSION

For the purpose of health-related decisions, it is important to take into consideration the perceptions and orientations of individuals with regard to CAM practices. Most commonly reported chronic diseases within the scope of the study were hypertension, diabetes and thyroid gland dysfunction. Research findings indicated the frequency of CAM use as 37.1%. Variables such as being female, having admitted to a tertiary health facility, not working in an income-generating job and living in an extended family were found to be more likely to affect CAM use. Most frequently used CAM practices were Cupping Therapy, Phytotherapy and Acupuncture.

The fact that one out of every three patients diagnosed with a chronic disease and who have admitted to a health care institution had already applied CAM practices indicate that the orientation towards CAM practices is quite positive. Allowing CAM practices to be applied within the health care institutions, ensuring that they are prescribed by physicians and are covered by insurance policies are considered to improve their reliability and acceptability and shall ensure health care professionals to have control over preventing possible complications. In addition, we think that health care professionals should able to advise their patients when to/when not to apply CAM practices and that they should have received adequate training to apply them when necessary.

Funding: *The author(s) received no financial support for the research.*
Conflicts of interest: *The authors declare that they have no conflict of interest.*
Ethics Committee Approval: *This study was approved by Non-Interventional Clinical Research Ethics Committee of Eskişehir Osmangazi University dated 15.02.2019 and numbered 25403353-050.99-E.20.484.*
Peer-review: *Externally peer-reviewed.*
Author Contributions:
Research idea: DO, SM
Design of the study: DO, SM, MFO
Acquisition of data for the study: DO, SM, EEO
Analysis of data for the study: DO, SM, MFO, EEO
Interpretation of data for the study: MFO, EEO, SÇP
Drafting the manuscript: DO, SM, MFO, EEO, SÇP
Revising it critically for important intellectual content: DO, SM,
Final approval of the version to be published: DO, SM, MFO, EEO, SÇP

REFERENCES

[1] World Health Organization, Global Health Estimates, Leading Causes of Death and Disability, A Visual Summary of Global

and Regional Trends 2000-2019. Accessed [19 March 2022]. https://www.who.int/data/stories/leading-causes-of-death-and-disability-2000-2019-a-visual-summary

[2] The Lancet Infographics Global Burden of Disease 2019. Accessed [30 September 2021]. https://www.thelancet.com/infographics/gbd-2019

[3] World Health Organization. Global Status Report on Noncommunicable Diseases 2014. Accessed [2 February 2020]. https://www.who.int/publications/i/item/978.924.1564854

[4] World Health Organization. Traditional, Complementary and Integrative Medicine. Overview. Accessed [2 February 2020]. https://www.who.int/health-topics/traditional-complementary-and-integrative-medicine#tab=tab_1

[5] World Health Organization. WHO Traditional Medicine Strategy: 2014-2023. Accessed [3 February 2020]. https://www.who.int/publications/i/item/978.924.1506096

[6] Burton A, Smith M, Falkenberg T. Building WHO's Global strategy for traditional medicine. Eur J Integr Med. 2015;7(1):13-5. DOI: 10.1016/j.eujim.2014.12.007

[7] Mevzuat Bilgi Sistemi. Geleneksel ve Tamamlayıcı Tıp Uygulamaları Yönetmeliği. Accessed [6 February 2020]. https://www.mevzuat.gov.tr/mevzuat?MevzuatNo=20164&MevzuatTur=7&MevzuatTertip=5

[8] Ung COL, Harnett J, Hu H. Community pharmacist's responsibilities with regards to traditional medicine/complementary medicine products: A systematic literature review. Res Social Adm Pharm. 2017;13(4):686-716. DOI: 10.1016/j.sapharm.2016.08.001

[9] Wode K, Henriksson R, Sharp L, Stoltenberg A, Hök Nordberg J. Cancer patients' use of complementary and alternative medicine in Sweden: A cross-sectional study. BMC Complement Altern Med. 2019;19(1):1-11. DOI: 10.1186/s12906.019.2452-5

[10] Foley H, Steel A, McIntyre E, Harnett J, Sibbritt D, Wardle J, Adams J. Complementary medicine practitioner consultations amongst 1,314 individuals with chronic conditions: Characteristics of users, reasons for and predictors of use. Complement Ther Clin Pract. 2020;40:101194. DOI: 10.1016/j.ctcp.2020.101194

[11] Gyasi R, Buor D, Adu-Gyamfi S, Adjei PO-W, Amoah PA. Sociocultural hegemony, gendered identity, and use of traditional and complementary medicine in Ghana. Women Health 2018;58(5):598-615. DOI: 10.1080/03630.242.2017.1321608

[12] Türkiye İstatistik Kurumu, Adrese Dayalı Nüfus Kayıt Sistemi Sonuçları, Adrese Dayalı Nüfus Kayıt Sistemi İstatistikleri. Accessed [1 May 2020]. http://tuik.gov.tr/PreTablo.do?alt_id=1059

[13] T.C. Sağlık Bakanlığı Eskişehir İl Sağlık Müdürlüğü, Aile Sağlığı Merkezleri, Hastaneler. Accessed [1 May 2020]. https://eskisehirism.saglik.gov.tr/TR,39889/aile-sagligi-merkezleri.html

[14] Daye M, Durmaz K, Durduran Y. Traditional and complementary medicine practices in patients admitted to dermatology outpatient clinic. Konuralp Medical Journal 2020;12(2):247-252. DOI: 10.18521/ktd.639063

[15] Yıldız P, Fatih Ü, Balbay EG. Kronik obstrüktif akciğer hastalarında geleneksel ve tamamlayıcı tıp yöntemi kullanımının değerlendirilmesi. Online Turkish Journal of Health Sciences 2020;5(1):147-54. DOI: 10.26453/otjhs.638683

[16] T.C. Resmi Gazete, Sağlık Bakanlığı Geleneksel Ve Tamamlayıcı Tıp Uygulamaları Yönetmeliği. Accessed [16 August 2020]. https://www.resmigazete.gov.tr/eskiler/2014/10/20141027.pdf

[17] Lam CS, Koon HK, Chung VCH, Cheung YT. A Public survey of traditional, complementary and integrative medicine use during the COVID-19 outbreak in Hong Kong. PloS One 2021;16(7): 1-15. DOI: 10.1371/journal.pone.0253890

[18] Kearns K, Dee A, Fitzgerald AP, Doherty E, Perry IJ. Chronic disease burden associated with overweight and obesity in Ireland: The effects of a small BMI reduction at population level. BMC Public Health 2014;14(1):1-10. DOI: 10.1186/1471-2458-14-143

[19] Shahjalal M, Chakma SK, Ahmed T, Yasmin I, Mahumud RA, Hossain A. Prevalence and determinants of using complementary and alternative medicine for the treatment of chronic illnesses: A multicenter study in Bangladesh. PLoS One 2022;17(1): 1-13 DOI: 10.1371/journal.pone.0262221.

[20] Bhalerao MS, Bolshete PM, Swar BD, Bangera TA, Kolhe VR, Tambe MJ, Wade MP, Bhowate SD, Sonje UB, Gogtay NJ, Thatte UM. Use of and satisfaction with complementary and alternative medicine in four chronic diseases: A Cross-sectional study from India. Natl Med J India 2013;26(2):75-77.

[21] Osamor PE, Owumi BE. Complementary and alternative medicine in the management of hypertension in an urban Nigerian community. BMC Complement Altern Med 2010;10(1):1-9. DOI: 10.1186/1472-6882-10-36

[22] Ogbera AO, Dada O, Adeleye F, Jewo PI. Complementary and alternative medicine use in diabetes mellitus. West Afr J Med. 2010;29(3):158-162 DOI: 10.4314/wajm.v29i3.68213

[23] Radwan H, Hasan H, Hamadeh R, Hashim M, AbdulWahid Z, Hassanzadeh Gerashi M, Al Hilali M, Naja F. Complementary and alternative medicine use among patients with type 2 diabetes living in the United Arab Emirates. BMC Complement Med Ther. 2020;20(1):216. DOI: 10.1186/s12906.020.03011-5.

[24] Judson PL, Abdallah R, Xiong Y, Ebbert J, Lancaster JM. Complementary and alternative medicine use in individuals presenting for care at a comprehensive cancer center. Integr Cancer Ther. 2017;16(1):96-103. DOI: 10.1177/153.473.5416660384

[25] Armstrong AR, Thiébaut SP, Brown LJ, Nepal B. Australian adults use complementary and alternative medicine in the treatment of chronic illness: A national study. Aust N Z J Public Health 2011;35(4):384-390. DOI: 10.1111/j.1753-6405.2011.00745.x

[26] Raja R, Kumar V, Khan MA, Sayeed KA, Hussain SZM, Rizwan A. Knowledge, attitude, and practices of complementary and alternative medication usage in patients of type II diabetes mellitus. Cureus 2019;11(8):e5357 DOI: 10.7759/cureus.5357

[27] Al-Eidi S, Tayel S, Al-Slail F, Qureshi NA, Sohaibani I, Khalil M, Al-Bedah AM. Knowledge, attitude, and practices of patients with type II diabetes mellitus towards complementary and alternative medicine. J Integr Med. 2016;14(3):187-196. DOI: 10.1016/S2095-4964(16)60244-3

[28] Mollaoğlu M, Aciyurt A. Use of complementary and alternative medicine among Patients with Chronic Diseases. Acta Clin Croat. 2013;52(2.):181-188.

[29] Hasan SS, Ahmed SI, Bukhari NI, Loon WCW. Use of complementary and alternative medicine among patients with chronic diseases at outpatient clinics. Complement Ther Clin Pract. 2009;15(3):152-157. DOI: 10.1016/j.ctcp.2009.02.003

[30] Demirci GT, Altunay IK. Use of complementary and alternative medicine and assessment of dermatology quality of life index among dermatology outpatients: A cross-sectional comparative study. Br J Med Med Res. 2014;4(9):1812-1820 DOI: 10.9734/BJMMR/2014/6924

[31] Ee C, Templeman K, Grant S, Avard N, de Manincor M, Reath J, Hunter J. Informing the model of care for an academic integrative health care center: A qualitative study of primary care stakeholder views. J Altern Complement Med. 2020;26(4):300-315. DOI: 10.1089/acm.2019.0321

[32] Siti ZM, Tahir A, Farah AI, Fazlin SA, Sondi S, Azman AH, Maimunah AH, Haniza MA, Siti Haslinda MD, Zulkarnain AK, Zakiah I, Zaleha WW. Use of traditional and complementary medicine in Malaysia: A baseline study. Complement Ther Med. 2009;17(5-6):292-299. DOI: 10.1016/j.ctim.2009.04.002

[33] de Moraes Mello Boccolini P, Siqueira Boccolini C. prevalence of complementary and alternative medicine (CAM) use in Brazil. BMC Complement Med Ther. 2020;20(1):1-10. DOI: 10.1186/s12906.020.2842-8

[34] Metcalfe A, Williams J, McChesney J, Patten SB, Jetté N. use of complementary and alternative medicine by those with a chronic disease and the general population-Results of a national population based survey. BMC Complement Altern Med. 2010;10(1):1-6. DOI: 10.1186/1472-6882-10-58

[35] Welz AN, Emberger Klein A, Menrad K. Why people use herbal medicine: Insights from a focus-group study in Germany. BMC Complement Altern Med. 2018;18(1):1-9. DOI: 10.1186/s12906.018.2160-6

[36] Adib-Hajbaghery M, Hoseinian M. Knowledge, attitude and practice toward complementary and traditional medicine among Kashan Health Care Staff, 2012. Complement Ther Med. 2014;22(1):126-132. DOI: 10.1016/j.ctim.2013.11.009

[37] Mwaka AD, Mangi SP, Okuku FM. Use of traditional and complementary medicines by cancer patients at a national cancer referral facility in a low-income country. Eur J Cancer Care (Engl). 2019;28(6):e13158. DOI: 10.1111/ecc.13158

[38] Pokladnikova J, Selke-Krulichova I. Prevalence of complementary and alternative medicine use in the general population in the Czech Republic. Forsch Komplementmed. 2016;23(1):22-28. DOI: 10.1159/000443712

[39] Chingwaru W, Vidmar J. Prevalence, perceptions and factors influencing the use of traditional and complementary medicine (T&CM) in Zimbabwe's adult population: The case of Bindura District. Eur J Integr Med. 2016;8(4):484-493. DOI: 10.1016/j.eujim.2016.03.007

[40] Şimşek B, Aksoy DY, Basaran NC, Taş D, Albasan D, Kalaycı MZ. Mapping traditional and complementary medicine in Turkey. Eur J Integr Med. 2017;15:68-72. DOI: 10.1016/j.eujim.2017.09.006

How to cite this article: Oktar D, Metintaş S, Onsuz MF, Öcal EE, Çalışkan Pala S. Complementary and Alternative Medicine Uses of Individuals Diagnosed with Chronic Diseases. Clin Exp Health Sci 2023; 13: 184-191. DOI: 10.33808/clinexphealthsci.1185236